ACADEMIC CATALOG 2018-2019

ADVANCED ACADEMIC PROGRAMS

JOHNS HOPKINS

KRIEGER SCHOOL
of ARTS & SCIENCES

Academic and Registration Calendar

2018–19

SUMMER 2018	START	END
Registration	Mar. 19	May 8
Late Registration for 14-Week Semester	May 9	May 15
Late Registration for 12-Week and First 6-Week Sessions	May 21	May 29
Late Registration for Second 6-Week Session	July 3	July 11
May Intensive	May 8	May 25
Add/Drop Period for 14-Week Semester	May 16	May 22
Add/Drop Period for 12-Week and First 6-Week Sessions	May 30	June 5
Add/Drop Period for Second 6-Week Session	July 12	July 18
14-Week Semester	May 16	Aug. 22
Last Day to Drop 14-Week Semester Courses with 100% Tuition/Technology Fee Refund		May 15
12-Week Semester	May 30	Aug. 22
Last Day to Drop 12-Week Session Courses with 100% Tuition/Technology Fee Refund		May 29
First 6-Week Session	May 30	July 11
Last Day to Drop First 6-Week Session Courses with 100% Tuition/Technology Fee Refund		May 29
Second 6-Week Session	July 12	Aug. 22
Last Day to Drop Second 6-Week Session Courses with 100% Tuition/Technology Fee Refund		July 11
Withdraw/Audit Deadline for 14-Week Semester		July 27
Withdraw/Audit Deadline for 12-Week Session		Aug. 3
Withdraw/Audit Deadline for First 6-Week Session		June 29
Withdraw/Audit Deadline for Second 6-Week Session		Aug. 10
Holidays - *(Classes will not meet May 28 - Memorial Day, or July 4- Independence Day)*		

FALL 2018	START	END
Registration	June 18	Aug. 26
Late Registration for 14-Week Semester and First 7-Week Session	Aug. 27	Sept. 4
Late Registration for Second 7-Week Session	Oct. 15	Oct. 23
August Intensive	Aug. 25	Sep. 8
Add/Drop Period for 14-Week Semester and First 7-Week Session	Sept. 5	Sept. 11
Add/Drop Period for Second 7-Week Session	Oct. 24	Oct. 30
14-Week Semester	Sept. 5	Dec. 18
Last Day to Drop 14-Week Semester Courses with 100% Tuition/Technology Fee Refund		Sept. 4
First 7-Week Session	Sept. 5	Oct. 23
Last Day to Drop First 7-Week Session Courses with 100% Tuition/Technology Fee Refund		Sept. 4
Second 7-Week Session	Oct. 24	Dec. 18
Last Day to Drop Second 7-Week Session Courses with 100% Tuition/Technology Fee Refund		Oct. 23
Withdraw/Audit Deadline for 14-Week Semester		Nov. 16
Withdraw/Audit Deadline for First 7-Week Session		Oct. 12
Withdraw/Audit Deadline for Second 7-Week Session		Nov. 30
Holidays - *(Classes will not meet September 3 - Labor Day, or November 19-25 - Thanksgiving Break)*		

SPRING 2019	START	END
Registration	Nov. 1	Jan. 13
Late Registration for 14-Week Semester and First 7-Week Session	Jan. 14	Jan. 22
Late Registration for Second 7-Week Session	Mar. 4	Mar. 12
January Intersession	Jan. 2	Jan. 22
Add/Drop Period for 14-Week Semester and First 7-Week Session	Jan. 23	Jan. 29
Add/Drop Period for Second 7-Week Session	Mar. 13	Mar. 19
14-Week Semester	Jan. 23	May 7
Last Day to Drop 14-Week Semester Courses with 100% Tuition/Technology Fee Refund		Jan. 22
First 7-Week Session	Jan. 23	Mar. 12
Last Day to Drop First 7-Week Session Courses with 100% Tuition/Technology Fee Refund		Jan. 22
Second 7-Week Session	Mar. 13	May 7
Last Day to Drop Second 7-Week Session Courses with 100% Tuition/Technology Fee Refund		Mar. 12
Withdraw/Audit Deadline for 14-Week Semester		Apr. 12
Withdraw/Audit Deadline for First 7-Week Session		Mar. 1
Withdraw/Audit Deadline for Second 7-Week Session		Apr. 26
Holidays - *(Classes will not meet January 1 -New Year's Day, or January 21 - Martin Luther King Day)*		
Spring Break *(March 18-24)*		
AAP Commencement *(TBD)*		

KRIEGER SCHOOL **of** ARTS & SCIENCES
ADVANCED ACADEMIC PROGRAMS

ACADEMIC CATALOG
2018–2019

The Washington, DC Center

Administrative Offices
1717 Massachusetts Ave. NW
Suite 104
Washington, DC 20036
202-452-1280

Homewood Campus

3400 N. Charles St.
Suite S740
Wyman Park Building
Baltimore, MD 21218
410-516-6749

Montgomery County Campus

9601 Medical Center Drive
Rockville, MD 20850
301-294-7162

Online Courses

blackboard.jhu.edu
advanced.jhu.edu/online

A Message from the Associate Dean

We at the Johns Hopkins University Advanced Academic Programs want to change your life. Our professional graduate degree programs help you get to where you want to be in your career and in levels of knowledge attained. We know that as an adult with a lot of competing demands, you look for the flexibility and depth our professional graduate programs offer. We hope you will find in this catalog courses that inspire you to achieve your goals.

Advanced Academic Programs offers a variety of graduate degrees and certificates in fields ranging from biotechnology to museum studies. In all AAP programs, a strong academic foundation supports the applied knowledge and skills students acquire. Classes are offered in several locations and online. AAP also offers joint degrees with other schools at Johns Hopkins University. Our teachers include research faculty members from across the university and practitioners at the highest levels of their professions from government, industry, andthe nonprofit sector. Our students choose Johns Hopkins because they know that where you study matters. They desire an academically rigorous education that challenges them intellectually and offers them opportunities to meet others who have similar goals to advance in their careers or enrich their personal lives. Together, Advanced Academic Programs faculty and students create a learning experience that is unparalleled in part-time graduate education.

Meeting the same criteria for excellence that characterize all Johns Hopkins University programs, AAP courses are judged among the best in the country, if not the world. We recognize that as an adult student, you bring a wealth of life experience and practical insights to your classroom learning. Our faculty members are committed to their teaching and to their own learning in professions that are rapidly changing. AAP demands that its faculty members design and deliver courses that integrate your real-world perspectives with the knowledge they bring as researchers, scholars, and practitioners. The combination produces innovative ideas and engaged learning. In an AAP class, you will find your assumptions challenged, your old ways of thinking changed, and your mind opened to new concepts and conversations.

Learning happens in the classroom, whether it is on-site or online, and also in countries around the globe. Many of AAP's programs include workshops and short-term classes led by Johns Hopkins faculty members in Europe, Asia, and other international locations. International students enroll in virtually all AAP programs, adding global perspectives to your discussions and enriching your network of colleagues and friends.

While you are studying for your degree and after you graduate, AAP offers internship and career advising on-site and online, networking with alumni from throughout the university and the world, and many opportunities to become part of a vibrant community of faculty and students.

We invite you to explore this catalog. Visit our website, advanced.jhu.edu, and contact us for more information. We are eager to help you advance in your career, prepare for a new profession, and grow personally. We look forward to telling you more about the Advanced Academic Programs at Johns Hopkins University.

Sincerely,

John Caron, EdD
Associate Dean

About Krieger School of Arts and Sciences

The Krieger School of Arts and Sciences is at the heart of a leading, diverse, global coeducational university. Privately endowed, the Johns Hopkins University was founded in 1876 as the first true American university on the European model: a graduate institution with an associated preparatory college, a place where knowledge would be created and assembled, as well as taught.

Today, the Krieger School of Arts and Sciences is the core institution of the Johns Hopkins complex of schools, centers, and institutes. Its home is the park-like Homewood campus in the residential Charles Village section of northern Baltimore City.

Advanced Academic Programs

The School of Arts and Sciences recognizes the intellectual strength and educational requirements of working adults. Through Advanced Academic Programs, it offers a Johns Hopkins education to those wishing to attend graduate school. Courses leading to master's degrees are held in the evening and on weekends at the Homewood campus in Baltimore; the Montgomery County Campus in Rockville; the Washington, DC Center near Dupont Circle; and online.

Drawing upon over a century of research and teaching expertise, the programs offer advanced instruction in scientific fields of current interest and innovative graduate study in the humanities and social sciences. While based on the latest scientific and scholarly knowledge, course work emphasizes the application of such knowledge to practical problems. Classes are designed to provide individual attention and to encourage student contribution.

Degree-Granting Divisions of the Johns Hopkins University

> Bloomberg School of Public Health

> Carey Business School

> Krieger School of Arts and Sciences

> Paul H. Nitze School of Advanced International Studies

> The Peabody Institute

> School of Education

> School of Medicine

> School of Nursing

> Whiting School of Engineering

The Johns Hopkins University is privately endowed and accredited by the Middle States Commission on Higher Education, 3624 Market St., Philadelphia, PA 19104-2680; 267-284-5000. Since the university's first president, Daniel Coit Gilman, assembled the first faculty in 1876, education in the arts and sciences at Johns Hopkins has been carried out in a research environment, with international distinction, under the supervision of active researchers. The belief in the inseparability of education and research still guides the academic programs of today's School of Arts and Sciences. Distinguished scholars and scientists share and exchange ideas and knowledge with undergraduates and graduates, encouraging creative thinking and independent research. Residential students take courses from anthropology to writing seminars, offered by 24 degree-granting departments that confer the Bachelor of Arts, the Bachelor of Science, the Master of Arts, the Master of Fine Arts, the Master of Science, and the Doctor of Philosophy. Information regarding full-time education can be found in the Arts and Sciences/Engineering Undergraduate and Graduate Programs catalog. Admission information for the Office of Undergraduate Admissions, Mason Hall, Homewood Campus, or 410-516-8171. Graduate admissions for full-time students in the Krieger School of Arts and Sciences and the Whiting School of Engineering can be found at 101 Whitehead Hall, Homewood Campus, or 410-516-8174.

Contact Information

THE WASHINGTON, DC CENTER

1717 Massachusetts Ave. NW, Suite 104
Washington, DC 20036

Advanced Academic Programs
Admissions and Registration, Suite 101

Main Number	202-452-1940
	800-847-3330
Fax Number	202-452-1970
Email	aapadmissions@jhu.edu
	aapregistration@jhu.edu

Administrative Office, Suite 104

Main Number	202-452-1280
Fax Number	202-452-8713
Student & Faculty Support Services	202-452-0749
Disability Services	202-452-0983

Sheridan Libraries @ DC
Washington Library Resource Center, Suite 100

Main Number	202-452-0714
Fax Number	202-530-9857
Email	washrocklibraries@jhu.edu
Submit A Question:	Askdc.library.jhu.edu

HOMEWOOD CAMPUS

Wyman Park Building Suite S740
3400 N. Charles St.
Baltimore, MD 21218

Administrative Offices

Main Number	410-516-6749
Fax Number	410-516-6017
Student & Faculty Support Services	410-516-6749
Financial Aid	410-516-8028
146 Garland Hall	
Sheridan Libraries Milton S. Eisenhower Library	
Circulation	410-516-8370
University Registrar	410-516-8080
75 Garland Hall	
Student Accounts	410-516-8158
B31 Garland Hall	
Transcripts	410-516-8080
75 Garland Hall	
Office of International Services	410-516-1013
358 Garland Hall	

MONTGOMERY COUNTY CAMPUS

9601 Medical Center Drive
Rockville, MD 20850

Administrative Offices, Gilchrist Hall

Main Number	301-294-7162
Fax Number	301-315-7103
Student & Faculty Support Services	301-294-7162

Sheridan Libraries @ Montgomery

Montgomery County Library Resource Center	301-294-7030

GENERAL INFORMATION

Course Schedules	advanced.jhu.edu
Weather/Cancellation Information	410-516-7781
	800-548-9004
	www.jhu.edu/alert
Textbooks	800-325-3252
	mbsdirect.net

Krieger School of Arts and Sciences Administration and Faculty

ADMINISTRATION

Beverly Wendland .... James Barclay Knapp Dean
John Caron .... Associate Dean, Advanced Academic Programs
Brandon Boulter ...... Assist. Dean, Admissions, Marketing & Enrollment
Melinda Maris ....Director Instructional Resource Center
Laura Hannon..................................Executive Director, Student Affairs

FACULTY

Applied Economics

Laurence Ball .... Program Chair
Frank D. Weiss .... Program Director
Ahmed Mahmud .... Associate Director
Genevieve Briand .... Assistant Program Director

Biotechnology Studies

Bertrand Garcia-Moreno... Program Chair
Kristina Obom ....Program Director, Individualized Genomics and Health and Biotechnology; Center Director, Center for Biotechnology Education
Lynn Johnson Langer ...... Biotechnology Enterprise, Entrepreneurship and International Programs
Alexandra Tan .... Program Director, Health Science Intensive
Zuri Obado .... Academic Adviser, Health Science Intensive
Robert Lessick .... Program Director, Bioinformatics
Thomas Colonna .... Program Director, Food Safety Regulation and Regulatory Science
Meredith Safford .... Assistant Program Director, Biotechnology
Karen Wells .... Senior Lecturer, Biotechnology
Katherine Wellman ....Senior Lecturer and Coordinator, Biotechnology Enterprise
Beatrice Kondo .... Assistant Program Director, Biotechnology, Post Master's Certificate in Sequence Analysis and Genomics
Emil Wang .... Senior Lecturer and Coordinator, Regulatory Science
Jonathan Helfgott .... Senior Lecturer and Coordinator, Regulatory Science
Jamie Austin .... Lecturer and Coordinator, Biotechnology
Sherry Ogg ....Senior Lecturer
Thomas Koval ....Senior Lecturer

Communication

Brad Leithauser .... Interim Program Chair
Taylor Hahn.. Program Director

Environmental Programs

Thomas Haine .... Program Chair
Daniel Zachary.................................... Director, Energy Policy and Climate

Jerry Burgess .... Director, Environmental Sciences and Policy & GIS
Geri Miller ..... Program Coordinator, Geographic Information Systems
Jennifer da Rosa..Program Coordinator

Film & Media Studies

Douglas Mao .... Program Chair
Karen Yasinsky...Co-Interim Program Director
Matthew Porterfield.................................Co-Interim Program Director
Gabo Arora.. Assistant Director

Governmental Studies

Benjamin Ginsberg .... Program Chair
Kathy Wagner Hill ....Director of the Center for Advanced Governmental Studies
Dorothea Wolfson .... Program Director, Government
Mark Stout .. Program Director, Global Security Studies & Intelligence
Paul Weinstein Jr. .... Program Director, Public Management
Jennifer Bachner ....Program Director, Government Analytics
Sarah O'Byrne .... Program Coordinator, Center for Advanced Governmental Studies
Jack O'Connor ....Director of MS in Geospatial Intelligence
Karin Orr .... Program Coordinator, Nonprofit Management

Master of Liberal Arts

Pier M. Larson .... Program Chair
Laura DeSisto...Program Director
Tristan Cabello ....Assistant Director

Museum Studies, Cultural Heritage Management, Digital Curation

Rebecca M. Brown .... Program Chair
Phyllis Hecht .... Program Director, Museum Studies
Sarah Chicone ....Associate Director, Museum Studies & Cultural Heritage Management
Karen Wizevich .... Program Coordinator, Museum Studies
Judith Landau .... Internship Coordinator, Museum Studies
Joyce Ray .... Program Coordinator, Digital Curation

Research Administration

Benjamin Ginsberg .... Program Chair
Marianne Woods .... Program Director

Writing, Science Writing, & Teaching Writing

Brad Leithauser .... Program Chair
Karen Houppert .... Associate Director, Writing
Mark Farrington .... Program Director, Teaching Writing & Writing
Melissa Joyce .... Associate Director, Science Writing

Table of Contents

Graduate Degrees, Concentrations, Certificates, and Centers of Advanced Academic Programs

Enrollment Services

The Advanced Academic Programs Enrollment Services Office, consisting of the Admissions Office and the Registration Office, is located at the Johns Hopkins Bernstein/Offit Building, 1717 Massachusetts Ave. NW, Suite 101, Washington, DC 20036-2001.

The DC Admissions and Registration offices are open Monday through Thursday from 9 a.m. to 6 p.m. and Friday from 9 a.m. to 5 p.m. Students may also reach the office by email: Admissions: aapinfo@jhu.edu or
Registration: aapregistration@jhu.edu.

ADMISSIONS

Below are the general admissions criteria for all Advanced Academic Programs.

Admissions Requirements for Degree or Certificate Seeking Applicants

> **Bachelor's degree from a regionally accredited U.S. college or university**(or current enrollment in final semester of undergraduate studies). Applicants who receive their bachelor's degree in a country other than the U.S must have the U.S. equivalency of a bachelor's degree from a regionally accredited institution. AAP's Post-Masters' certificates also require the completion of a master degree or equivalent (example: Post-Master Certificate in Sequence Analysis and Genomics). https://www.ed.gov/accreditation

> **Minimum GPA of 3.0 on a 4.0 scale.** (Meeting the minimum GPA requirement does not guarantee admission, and may vary by program when combined with relevant work and industry experience. Admissions are subject to Program Director and Admissions Committee approval).

> AAP **online application**.

> Nonrefundable **application fee of $75**.

> **Unofficial transcripts from domestic colleges and universities** *(Check "Course-by-course credential evaluation" below for International transcripts)* must be uploaded to the online application as part of the application process and include name, school name, cumulative GPA (if applicable), and degree confirmation (if applicable). Transcripts withfewer than 12 credits are not required unless prerequisites are listed on them. *

> **Offer of Admissions** If offered admission, all required **official transcripts must be mailed or delivered in a sealed institutional envelope to the AAP D.C. office** *(1717 Massachusetts Ave. NW, Suite 101, Washington,*

*DC 20036-2001.)*or sent from the institution through a secured system, such as SCRIP-SAFE or Docufide prior to the beginning of the second term in which they enroll. Applicants are encouraged to submit their official transcripts prior to the start of their intended start term. Students admitted to a program, but missing official transcripts, will receive an offer for conditional admissions for one semester, or until review and acceptance of official transcripts. (See Section on "Conditional status").

> Course-by-course credential evaluation for all **course work completed outside of the U.S.** (See subsection titled "Collegiate-Level Course-Work Earned Outside of the U.S." for details).

> **Official TOEFL, IELTS or PTE score** report is required for international applicants who do not meet the criteria below. (See section titled "English as a Second Language" for details).

> **Additional materials** required by the chosen program as listed in that program's section of this catalog.

* ***The Health Science Intensive*** *concentration of the Master of Science in Biotechnology requires the* ***receipt of official copies of ALL transcripts*** *for every college and/or university attended prior to committee review. Unofficial copies will not be accepted to complete an application.*

Note: All application materials submitted to Advanced Academic Programs become the property of Johns Hopkins University and will not be returned to applicants under any circumstance. Any misrepresentation or omission of information included as part of an application will constitute cause for cancellation of the application prior to admission, reversal of acceptance, dismissal, or initiation of disciplinary action. In the event new information is provided/discovered after a final decision has been made, the Admissions Committee has the right to re-evaluate the application.

Graduate Records Examination

Most of AAP's programs do not require GRE scores. Please check your program's page to determine whether you must send in a GRE score. Do not send in the GRE unless it is required by the program or the committee. If it is required, applicants will need to have the scores sent to AAP. To send your GRE scores, please visit: ets.org/gre. Our institutional code is listed under the District of Columbia: 8747 (Johns Hopkins Adv.Acad.Programs).

Requirements for Special Student/ Non-Degree Applicants

A non-degree seeking or special student is one who would be eligible for admission as a degree or certificate candidate to the chosen program, but who is not interested in pursuing the credential. Admitted students with non-degree seeking/special status are:

> Permitted to enroll in courses for which they satisfy the prerequisites

> Permitted to take up to 4 courses

> Not qualified to receive financial aid

> Not eligible for graduation

> Required to reapply to become degree-seeking (Acceptance not guaranteed)

To be considered for **special student or non-degree admission** to any Advanced Academic Programs course, applicants must do the following:

> Submit acompleted online application

> Indicate non-degree seeking under the AAP Program tab intheapplication

> Upload unofficial transcripts (preferred) or copy of diploma
  - Submit official transcript for the highest degree attained

> Submit a statement of Purpose

> Submit a resume

> Submit a writing sample (Writing, Science Writing, and Teaching Writing applicants only)

> Submit two Recommendation Letters (See program admissions requirements for more information

Note: Applicants for Applied Economics and Communications must follow the same application process as degree-seeking students. Please refer to the program-specific web pages for complete admissions requirements.

International Applicants

Collegiate-Level Course Work Earned Outside of the U.S. Applicants who have earned their post-secondary degree(s) or course work in a country other than the United States are required to have a "course-by-course" credential evaluation with GPA performed by an outside evaluation service. Evaluations are waived only if the student received his/her undergraduate degree from a U.S. institution and the undergraduate course work taken internationally was transferred to that institution. However, the official transcript, in English, is still required of the international school. (*https://www.ed.gov/accreditation*)

Evaluations must be completed by a current National Association of Credential Evaluation Services member. The most up-to-date list of current members can be found at *http://www. naces.org/members.html.*

English as a Second Language
International applicants must demonstrate English proficiency by meeting at least one of the following requirements: admitted students with non-degree seeking/special status are:

> The applicant submits official TOEFL, IELTS, or PTE scores.

> The applicant holds a post-secondary degree from an accredited U.S. institution.

> English is both the official language and the only language of instruction in the applicant's native country.

> **TOEFL:** Official TOEFL score reports must be sent to us in the mail. Photocopies or electronic TOEFL score reports will not be accepted. AAP requires a minimum score of 600 on the paper test, 250 on the computer-based test, and 100 on the Internet-based test. However, scores requirements may vary by program. To send TOEFL scores, please visit: **ets.org/toefl**. Our institutional code is listed under the District of Columbia: 8747 (Johns Hopkins Adv.Acad. Programs).

> **IELTS:** Submit IELTS results through its website at: **ielts.org**. Applicants should contact the test center where they took the test directly and request that test scores be sent electronically using the IELTS system. Please be sure to select "Krieger School of Arts and Sciences Advanced Academic Programs." All IELTS test centers worldwide are able to send scores electronically. AAP requires a band score of 7.0. However, scores requirements may vary by program.

> **PTE:** Official PTE Academic results must be sent to us in the mail or electronically. Photocopies of PTE Academic score reports will not be accepted. Submit electronic PTE Academic results through their website at **vue.com/pte**. AAP requires a minimum score of 68. However, scores requirements may vary by program. Our institutional code is: Krieger School of Arts andSciences –Advanced Academic Programs.

Student Visas

Applicants seeking admission to enroll in onsite courses in the U.S., taking at least three courses per semester, may request certification for an F-1 visa by indicating "yes" for the "Do you plan toinitiate the F-1/J-1 visa process through Johns Hopkins University?" question on their admissions application.

AAP international students on F-1 visas usually begin their program in the fall or spring semester. In order to maintain status on an F-1 visa, students in AAP must be enrolled in a minimum of three courses per semester, one of which can be an online course. Students must complete their certification process with the Office of International Services **www.ois. jhu.edu/index.html**. For more information, international applicants should refer to the International Applicants webpage: **advanced.jhu.edu/students/ international-students.**

Admissions Process

Applicants may apply throughout the year and begin study during any of the three semesters (summer, fall, spring). While applications are accepted year-round for all programs, all applicants are strongly encouraged to apply and complete the application process four to six weeks before the start of the desired semester. International applicants seeking a visa should submit all application materials three months prior to the start

of the intended semester of study. However, the Admissions Office requires no deadlines by which an applicant needs to submit an application.

Applications are accepted up to one year in advance of the intended semester of study. An incomplete application (including application fee) is valid for one year from the date submitted. Applicants who fail to submit required supporting materials within this period and who wish to be considered for admission are required to submit a new application, fee, and all required supporting documents.

Review Process

Once the Admissions Office has received all required materials, the completed application is sent to the Admissions Committee. The Admissions Committee for the chosen program assesses the application and its supporting documents. All materials must be received prior to the Admissions Committee review. Academic background; personal, professional, and field-related experience and achievements; and any program-specific criteria are all considered in this review. Review times for completed applications range from approximately three to four weeks. If a decision is not reached by the Admissions Committee in time for the upcoming semester, the program will automatically consider the applicant for the following semester. The **Admissions Committee reserves the right to require that more than the minimum standards** be met for admission to any academic program and may require additional materials of the applicant, if deemed necessary to make an admission decision.

Offer of Admission

Degree/Certificate Candidates
Qualified applicants are admitted as degree or certificate candidates by the committee after the Admissions Committee for that program reviews the completed application and determines eligibility. A degree or certificate candidate may also be admitted conditionally, if Admissions determines eligibility. (See Conditional Status below.)

Provisional Student
Provisional students are admitted to this status because, in the view of the Admissions Committee, they do not fulfill academic requirements for admission as a degree candidate at the time of the application. A provisional student may also be admitted conditionally, if Admissions determines eligibility. (See Conditional Status below.)

Provisional students are required to take specific prerequisite courses and/or program courses, identified in their admissions letter (additional criteria may be listed). Those with provisional status are held to grading criteria stricter than those required of degree candidates. **Provisional students must receive a grade of B or better** (A-or better for the Writing, Science Writing, and Teaching Writing programs) **in all courses taken while under provisional status**. Failure to meet the provisional grade requirement will result in dismissal from the program. When the provision is met, the student's status will be changed from provisional to degree candidate.

Note: Provisional Students may not qualify for financial aid. For eligibility for provisional students—contact the Office of Financial Aid for specifics. https://finaid.jhu.edu/contact/

Special Student/Nondegree

A special student is one who may be eligible for admission as a degree or certificate candidate to the chosen program but is not interested in pursuing the credential. (See Conditional Status below.)

Special students are permitted to enroll in any courses for which they satisfy the stated prerequisites (MA in Writing students must receive program approval for all course registration). As long as special students do not interrupt their studies for more than one year and remain in good academic standing, they can take up to four courses under this status. A special student who does not remain in good academic standing may be dismissed from AAP. If more than one year lapses between registrations, special students are required to reapply. Special students are welcome to apply to be accepted as a degree candidate at any time during their studies. The program's Admissions Committee will determine if any courses completed at the time of application will count toward the degree. Program requirements and time limitations in effect when applying will guide the admission decision.

Conditional Student
The conditional status is applied to any admitted student, who at the time of admission, is an undergraduate student in the last semester of undergraduate studies (Type A) and/or has not submitted all required official transcripts (Type B).

Type A -These applicants can be admitted with the conditions that they successfully complete their undergraduate studies and submit an official transcript or evaluation verifying degree conferral prior to registering for their second semester.

Type B –These applicants can be admitted with the conditions that they successfully submit their official transcripts prior to registering for their second semester.

Once the condition is met, final transcript and/or official transcripts (or evaluation) are received, the conditional status will be removed. Note: Conditional students are not eligible to receive financial aid nor permitted to register beyond the term forwhich they have been admitted. http://advanced.jhu.edu/prospective-students/faq/

Additional Considerations with Admissions

Accelerated Undergraduate Students
In some programs (Applied Economics, Biotechnology, Environmental Sciences and Policy, Global Security Studies, Government, and Public Management), current Johns Hopkins undergraduates may be allowed to accelerate their time to complete an AAP master's degree. Applied Economics, Biotechnology and Government consider academically strong and eligible candidates from JHU's undergraduate programs for the accelerated option. The Environmental Sciences and Policy program allows eligible, upper-level students from the Global Environmental Change and Sustainability major in JHU's

Department of Earth and Planetary Sciences to begin taking limited course work in the MS in Environmental Sciences and Policy program prior to the completion of their undergraduate degree. Please contact the appropriate program director/adviser for further details.

Waived and Replaced Classes

In some programs, the Admissions Committee may allow a core or prerequisite course to be waived based on previously completed coursework. Supporting documentation, such as copies of syllabi and course descriptions, may be requested by the committee to assist in making a decision. All waived courses must be replaced by electives in order to satisfy the required number of courses to complete the degree.

Advanced Standing

Advanced Standing allows consideration for seasoned professionals with accomplishments in a field or those who have graduate-level coursework from an accredited college or university to be exempt from taking up to two courses toward degree completion. This policy applies to the programs listed below only, and the request for consideration must be made at the time of application. Applicants approved for advanced standing will receive official notification in their acceptance letter. More information regarding specific qualifications and application requirements for advanced standing can be found on the respective admissions requirements webpages for each program.

Programs that will consider awarding advanced standing in 2018-2019 include Applied Economics, Communication, Geographic Information Systems, Government, Government Analytics, Public Management, Global Security Studies, Master of Liberal Arts, Museum Studies, Regulatory Science, Science Writing, Teaching Writing, and Writing.

Transfer Credits

Graduate courses taken at any institution other than the Johns Hopkins University are not accepted as transfer credits, and they cannot count toward graduate degree requirements in Advanced Academic Programs (See –Advanced Standing).

Acceptance of Admission

Newly accepted students are directed to an Enrollment Decision form, available through the electronic version of their official admissions decision letter. Starting from the point of enrollment, the first course counted toward fulfillment of the master's degree or certificate program, the student has a maximum of five years to complete all course work. However, students must maintain continuous enrollment throughout the duration of time spent in the degree or certificate (see Continuous Enrollment section under Registration). Applicants can pursue only one program at a time, unless they are applying to an approved dual or combined program in AAP.

Deferral of Admission

Admitted students may defer the start of their studies for up to one year from the term of admission (example: a fall admit can defer until next fall; a spring admit can defer until next spring). Applicants need to complete the Enrollment Decision form, which is available through the electronic version of their official admissions decision letter. If an admitted student wishes to enroll beyond the year of admission, he/she will need to reapply to the program by submitting a new application, application fee,and any additional supporting documents. A student who reapplies must satisfy admission and program requirements in effect at the time of reapplication.

Denial of Admission

All admission decisions are final. The Admissions Office cannot discuss the committee decision. In the case of denied admission, applicants must take at least one year to attempt to improve their qualifications before reapplying to the same degree or certificate program. Improvements can include but are not limited to taking the GRE, submitting a new writing sample, or taking additional courses in a related field at a regionally accredited college or university. Please note that an improvement to the application or reapplication does not guarantee admission into the program. The applicant will need to reapply to the program by submitting a new application, application fee, and any additional supporting documents. All application material is shredded immediately following denial of admissions.

New Student Orientation

Once admitted to Advanced Academic Programs, all students are encouraged to complete a Web-based new student orientation at http://advanced.jhu.edu/current-students/new-student-orientation/. This orientation provides guidance for all AAP students, regardless of modality, to understand administrative processes at Advanced Academic Programs and to learn about available resources. New student orientation is separate from "Blackboard orientation," which is available to all student enrolled in online courses and required by certain academic programsTheBlackboardorientation provides specific information regarding the use of Blackboard and enrollment in online courses.

Admission to Other Divisions or Programs of the University

An admitted student in Advanced Academic Programs who wishes to transfer to another school in the university or to a full-time program in the School of Arts and Sciences must apply to the appropriate school or the School of Arts and Sciences' full-time programs. Admission to Advanced Academic Programs establishes no claim or priority for admission to other divisions or programs of the university.

Dual of Combined Program Admissions

A limited grouping of programs is considered dual or combined. Programs combined with those from other Johns Hopkins Schools will have separate admissions requirements and will require a different application, fee, etc. Please see each program's admissions requirements for more information. For a comprehensive list of current dual or combined programs, see **advanced.jhu.edu/academics/dual-degree-programs/.**

REGISTRATION

The Student Information System (SIS) provides students access to financial aid, billing, and enrollment records in one location with the same interface. Strong authentication security assures confidential access to information by students using any popular Web browser and their JHED login ID and password.

New and active students can register for courses online using SIS at SIS.jhu.edu. Students can also register using the online add/drop form or the paper registration form. The form can be found at advanced.jhu.edu/current-students/forms. If you complete the paper form, please fax to 202-452-1970 or email a PDF file to aapregistration@jhu.edu.

A completed registration requires payment or verification of how payment is to be made. Students who have not completed financial aid forms or have unpaid bills from a previous semester/term will have a "Hold" in the registration process and will not be allowed to register until Student Accounts processes payment and removes the "Hold." Several business days are required to complete these processes.

Students are required to have fulfilled the appropriate prerequisites for each course before registering. It is the student's responsibility to make sure the requirements are met and appropriate grades are in place in order to register and advance through their academic program. If the student has any questions, they should consult their adviser. Once a registration is received, allow one to three working days before checking your confirmation online at SIS.jhu.edu.

Ways to Register

1. Online at *sis.jhu.edu*
2. Online add/drop form
3. Fax paper registration form to: 202-452-1970
4. Hand-deliver paper registration form to AAP at any of the three locations
5. Email completed registration form to aapregistration@jhu.edu

Each semester the course schedule is posted at a*dvanced.jhu.edu/ registration*. The course schedule is available only online, and students are encouraged to enroll early for best selection.

Proof of Immunization Prior to First Registration

The District of Columbia requires all students under the age of 26 to submit an immunization form. The form can be found at *advanced.jhu.edu/current-students/forms*. This requirement may be waived for students if they meet both of the following criteria:

1. The student is in a fully online program that does not have optional or mandated residency requirements, classes, or activities that may be taken in D.C.

2. The student does not currently live in D.C., nor does he/she plan to move to D.C., or any contiguous state, including Maryland, Virginia, Delaware, Pennsylvania, or West Virginia. If he/she moves to D.C. or one of the aforementioned states, it is the student's responsibility to complete the immunization form and conform to the immunization requirement prior to the move. This form can be found at: *advanced.jhu.edu/current-students/forms*.

Late Registration

Registration is open for approximately two months prior to the start of a semester/term. Late registration starts the day after registration ends and requires a $150 fee for returning students. Check the Academic and Registration Calendar for late registration deadlines. Students registering late should check the refund schedule.

Adding/Dropping/Changing to Audit

Students wishing to add, drop, or audit a course can use the online add/drop form or the paper add/drop form. Both can be found on *advanced.jhu.edu/current-students/forms*. Students on financial aid should consult the Office of Financial Aid before making these types of changes. For those using the paper form, please submit to the fax or email listed on the form. Deadlines for completing this procedure are featured in the academic calendar.

Faculty members cannot initiate, complete, or process add/ drop changes. Students who register but never attend, or stop attending a course but do not officially drop the course will be given an F grade for the course and will not be given a refund. Students who register for a course but never attend or stop attending, and later drop, are subject to the refund schedule at the time of their drop. All registered students are subject to the refund schedule, regardless of attendance. Requests to drop a registration must be received by email or fax to be processed for the appropriate refund. Refunds will be based on the date the request to drop is received by the Advanced Academic Programs Registration Office. See the AAP refund schedule posted for each semester on the web at *advanced.jhu.edu/current-students/refund-schedule*.

Course Enrollment Limits

All AAP courses have enrollment limits. It is not always possible to offer additional sections of oversubscribed courses. A waiting list option is available in SIS during the registration period for most courses with full enrollment. Enrollment is not guaranteed.

Completion of Prerequisites

The prerequisites for each course can be found in the program sections of this catalog. It is the student's responsibility to check the prerequisites for each course and register appropriately. A student may be administratively dropped from a course if he/she has not met the stated prerequisite. Students are encouraged to consult with their academic advisers.

Course Load

Students who are working full time are advised that two courses per semester is a challenging academic load. Students who elect to register for more than two courses should be working less than full time to successfully manage three or more courses per semester. Students expecting to take three or more courses (except international students seeking an F-1 visa who are required to be in a full-time classification) should consult their program director/adviser prior to registration to ensure their course load is appropriate for their individual case. Students taking two courses (six to eight credits) per semester are considered as half-time enrolled. The full-time course load for a graduate student is three to four courses (nine to twelve credit hours) per semester.

Some programs require permission from the academic adviser before enrolling in three or more courses. Students have five years to complete their academic program from the start of their first graduate-level course within their academic program, and it is highly recommended that students take the appropriate time to do well in all courses.

Auditing a Course

Students may register as auditors. Auditors receive no credit for the course, and a grade of "AU" is placed on their official transcript. There is no reduction of fees or tuition when auditing a course. Although regular attendance is expected of auditors, they are exempt from quizzes, examinations, and other assigned work. Students who take courses for credit are given enrollment priority over auditors. Students who are enrolled for credit but wish to become auditors during the active semester may request the necessary change by filling out an online add/drop form. Please refer to the Academic and Registration Calendar for the deadline by which to request to audit a course. Auditors cannot change their status to credit seeking after the start of the semester.

Change of Program

Students who wish to change to another degree program within Advanced Academic Programs must fill out a change of program (COP) request form at *advanced.jhu.edu/current-students/forms*. Documents required by the new program but not submitted previously must be included with the COP form. Students are not automatically admitted to a new program; their request is reviewed by the appropriate Admissions Committee according to the stipulations of the new program. There is no charge for the first change of program, but a $75 charge is administered to subsequent COP requests. Tuition rates in AAP vary with each academic discipline/program; therefore, changing programs may result in different tuition rates. COP applications may be submitted at any time, but if approved, the student's program information will not be updated until the end of the current semester. Please note: Taking courses outside the program to which you are admitted does not guarantee admission to another program. Average processing times for COP range from six to eight weeks from the date received.

Tuition Payment

In order to complete your registration, a verification of payment method of all tuition and fees is required for each semester at the time of registration. Students will not be not dropped from their courses if payments are not made in full. Subsequently, students remain financially responsible for the tuition and fees associated with each course.

AAP students can make payments by check, credit card, employer contract (employer authorization), tuition remission, or financial aid. In all cases, students are not permitted to register if there is a balance due on their account from a previous semester.

Employer Contract

Students whose tuition is paid by employer billing authorization (employer contract) should begin processing requests with their employers well before the start of registration, and send a copy of the employer contract by fax or email to the AAP Registration Office at 202-452-1970 or aapregistration@jhu.edu. Students using an employer contract are financially responsible for any tuition and fees not paid by the employer.

Employer Reimbursement

Students who are requesting employer tuition reimbursement must pay for the course upon receipt of a bill (through SIS) from the Student Accounts Office with their own funds and request reimbursement from the employer at the appropriate time.

Financial Aid

Students who plan to request financial aid to cover their tuition should submit the appropriate paperwork in ample time prior to registering. Go to *https://finaid.jhu.edu/graduate-aid/* or email aapfinaid@jhu.edu. Students must take a minimum of two courses to be eligible for federal financial aid. Students may also look at alternative loans for a single course registration. The JHU Policy for Satisfactory Academic Progress requires all students to advancein their program with appropriate grades and within the appropriate timeline to continue receiving financial aid. The financial aid code for JHU/AAP is E00473. See full Financial Aid section in the catalog for details regarding satisfactory academic progress required for compliance for financial aid.

JHU Tuition Remission

Students receiving tuition remission benefits from Johns Hopkins University should read the contract carefully. Call the Center for Training and Education at 443-997-6800 to address any questions. Please note that students are financially responsible for dropped courses paid for with tuition remission and any associated fees, if applicable. See JHU's benefits website for specific information regarding tuition remission: *benefits.jhu.edu/tuition/remission.cfm*

Registering for Courses in Other JHU Programs

With adviser approval, AAP students may take up to two comparable courses and apply these courses from other JHU programs toward their master's degree or certificate.

Interprogram Courses

AAP students wishing to count a course outside their program toward their degree need to obtain adviser permission, unless the course is cross-listed in the course schedule (*advanced.jhu.edu/ registration*) or otherwise listed as part of shared concentrations. To obtain adviser approval, students must forward to their adviser a written request that includes documentation of course description and any other information that may be helpful in assessing the course's applicability to a student's program. The student's adviser or academic program director then determines if the requested course is appropriate and whether the student is eligible to take it.

Interdivisional Registration for AAP Students

AAP students who wish to take a course at another Johns Hopkins school/division must submit a request to the AAP Registration Office using the online add/drop form or a paper add/drop form. To ensure that there is time for review and approval from other divisions within Johns Hopkins, the request must be received in the AAP Registration Office no later than two weeks before the first day of class. Adviser approval is required to allow non-AAP courses to count toward the AAP degree (excluding curricula that require courses from other JHUdivisions). To obtain adviser approval, students must forward to their adviser a written request that includes documentation of the course description, number of credits, and any other information that may be helpful in assessing the course's applicability to a student's program. The student's adviser then determines if the requested course is appropriate and whether the student is eligible to take it.

Interdivisional Registration for Non-AAP Students

Non-AAP students in other divisions of Johns Hopkins may take up to two courses in AAP, if permitted by their home division, and with permission of the AAP program director or Associate Dean. Non-AAP students must complete the necessary paperwork and/or procedures required by their home school/division. Interdivisional requests are processed by the AAP Registration Office during late registration on a space-available basis, to allow AAP students first eligibility into courses. Interdivisional registration is not guaranteed. School of Medicine students should contact the AAP registration manager for assistance with interdivisional registration.

International and Off-Site Courses

Some AAP programs may offer courses at an international location or at a site that is not on the Johns Hopkins University premises. These courses may have different registration deadline requirements and refund schedules as well as additional registration paperwork and fees. Students should check the website and SIS messaging carefully for these differences.

Leave of Absence

Students who anticipate that they will not enroll in classes for a period of one semester or more but believe that they will resume their studies must complete a request for leave of absence form at *advanced.jhu.edu/current-students/forms*. In case of medical leave or leave due to military service, students must provide relevant documentation, which may include service orders or medical

documentation, to aapregistration@jhu.edu. Note, supporting medical documentation should be limited to a letter from the appropriate medical professional, detailing the dates of care and the fitness for the student to attend class during that time. The AAP registrar, in consultation with the program director when needed, will consider the request, and the student will be informed in writing of the decision. Students who are granted a leave of absence must contact AAP's Registration Office prior to resuming their studies at the end of the allotted leave time. If granted an LOA, students automatically receive an extension for the same period of time. All other criteria listed in the Time Limitation section remain in place. Students are limited to two years for an LOA, taken at one time or in combination during the academic career with AAP. Please note, a leave of absence may not be granted to a student who is currently in thesis continuation.

Inactive Status

With the exception of those on a leave of absence, students who do not enroll for two semesters will lose their active status. The student is considered to have withdrawn from the program. To resume taking courses in Advanced Academic Programs, students must contact the AAP Registration Office and/or reapply by submitting a new application form, a new application fee, and any new application materials required. Reapplying students are subject to the admissions and program requirements in effect at the time of the new application. Acceptance for inactive students is not guaranteed, and courses taken prior to the interruption of studies may not count toward degree requirements. Time limitation still applies; see the Time Limitation policy.

GRADUATION REQUIREMENTS

Application for Graduation

Students planning to complete their degree requirements at the end of the semester for which they are registering must notify the AAP Registration Office of their intentions by completing the online graduation application form found in SIS. This form should be completed when registering for the last course(s) needed to complete the degree; it initiates the graduation review process that students must undergo to be cleared for graduation. The Registrar's Office will periodically correspond with the student using the JHU email account address provided to all students in order to provide important information about administrative details, events, and deadlines. A paid $100 graduation fee is required at the time of application for graduation. This fee must be paid for every degree earned.

The application for graduation form is valid for only one semester. If students do not complete their degree requirements during the semester expected, they must resubmit the application form while registering for the next semester. Students who paid the $100 graduation fee (a one-time payment) are not required to submit another graduation fee.

Completion of Degree Requirements

The Johns Hopkins University confers degrees three times a year (August, December, and May) to all students who have

completed requirements during the spring, fall, or summer semesters. The university wide commencement ceremony and the master's degree ceremony take place once a year in May. Diplomas are mailed to graduates at the address given on the graduateapplication found online in SIS. The conferral date is the date that will appear on a graduating student's transcript.

ALUMNI BENEFITS

Advanced Academic Programs alumni are always welcome to register for courses in AAP. Having alumni in courses boosts the academic rigor, knowledge, and experience in the classroom. To promote this interaction and to provide opportunities for alumni to take courses they missed or that will help them remain current in their fields, AAP offers the Alumni Tuition Benefit Program.

An alumni registration form is posted on the website for alumni. Interested alumni will select either a full-credit, full-tuition option or a noncredit, reduced-cost alumni benefit option. They will be required to complete the alumni registration form so we have updated information, but they will not be required to submit a resume, a writing sample, letters of recommendation, transcripts, or any other usual application materials.

Full-Tuition Option (with credit): Alumni who have applied through the method noted above will be able to register for an approved course as a special student. Their registration will be processed in a timely manner during regular registration or late registration. They will be in competition for seats along with current students (first come, first served). The course will appear with a grade on the transcript.

Space-Available Tuition Benefit (noncredit, audit): Alumni interested in this option will be eligible for a 50 percent reduction in tuition in any course for which they qualify, on a space-available system, in a participating program. The course will appear with an "AU," to indicate the audit status, on the transcript.

Qualification Required: In all cases above, alumni can enroll only in courses for which they qualify. A program may elect to limit the courses open to alumni or may reserve a certain number of slots for current students.

ACADEMIC REGULATIONS FOR ONLINE COURSES

Online Orientation for Online Students

All students taking their first fully online AAP course should participate in the Blackboard orientation course before the term starts. Students will learn how to navigate, collaborate, and communicate in a fully online course. The orientation provides valuable hands-on experience with the course management system. Important information regarding the technical requirements and support resources available will be given in the orientation. Students should expect to devote one to four hours to the orientation, but it may be spread out over several

days. Information about where and how to take the orientation course will be provided to students by email. **Please note, completion of the online orientation course is required by the following programs: Environmental Sciences and Policy, Energy Policy and Climate, Geographic Information Systems, Museum Studies, Writing, Teaching Writing, Science Writing.**

Returning students are welcome to participate and to review techniques and tools. All students are encouraged to revisit the orientation to test for access to online library resources in the Library Module.

Online Library Access

AAP provides online library resources to all students. New online students are required to obtain access as part of the Blackboard orientation and are supported in this process. The JHED id and password are needed to access most resources. For a list of resources, visit the library homepage at *library.jhu.edu*.

Online Class Structure

AAP online courses are asynchronous, though they may have some optional synchronous components. Students access course materials and discussions at individually desired times. Students share learning actively through the Web-based course site with readings, assignments, group activities, and threaded discussions as guided by their instructor. Course format and structure promote active and interactive learning.

Online Bookstore

AAP has partnered with an online bookstore, MBS Direct, to service online students and students enrolled in on-site courses. MBS Direct offers competitive pricing, new and used books, and buybacks from its large distribution center. Students can access the bookstore at *mbsdirect.net* approximately four weeks prior to the start of each semester to purchase their texts. Questions about MBS Direct or its services can be directed to the customer service center at 800-325-3252 or vb@mbsDirect.net.

Residency Requirement

Some programs are offered fully online, and some have on-ground courses. Still others have an on-ground residency requirement in addition to courses offered online. Each program has specific requirements, and it is the student's responsibility to check with his/her program adviser to ascertain the requirements pertaining to his/her program.

AAP Online Course Access Policy

According to AAP policy, students have one full semester after the end of the semester in which they take an online course to retrieve their own student-generated work and to access course materials. The University's policy on the use of Intellectual Property applies in all cases where students access online classes after a semester has already ended. Additionally, individual instructors or University administration have the option to make courses available for longer or shorter periods of time.

GRADING SYSTEM

Scale

The grading scale for students enrolled for credit is A+, A, A-, B+, B, B-, C, and F. An Incomplete (I) grade is assigned by the instructor who has given the student permission to delay completion of specific course for a justifiable reason for a specific amount of time. W (official withdrawal) and AU (audit) are requested by the student and cannot be assigned by the instructor. A grade of F indicates the student's failure to complete or comprehend the course work and therefore does not count toward the courses needed for completion of the degree. F and C grades are not removed from a student's transcript even if a course is repeated.

Students are graded under the following system:

Grading System

Grade	Meaning	Equivalent
A+		
A	Excellent	4.00
A-		3.70
B+		3.30
B	Satisfactory	3.00
B-		2.70
C		2.00
F	Failure	0.00
P	Pass	
I	Incomplete	
W	Withdrawal	

Requirements

If a degree candidate receives a grade of C or below in a core course, the student must repeat that course. Even if the course is repeated, the original grade will remain on the student's transcript, and the student may not receive another grade of C or below. For specific guidelines on what courses are considered core and/or required, please review the curriculum requirements listed for your program in this catalog or on the AAP website.

Special students—those who satisfy all requirements for admission to degree candidacy but who choose not to seek a degree—are held to the same performance standards as degree candidates. Provisional students cannot continue in a program if they earn a grade of B-or below (B+ or below for the Writing or Science Writing programs) in any course taken while they are in provisional admissions status.

Probation and Dismissal

Degree candidates who receive a grade of C or below are on academic probation. See "Requirements" section above for details and clarification regarding grade requirements for degree, special, and provisional students. When a course is repeated, both the original grade and repeated grade appear on the transcript. The degree candidate receives credit only once for the course; however, the original grade of C (or below) places the student on probation. If a degree candidate receives a grade of C in an elective course, the course need not be repeated, and the course can be counted toward degree requirements. Degree candidates who receive a second C or below in either a repeated core course or any course taken in the program will be dismissed from the program. Special students are held to the same performance standards as degree candidates. Provisional students who receive a grade of B-or below (B+ or below for the Writing or Science Writing programs) in any course cannot repeat the course and are dismissed from the program.

Students dismissed may apply to another program in Advanced Academic Programs immediately. Admission is not guaranteed. A dismissed student must wait one year from the date of dismissal before reapplying for admission to the program in which he/she has been dismissed. Readmission is not guaranteed.

Incomplete

A designation of I (incomplete) is assigned when a student fails to complete a course on time for valid reasons as determined by the instructor. A student requests a status of incomplete from the instructor and submits a required form. The request for/resolution of incomplete form can be found at *advanced.jhu.edu/current-students/policies/grading-policy*. The student notes the reasons for requesting the incomplete and details the plans for resolving it. The student and instructor sign the form. Instructors send the completed form to the AAP registration manager.

An incomplete is granted at the instructor's discretion, and conditions for absolving it are established by the instructor. It is the student's responsibility to submit all work at the agreed-upon time. If a student does not complete the incomplete course, the I will convert to an F grade 60 days after the beginning of the following semester in which the student enrolled for that course. Under extraordinary circumstances, a student may petition the instructor of the course in which the student is enrolled for an extension of the period normally allowed for removal of the incomplete grade. Incomplete extensions are permissible one time for one semester.

Withdrawal

The W (withdrawal) grade signifies an official withdrawal from a course that has been approved by the Advanced Academic Programs Registration Office. The student initiates the withdrawal by completing an online add/drop form or sending in a paper add/drop form. The add/drop form can be found at *advanced.jhu.edu/current-students/forms*. A W cannot be assigned by the instructor. Students who register for a course but never attend or stop attending, and later drop, are subject to the refund schedule at the time of their drop. All registered students are subject to the refund schedule, regardless of attendance. For further information, see *advanced.jhu.edu/ registration*, and then select Step 4: Paying for Your Courses.

Academic Standing and Conduct

The university reserves the right to dismiss at any time a student whose academic standing or general conduct is deemed unsatisfactory.

Academic Integrity

Graduate students at Johns Hopkins are expected to understand the ethical standards of the university, hold the highest standard of integrity for their work, and avoid academic dishonesty in all forms. Ignorance of ethical rules is no excuse for cheating. It is the further responsibility of every student to report to the instructor or their program's director any suspected violations of academic ethics by peers. Enforcement of our code of conduct is a shared responsibility and should not depend on the university alone. We all celebrate the rigor of a Johns Hopkins education, but that rigor loses its meaning if students cheat. Students who violate this code of conduct face a range of penalties, including failure of a course, permanent university transcript notation of an ethics violation, loss of a degree, or expulsion from the university. Please see the Student Code of Conduct for procedures and responsibilities. This pamphlet is available at all three Advanced Academic Programs sites and is available online at *advanced.jhu.edu/current-students/policies/code-of-conduct*. At publication time for this catalog, Advanced Academic Programs was considering changes to the Student Code of Conduct. The revised code will be announced and posted at the link above.

Ethics violations of any kind are taken seriously and may result in dismissal from AAP's programs. The best way you can keep yourself from committing an act of plagiarism is to be properly informed. At a minimum, please remember that any words taken verbatim from a source must be cited and contained within quotation marks. Even if you have paraphrased an idea from a source, you must provide the appropriate citations. Ignorance of these principles will not be an acceptable excuse for violation of the policy. For further information and assistance in determining when and how to properly cite your sources, please link to an excellent resource provided by the Milton S. Eisenhower Library of Johns Hopkins University at *guides.library.jhu.edu/citing*. An equally useful resource with clear and specific definitions of plagiarism can be found at *turnitin.com*.

Grade Disputes

If a student does not agree with the grade an instructor assigned in a given course, the student must contact the instructor first to attempt to resolve the disputed grade. If the instructor and the student are unable to reach an agreement, the student may present his/her argument to the program committee in writing with supporting facts and documents. Facts considered during a grade dispute include but are not limited to: (1) whether there was anarithmetic error; (2) whether the faculty member applied consistent standards in assigning grades; and (3) whether the grade was a result of a faculty member's failure to follow the syllabus for assigning grades.

The Program Committee may solicit the instructor's evaluation in writing, or members may ask the instructor and/or the

student to appear before them. The committee then determines whether the disputed grade should be changed or retained and promptly informs the student and the instructor of its decision. The committee's decision is final. Limited appeals to the Associate Dean are possible only regarding the Grade Dispute process, procedures or if new evidence is made available after the Program Committee meeting. This appeal must be made within 10 days of the receipt of the Program Committee's decision. Grade appeals, including all supporting documentation, must be submitted to the program committee via aapregistration@jhu.edu no later than the last day of classes for the following semester. A graduating student has three months after graduation to submit a grade appeal for any course taken during his/her final term.

Time Limitation

Students must complete all academic work in a master's degree or certificate program within five years, calculated from the start of the first course that counts toward the degree (including time spent on continuous enrollment). Continuous enrollment does not stop or extend the time limitation requirement. This time limit includes any courses taken at another Johns Hopkins school/division that have been approved to count toward the degree or certificate.

If necessary, students may request from their program committee an extension of time to complete their program beyond the five-year limitation. A degree completion extension request form is available at *advanced.jhu.edu/current-students/ forms*.

If an extension is granted, it will be communicated in a letter, and the five-year limit increased by the time included in the extension. All other criteria apply, including continuous enrollment should students fail to enroll in courses without approved leaves. An extension may be granted for a semester up to a full year, and in rare circumstances for two years.

ACADEMIC STRUCTURE

Advisers

Each student accepted into a degree program or certificate is assigned an academic adviser, who is available for consultation regarding the student's program of study. A student adviser's name and email address are provided on the admissions decision letter. Advising is available year-round. Consultation takes place by phone, email, Internet, or in person by appointment. Please see the program sections in this catalog for specific program adviser information.

Courses in all programs are offered in the summer, fall, and spring terms. The summer term permits three formats: two full semesters (14 or 12 weeks) and two accelerated eight week formats. The fall and spring terms have one full semester (15 weeks) and two accelerated eight week formats for regular classes depending on the program. The spring semester includes a three-week intersession for courses offered at the beginning of January to the end of the month. Similarly, the summer term includes a May intensive schedule available in select programs.

These intensive semester formats allow students to complete special-interest courses, such as travel courses, as well as regular courses offered in compressed format. See the AAP Academic Calendar and Registration periods posted for the academic year on the Web at *advanced.jhu.edu/current-students/academic-calendar*.

Course Numbering System

Advanced Academic Programs courses are numbered in the following form:

420.601.51 (Example)

> 420 indicates the program—in this case, Environmental Sciences and Policy;

> 601 indicates the course number—in this example, Geological Foundations of Environmental Science

> 51 indicates the section number and location where the course is offered—i.e., sections 01 to 09 are offered at the Homewood campus in Baltimore; sections 51 to 59 are offered at the Washington, DC Center; sections 71 to 79 are offered at the Montgomery County Campus in Rockville; and sections 81 to 89 are offered online. Section 91/92 indicates an international or off-site course.

Course Credit

Effective summer 2016, all Advanced Academic Programs graduate-level courses are assigned credits. In addition, graduate-level students may receive letter grades (A, B, etc.) or P (passing). Prior to May 2016, credit hours were not assigned to graduate-level courses unless taken by an undergraduate. No GPA is calculated. A transcript guide is available upon request that features grade points needed to calculate grade-point averages. The AAP registration office will not calculate grade-point averages for students or third parties.

Course Cancellations

The university reserves the right, in its sole discretion, to change instructors or cancel courses with insufficient enrollment.

Enrollment/Degree Verification

Enrollment verification provides proof of enrollment for a student's financial lender, insurance company, sponsor, etc. Enrollment verifications can be obtained through SIS. Please expand the registration menu and choose the last option listed on the menu. Verifications may also be placed through the National Student Clearinghouse. If you have any questions regarding enrollment verifications, please contact the Homewood Registrar's office by phone at 410-516-8080 or ASENverify@jhu.edu.

Transcripts

The transcript is part of the student's permanent record at the university. No grade may be changed except to correct an error or to replace an incomplete with a grade. Active students can request a transcript through SIS. Please expand the registration menu and choose the last option to request a transcript. Graduates and former students, please go to the following link to request a transcript: *web.jhu.edu/registrar/transcripts*. If you need

assistance, please contact the Homewood Registrar's Office by phone at 410-516-8080, or visit *jhu.edu/registrar*.

Second Master's Degree

After receiving a master's degree from Advanced Academic Programs, students may continue in a second program if prerequisites for that program are fulfilled. To receive a second master's degree from Advanced Academic Programs, all course requirements for the second program must be satisfied. The student may count up to three courses taken as part of the first degree toward requirements of the second. However, the relevant program committee must approve the course(s) as appropriate to the plan of study, and the course(s) must satisfy the requirements of the second degree. The course(s) also must fall within the five-year limit for the second degree (i.e., the second degree must be completed within five years, counting from the beginning of the first course accepted toward the second degree).

To apply for a second master's degree, the student must submit a new Advanced Academic Programs application form, an application fee (waived if previous master's degree was earned within the past year), and any additional admissions materials required by the second degree program.

Applying Courses From a Certificate Toward a Degree in Advanced Academic Programs

Programs within AAP may allow courses earned and applied toward a graduate certificate to be applied toward a graduate degree. In most instances, up to three courses may be applied from an AAP certificate program toward a degree. Contact the program director of the respective program for details, conditions, and approval.

TUITION AND FEES

Full course tuition is due upon receipt of a bill (through SIS) from the Student Accounts Office. All other fees are payable as noted below. All fees are nonrefundable. Tuition is refundable only according to the refund schedule. If a student registers for a course but does not attend OR officially drops/withdraws from a class, the student remains financially responsible for the tuition and fees associated with the course.

Application Fee

The application fee is $75 for all programs. The application fee must be submitted with the application and is not refundable under any circumstances. Johns Hopkins University alumni from any academic program will have their application fee waived. Please contact the Admissions Office to waive your fee.

Tuition

All tuition in the Advanced Academic Programs is determined according to academic program of study and varies across AAP disciplines. Students will be charged tuition based upon individual courses within the program of study in which students have been admitted. If courses are taken outside of

a student's program of study, the student will pay the tuition rate in effect for the program in which the course is taken. Restrictions apply for how many courses may be taken outside of a student's academic program and applied toward the degree (see section regarding registering for courses in other programs in AAP and outside of AAP). For a full tuition list for 2017-2018 (degree and certificate programs), visit: *advanced.jhu.edu/ registration/tuition-and-fees/index.htm.*

Course Fees

Some courses require, in addition to tuition, field trip, laboratory, technology, material or other related fees. These fees, specified in the course schedule (*advanced.jhu.edu/current-students/course-schedule*) for each term, are payable at the same time as the regular tuition charges and are nonrefundable.

Technology Fee

All fully online and blended courses in AAP require an additional technology fee of $175 per course as of Summer 2018. This fee applies to all students registered in online classes, and it is not refundable.

Please note: beginning Fall 2018, the non-refundable technology fee will be $200 per course.

Continuous Enrollment Fee

All degree and certificate students accepted for Fall 2013 and beyond will be charged a nonrefundable $75 fee if they do not enroll in at least one course in the fall or spring semesters. January intersession, May intensive, and summer sessions have been excluded from this requirement. To avoid additional administrative steps later, students are strongly encouraged to adhere to the continuous enrollment policy and to complete registration requests no later than the end of drop/add period each semester

The continuous enrollment fee of $75 is charged for each term you are not enrolled in a credit course (see excluded semesters above). Continuous enrollment entitles students to advising, career and internship services, and use of the Johns Hopkins facilities, including library facilities. AAP students have a maximum of five years to complete all degree requirements applied toward graduation. Exemptions from the continuous enrollment policy will be granted only for documented medical emergencies, approved leaves of absence, or military service. Requests for exemption to the policy should be made to aapregistration@jhu.edu with supporting documentation. Those requesting an official leave of absence should complete the online form at: *advanced.jhu.edu/students/forms/leave-of-absence.*

Withdrawal from Academic Program

Students who elect to discontinue their program of study must formally withdraw from the program in writing by sending an email to aapregistration@jhu.edu. Once students formally withdraw from their program, they are no longer considered students at AAP and can no longer receive services including but not limited to library access, health insurance coverage, or career services.

Students who do not formally withdraw from their program by the end of the add/drop period will be charged the Continuous Enrollment Fee for up to two semesters, or until their status goes Inactive (please see Inactive Section). Inactive students are considered Withdrawn.

Thesis Continuation Course

Students who are in a thesis course and do not finish the thesis in the semester in which they enrolled for it must pay a thesis continuation fee of $500 for each subsequent term (including summer) until a final grade has been submitted. Thesis continuation is relevant only for students currently in the process of completing a thesis and who need more time to finish the thesis. Thesis continuation has a course number in the AAP schedule of classes and can be registered for through SIS. Thesis continuation and continuous enrollment are different. A student working on his/her thesis should not complete the continuous enrollment registration but rather the thesis continuation course. This fee, when paid, allows students to continue using university facilities, such as libraries and the Johns Hopkins Enterprise Directory (JHED).

Graduation Fee

The graduation fee is $100, payable upon receipt of a bill (through your JHU email account) from the Student Accounts Office. Student Accounts sends this bill upon submission of the application to graduate. Billing schedule is subject to change without advanced notice. However, any student who graduates must pay the $100 graduation fee.

Refund Policy

Students may elect to withdraw from one or more course(s) for a variety of reasons.Refunds apply only to the tuition portion of a student's charges, excluding the field trip, lab, or technical fees, and are calculated based on the date the student request to drop or withdraw is received by the Advanced Academic Programs Registration Office, The Johns Hopkins Bernstein/Offit Building, 1717 Massachusetts Ave. NW, Suite 101, Washington, DC 20036-2001. Such a request can be made by using the add/ drop form found at *advanced.jhu.edu/current-students/forms*. Complete the form online or fax the form to the Registration Office at 202-452-1970. Telephone withdrawals are not accepted. Instructors or advisers never authorize or process withdrawals, though it is certainly courteous to inform the instructor of the intent to withdraw. Refunds are not granted to students suspended or dismissed for disciplinary reasons. Students who drop a course before Week 4 of the term will not have that course listed on their official transcript. Students who drop a course after the start of Week 4 and before the end of the semester will receive a W on their official transcript, indicating withdrawal from a course. The refund schedule for each semester is posted on the Web at *advanced. jhu.edu/registration* (choose Step 4: Paying for Your Courses).

Refunds are made in accordance with the schedule listed below and are updated on the Web for each semester/term (*jhu.edu/registration*). If you withdraw after your registration has been processed, the refund to which you are entitled depends on the date your request is received by the Advanced Academic

Programs Registration Office. On-site courses (e.g., international or regional) may be subject to a separate refund policy. Courses offered by other JHU divisions are subject to that division's refund schedule.

REFUND REQUESTS
Exception to the Refund Policy Requests

In the case of rare or exceptional personal medical situations or personal military requirements, a student may request to appeal the standard AAP refund schedule/policy. Refund policy appeals must be submitted in writing (and received) by the Advanced Academic Programs Registration Office no later than the last day of classes of the very next semester/term. All supporting documentation and/or a thorough written explanation for the appeal must beincluded. In cases of rare or exceptional medical situations, supporting documentation should be limited to a letter from the appropriate medical professional, detailing the dates of care and the fitness for the student to attend class during that time. The appeal will be reviewed by the associate dean of AAP. Review times may vary depending upon the complexity of the appeal. Average review times for appeals range from four to six weeks from the date received. All decisions are final.

Refund Schedule

> *Prior to the first day of class*—dropped at 100 percent

> First week of class and prior to the second week of class—dropped at 90 percent

> Second week of class and prior to the third week of class—dropped at 75 percent

> Third week of class and prior to the fourth week of class—dropped at 50 percent

> Beginning the fourth week of classes, courses will be withdrawn (W appears on transcript) –no refund

Some AAP programs may offer courses at an international location or at a site that is not on the Johns Hopkins University premises. These courses may have different registration deadline requirements and refund schedules as well as additional registration paperwork and fees. Students should check the website and SIS messaging carefully for these differences.

JHU LOCATIONS AND STUDENT SERVICES

The Advanced Academic Programs of the Krieger School of Arts and Sciences are offered on the Homewood campus in Baltimore; the Montgomery County Campus in Rockville; the Washington, DC Center; and online. Distances between the various AAP sites are considerable, and the university does not provide transportation between these sites, although public transportation may be available. The educational and student facilities and services provided at each location are described below.

The Johns Hopkins University portal at *my.jhu.edu* is the starting place for students and faculty members and offers a one-stop site for Johns Hopkins news, information, and technology resources. The primary goal of the portal is to simplify and centralize access to JHU services and content. Logging in to the portal requires activation of a Johns Hopkins Enterprise Directory (JHED) login ID and password. The JHED login ID and password are also used to access the Student Information System (SIS) at *sis.jhu.edu*, where students can register for courses, check grades, and view and pay bills. JHED authentication is also needed for remote access to the JHU Sheridan Libraries and other campus resources.

New faculty members and students can go to my.jhu.edu to search for their name in the JHU directory and discover their personal JHED login ID. Click the "First Time Users" tab and follow the instruction to activate a new account. Students and faculty can also activate their JHU email account in the *my.jhu.edu* portal. All official university information will be sent to the student's JHU email address. For additional assistance, the help desk for Johns Hopkins Information Technology can be reached at 410-516-HELP (410-516-4357).

For more details, please visit *advanced.jhu.edu/students* for specific information on student services at each campus location.

Homewood Campus

Library Services
The Sheridan Libraries encompass the Milton S. Eisenhower Library and its collections at the Albert D. Hutzler Reading Room in Gilman Hall, the John Work Garrett Library at Evergreen Museum and Library, and the George Peabody Library at Mount Vernon Place. Together these collections provide the major research library resources for the university. The Sheridan Libraries also provide a rich array of resources and services including research consultation, instructional services and interlibrary loan services, for part-time and full-time students. The Milton S. Eisenhower Library is the university's principal research library and the largest of a network of libraries at Johns Hopkins. The JCard serves as an ID and library card in the JHU libraries. Students who are Johns Hopkins employees at locations other than the Homewood campus use their divisional library or library/ID card. For more information on current hours of operation, parking, and services, and to get started using the resources, please visit the libraries' website: *library.jhu.edu*.

Online Access to Library Resources
Johns Hopkins University provides several options through which Johns Hopkins students and faculty members can access library resources from any Internet-connected location. For information on how to access these online resources when off campus, please visit *library.jhu.edu/services/computing/remoteaccess.html*. For a list of resources, visit the library home page at *library.jhu.edu*.

CIRLA (Chesapeake Information and Research Library Alliance)
CIRLA is a program allowing Johns Hopkins faculty members and graduate students to go in person to a participating library

in the region and borrow materials. A JCard must be presented to apply for CIRLA privileges. For participating libraries and instructions for borrowing, visit *http://www.cirla.org/*.

Computers

The range of Homewood IT services, equipment, and instruction can be found at *it.jhu.edu*. This website serves as a repository for all IT-related information at Johns Hopkins. You will find an abundance of useful information within this site, including an overview of the IT organization, its projects and services, support for applications and general questions, and news about emerging technologies and strategic initiatives. Students may also wish to learn more about computer facilities at the Homewood campus by visiting *jhu.edu/classrooms*.

Johns Hopkins Bookstore

Students can purchase supplies and JHU-themed merchandise at the Barnes & Noble Johns Hopkins Bookstore, located at 3300 St. Paul St. (at the corner of St. Paul and 33rd). For information and store hours, call 410-662-5850 or visit *johns-hopkins.bncollege.com*.

Johns Hopkins Student Union

The Student Union is located in Levering Hall and the Glass Pavilion and offers various programs and activities for students, faculty, staff, and friends of the university. Levering Hall also contains a complete dining facility that serves snacks and sandwiches during the late afternoon and early evening and hot meals during lunchtime.

Security Services

Visit *jhu.edu/security* for an in-depth review of security services available to students, faculty, and visitors to the Homewood campus. All are encouraged to report crimes or suspicious activity by calling 410-516-7777. For any other security-related matters, call 410-516-4600. Students are encouraged to register with the JHU voluntary crisis alert system. This system sends text messages to students when emergency conditions exist. To sign up, students log on to *my.johnshopkins.edu*, enter their Emergency Alert cellphone number, and select the appropriate Johns Hopkins campus.

Parking

The Homewood Parking Office is located in the South Garage, on the south end of campus, under Mason Hall. Office hours are Monday through Friday, 7:30 a.m. to 6 p.m. and Saturday and Sunday 10 a.m. to 6:00 p.m. Evening students and faculty members have a number of options for on-campus parking. For further information and a parking map, visit *parking.jhu.edu* or call 410-516-PARK.

Shuttle Service

The Blue Jay Shuttle provides students with transportation between Baltimore campuses and to various locations in Baltimore. More information and a schedule can be found at the parking website, *parking.jhu.edu/bluejayshuttle.html*.

Montgomery County Campus

The Johns Hopkins University Montgomery County Campus offers part-time graduate courses in several disciplines, including engineering, education, business, and biotechnology. Students attend classes in the evening, enabling them to hold full-time jobs during the day. Located minutes outside of Washington, D.C., the Montgomery County Campus boasts an ideal setting for academics, research, and corporate endeavors. The campus is close to I-270, the Shady Grove Metro Station on the Red Line and a Metro bus route. Gilchrist Hall and the Academic & Research Building include administrative offices, classrooms, computer labs, a wet lab, and an auditorium. Services available include wireless access, a library, and parking.

Library Services

The Montgomery Library Resource Center, a satellite of the Sheridan Libraries' Milton S. Eisenhower Library, provides a wide range of services to students and faculty. Library staff members are available to provide individual reference assistance or group instructional sessions and to facilitate interlibrary loan, reserves, and an array of library services. The library, located on the first floor of Gilchrist Hall, offers access to hundreds of online databases, electronic journals, and an on-site collection of books supporting the programs offered at the Montgomery County Campus. In addition to the center collection, faculty and students have access to hundreds of full-text databases through workstations in the library, the open computer lab, and easy access from home and off campus. Students and faculty can obtain journal articles, books, and audiovisual material not available at the resource library. Articles can be delivered to the desktop, and materialcan be delivered to the center for pickup. To borrow materials, students must present their Johns Hopkins University JCard at the circulation desk. To find out more about the library, including hours and contact information, visit *guides. library.jhu.edu/dcregional*.

Computers

Web-enabled computer workstations are located throughout the MCC campus, providing access to email and other Web resources. Kiosks are not enabled for printing. The MCC Open Computer Lab, located at Gilchrist 324, offers Internet access and the latest Microsoft Office software applications. Printing is available for a fee with a printing card, which can be purchased from the library on the first floor of Gilchrist Hall. The MCC Open Computer Lab is open from 8 a.m. to 10 p.m. Monday through Friday and 8 a.m. to 6 p.m. on Saturday.

Food and Refreshments

The Food for Thought Café offers beverages, sandwiches, salads, snacks, and more. It is located on the first floor of the Academic & Research Building. Hours vary. Several restaurants are open along the parking garage facing Medical Center Drive, including Subway, Freshii, West Wing Café & Bakery, Blue Fin, and Natural Market.

Security Services

The Montgomery County Campus has a security presence in all buildings and a security car used to patrol parking areas. In case of an emergency, call 301-294-7000 or contact the front

desk in the Academic & Research Building or front desk in Gilchrist Hall. Students are encouraged to register with the JHU voluntary crisis alert system. This system sends text messages to students when emergency conditions exist. To sign up, students log on to *my.johnshopkins.edu*, enter their emergency alert cellphone number, and select the appropriate Johns Hopkins campus.

Parking

Free parking is available in the lots on Broschart Road. All non-designated spaces are available for student and visitor use. All regular campus users must display a valid JHU Montgomery County Campus parking tag hanging from the rearview mirror of their vehicle(s). A parking tag may be obtained free of charge from the reception desk in Gilchrist Hall.

Washington, DC Center

The Johns Hopkins University Bernstein/Offit Building at 1717 Massachusetts Ave. NW is the administrative office for Advanced Academic Programs. Student Services, Admissions, Registration, and the Career Services Center are located in Washington, just two blocks south of Dupont Circle and accessible by Metro. The center includes a Library Resource Center, faculty and student lounges, an administrative and program management suite, classrooms, executive education conference rooms, computer labs, wireless access, and a large presentation room. The Washington, DC Center provides an excellent learning environment for Advanced Academic Programs and many School of Arts and Sciences Washington-based initiatives. Guests, faculty, staff, and students must sign in at the security guard's desk in the lobby or show university ID.

Library Services

Under the direction of the Sheridan Libraries, Advanced Academic Programs students in Washington are welcome to do research in the Washington Library Resource Center. The databases, journals, the online catalog, reserve services, and a collection of materials supporting each of the programs offered by the schools.

Students and faculty can also obtain journal articles, books, and audiovisual material not available at the center library. Articles can be delivered to the desktop, and material can be delivered to the center for pickup. The J-Card is used for identification and borrowing privileges. The Library Resource Center has 10 workstations in the Electronic Research Room. Additionally, students may access electronic resources from off campus. To learn more, visit guides.library.jhu.edu/dcregional.

Computers

AAP has two teaching labs and one open lab for AAP students located on the fourth floor of the Bernstein/Offit Building. Internet access connects students to universitywide electronic services. Conventional and specialized software applications are installed to meet the needs of instruction and students. Hours vary each semester and are posted at the center. Wireless Internet access is available throughout the building.

DC Learning Commons

Located on the third floor of the Bernstein-Offit Building at 1717 Massachusetts Ave. NW, the DC Learning Commons is the first of many future initiatives to create a collaborative campus environment for Johns Hopkins students in Washington, D.C. in the Carey Business School, Advanced Academic Programs and the School of Advanced International Studies. The Commons provides a vibrant environment for study, collaboration, interaction, and the coming together of students of the three distinct, unique, and distinguished schools within the university.

Conference rooms, group study rooms, open group study areas, printing services, and a student kitchenette are provided. The space is designed to accommodate the broad variety of learning styles including self-study, small-group study, open-group study, and technology-enhanced study.

Classrooms

Nearly all classrooms at the Washington, DC Center are equipped with enhanced audiovisual technology, including a PC, projector, audio speaker system, remote control presenter, and DVD player. Faculty and studentscan deliver presentations using the classroom computer provided by Advanced Academic Programs or may alternately connect their own laptop to the AV projection system.

Additional Area for Food and Refreshments

An additional student lounge is located on the lower level and has snacks and refreshment machines. The lounge has tables and chairs for those who stop by any of the nearby eating establishments and wish to bring food to the center. The Galley Café, located at 1625 Massachusetts Ave. NW in the Airline Pilots Building, provides light fare to 7:30 p.m. Monday through Thursday and is closed on weekends.

Security Services

Washington, D.C. students are encouraged to register with the JHU voluntary crisis alert system. This system sends text messages to students when emergency conditions exist. To sign up, students log on to *my.johnshopkins.edu*, enter their emergency alert cellphone number, and select the appropriate Johns Hopkins campus.

At the Washington, DC Center, all students and faculty members must show a J-Card or other university ID at the lobby desk. Visitors are required to show a picture ID and sign in. There is a phone on the fourth & 2nd floor that connects directly to the lobby security guard in case of an emergency.

Parking

Parking at 1717 Massachusetts Ave. NW (underneath the Bernstein/Offit Building) is open to students and faculty. The parking garage opens Mon to Fri, 4 am to 11 pm, Sat, 7 am to 6 pm for a discounted rate of $7. For more information, call 202-862-8515. Rates and hours are subject to change without prior notice.

There is a reduced-fee parking arrangement with Central Parking at 1800 Massachusetts Ave. NW. The garage is located

in the lower level of the SEIU building on the corner of 18th Street and Massachusetts Avenue, with the entrance on 18th Street. Students, faculty, and visitors may take advantage of the reduced fee 4:30 to 11 p.m. Monday through Friday. Johns Hopkins University does not control the accessibility of this service.

Online Learning

AAP offers intensive, interactive, and rigorous academic online courses. Frequent meaningful participation is expected of all students, and the demands placed on online students are comparable to those in face-to-face courses. The bulk of course work is done on a student's own schedule throughout the week, making these courses ideal for serious students who need flexibility in location and timing.

Learning Management System

All fully online courses and Web-supported course sites are provided via Blackboard, our learning management system. Students log in to Blackboard using their JHED login ID and password. This is the same ID and password used for course registration in SIS, remote library access, etc. For information on JHED login, course site addresses, technical assistance, and many of the Johns Hopkins digital resources, students can visit *advanced.jhu.edu/students.* Students registering for online courses should be sure to sign up for their Johns Hopkins University email account and use this account for all JHU business and academic matters.

Registration Requirements for Online Courses

Students taking their first online course with Advanced Academic Programs should participate in the onlineBlackboardorientation course prior to the start of the term. Please see Academic Regulations for Online Courses for each specific degree program. **Please note, completion of the online orientation course is required by the following programs: Environmental Sciences and Policy, Energy Policy and Climate, Geographic Information Systems, Museum Studies, Writing, Teaching Writing, Science Writing**.

Library Services

Advanced Academic Programs provides access to all JHU electronic library resources. Learn more at *advanced.jhu.edu/ students/libraries*. You can learn more about distance learning support from Sheridan Libraries here: *https://www.library.jhu.edu/ library-services/distance-learning-support/*.

Online Course Technical Support

The Johns Hopkins University believes technology should be a student asset and never an obstacle to online learning. This is why, as an online learner at JHU, you can access our 24/7 Personal Support Center anytime. The Personal Support Center is always available to assist you with any technical issues that may arise within your online classroom or pertaining to your online learning. To reach the Personal Support Center, call: 855-593-0086.

ADDITIONAL STUDENT SERVICES

Career Services

Career Services provides career development strategies and career counseling to assist graduate students to launch or advance their careers. Services range from one-on-one sessions to webinars. Appointments can be requested by using the online scheduler to submit a request. Log in here: *http://advanced.jhu. edu/current-students/career-services/*. Current AAP students and alumni have access to The CAAP Center, a career management resource tool where you can search for job and opportunity openings, locate career resources in the career library, as well as view announcements, and develop career materials for your job search. Career services are available to actively enrolled students and recent alumni.

AAP students also have access to self-service resources through JHU's central career planning website here: *https://studentaffairs. jhu.edu/career-planning.*

MBS Direct Bookstore

Advanced Academic Programs is serviced by a virtual bookstore, MBS Direct. MBS Direct provides textbook information for students taking courses at all AAP on-site locations and online. The online bookstore offers competitive pricing, new and used books, and buybacks from its large distribution center.

Visit the MBS Direct online store (*bookstore.mbsdirect.net/ jhu-aap. htm*)to begin purchasing your textbooks. The bookstore opens four weeks before the start of the semester/term. If your book is not listed at that time, no textbook information has been entered by the instructor. If that is the case, keep checking back, as information is updated daily before the semester start. Orders can also be placed by phone at 800-325-3252 or fax at 800-499-0143. Direct questions about your book order to the MBS customer service line at 800-325-3252.

Disabilities Services

The Johns Hopkins University is committed to providing reasonable and appropriate accommodations to students with disabilities. For persons with disabilities, it is important to provide a request for accommodation form along with a comprehensive evaluation of a specific disability from an appropriate qualified diagnostician that identifies the type of disability, describes the current level of functioning in an academic setting, and lists recommended accommodations. All documentation will be reviewed, and reasonable accommodations will be provided based on the student's needs. Depending on the accommodation, there may be a time delay before accommodations can be implemented. It is preferred, not required, for students to contact aapdisability@jhu.edu in the School of Arts and Sciences Advanced Academic Programs four weeks prior to the beginning of each semester or event to ensure that services will be available. An accommodation request form and further information can be found at *advanced. jhu.edu/current-students/current-students-resources/ disability-accommodations*. Regarding university-wide disability concerns, contact 410-516-8949 or visit *web.jhu.edu/disabilities*.

Inclement Weather Announcements

When the university closes due to inclement weather, driving conditions, or other unforeseen circumstances, announcements are posted on the Emergency and Weather Hotline, at 410-516-7781 in Baltimore. For localities outside the Baltimore calling area, call 800-548-9004. The information is also made available on the JohnsHopkins University home page at *jhu.edu*.

FINANCIAL AID

Students who plan to request financial aid to cover their tuition should submit the appropriate paperwork in ample time prior to registering. Go to *https://finaid.jhu.edu/graduate-aid/* or email aapfinaid@jhu.edu. Students must take a minimum of two courses to be eligible for federal financial aid. Students may also look at alternative loans for a single course registration. The JHU Policy for Satisfactory Academic Progress requires all students to advance in their program with appropriate grades and within the appropriate timeline to continue receiving financial aid. The FAFSA school code for JHU/AAP is E00473. See full Financial Aid section in the catalog for details regarding satisfactory academic progress required for compliance for financial aid.

Financial Aid

For information about federal financial aid in the form of student loans, students should contact the Office of Student Financial Services, 146 Garland Hall on the Homewood campus. Call 410-516-8028, email at aapfinaid@jhu.edu or visit the financial aid web page at *finaid.jhu.edu/graduate-aid.*

Alternative Loans

All students, including students taking only one course, may borrow an alternative loan to assist with educational expenses. More information is available at *finaid.jhu.edu/graduate-aid/types-of-aid/.*

Financial Aid Programs

Contact the Office of Student Financial Services for information about:

> Federal direct student loan

> Title IV refunds

Veteran's Benefits

Johns Hopkins University is approved by the Maryland Higher Education Commission for the training of veterans, active duty, eligible spouses, and children of military under provisions of the various federal laws pertaining to veterans' educational benefits.

Information about veteran's benefits and enrollment procedures maybe obtained at the Registrar's Office, Garland Hall, 410-516-6635 or ncarr5@jhu.edu. Students eligible for veteran's educational benefits register in the same manner as other students. However, they are required to notify the school certifying official at ncarr5@jhu.edu to request VA certification

each semester after they enroll for classes. Veterans are certified on a per semester basis. **If we do not receive a request from you, we will assume that you are choosing not to use benefits for that term.**

Advanced Academic Programs offers a very limited number of Yellow Ribbon Awards for eligible veterans using Chapter 33 (Post-9/11) benefits. AAP students who are veterans may contact the AAP registrar in Washington, D.C. with general inquiries at aapregistration@jhu.edu or 202-452-1952. For detailed information about veterans' benefits and Yellow Ribbon, contact: Veterans Desk, Office of the Registrar, 75 Garland Hall, Johns Hopkins University, 3400 N. Charles St., Baltimore, MD 21218-2934, 410-516-6635, *web.jhu.edu/registrar/veterans*.

Satisfactory Academic Progress
Students who receive federal student financial aid, in accordance with federal, state, and institutional requirements, must meet satisfactory academic progress established specifically for financial aid purposes. SAP measures three components: cumulative grade-point average (or equivalent measure), cumulative completion rate of courses attempted, and whether students complete a degree or certificate within the university's published maximum time frame. Because these measures are cumulative, all periods of enrollment (even periods when a student did not receive financial aid) must be included in the determination of SAP. The requirements needed for financial aid are different from what may be required by your academic program to remain in "good standing"—students who receive financial aid should take particular care to ensure compliance with SAP as well as AAP academic policies. Under federal Title IV law, the college's financial aid SAP requirements must meet certain minimum requirements and be at least as strict as the college's standards for good academic standing. SAP is reviewed at the end of each traditional semester of enrollment. The policy applies to students applying for financial aid for semesters/period of enrollment that begin with the Fall 2013 semester. For details regarding the financial aid SAP policy, please visit: *https://finaid.jhu.edu/graduate-aid/apply-for-aid/ptp-grad-sap/.*

POLICY STATEMENTS

Students enrolled in course offerings provided by Advanced Academic Programs are responsible for adhering to the policies set forth and established by Johns Hopkins University. Students should visit *my.jhu.edu* to explore a more comprehensive list of university policies. Although every university policy is not listed in the catalog, AAP students are responsible for adhering to all policies set forth by JHU.

Policy on Student or Alumni Letters of Reference

No member of the faculty is obliged to provide a student or graduate with an evaluation or letter of recommendation that does not accurately reflect that faculty member's true opinion and evaluation of that student's or former student's academic performance and conduct.

Notice of Nondiscriminatory Policy

The Johns Hopkins University admits students of any race, color, gender, religion, age, national or ethnic origin, disability, marital status, or veteran status to all of the rights, privileges, programs, benefits, and activities generally accorded or made available to students at the university. It does not discriminate on the basis of race, color, gender, marital status, pregnancy, ethnicity, national origin, age, disability, religion, sexual orientation, gender identity or expression, veteran status, or other legally protected characteristic in any student program or activity administered by the university, including the administration of its educational policies, admission policies, scholarship and loan programs, and athletic and other university-administered programs, or in employment. **Questions regarding Title VI, Title IX, Section 504, and the Age Discrimination Act of 1975 should be referred to Kimberly D. Hewitt, Vice Provost, Office of Institutional Equity, 3400 N. Charles Street, Wyman Park Building, Suite 515, Baltimore, Maryland 21218, 410-516-8075, TTY 410-516-6225.**

Policy on Possession of Firearms on University Premises

The possession, wearing, carrying, transporting, or use of a firearm or pellet weapon is strictly forbidden on university premises. This prohibition also extends to any person who may have acquired a government-issued permit or license. Violation of this regulation will result in disciplinary action and sanctions up to and including expulsion, in the case of students, or termination of employment, in the case of faculty and staff. Disciplinary action for violations of this regulation will be the responsibility of the divisional student affairs officer, dean or director, or the vice president for human resources, as may be appropriate in accordance with applicable procedures. Any questions regarding this policy, including the granting of exceptions for law enforcement officers and for persons acting under the supervision of authorized university personnel, should be addressed to the appropriate chief campus security officer.

Advanced Academic Programs will consider exceptions to this policy only for law enforcement personnel who are required by law or their agency's regulations to carry a weapon while on a campus or center. Requests for an exception must be addressed to John Caron, Associate Dean (johncaron@jhu.edu), in advance of coming to a campus or center. Law enforcement personnel will be required to submit a letter from an authorized official on agency letterhead; the letter must satisfactorily address the justification and need for an exception to the JHU policy.

Statement Regarding the Privacy Rights of Students

The Johns Hopkins University complies with the provisions of the Family Educational Rights to Privacy Act of 1974 (P.L. 93-380) as amended (P.L. 93-568) and any regulations that may be promulgated there under. Students and others who desire specific information regarding their rights of access to institutional educational records maintained in their names are advised to contact the Registrar's Office, 75 Garland Hall, Homewood campus, for a copy of the university's policy.

Americans with Disabilities Act (ADA) Policy

The Johns Hopkins University does not discriminate on the basis of gender, marital status, pregnancy, race, color, ethnicity, national origin, age, disability, religion, sexual orientation, veteran status, or other legally protected characteristics in any student program or activity administered by the university or with regard to admission or employment.

A person with a disability is defined by the Rehabilitation Act of 1973 and by the Americans with Disabilities Act of 1990 as an individual who has a physical or mental impairment that substantially limits one or more major life activities, has a record of such an impairment, or is regarded as having such an impairment. For faculty, staff, and students with disabilities, it is important to provide to the university a comprehensive evaluation of a specific disability from an appropriate qualified diagnostician that identifies the disability, describes the current level of functioning in an academic or employment setting, and lists recommended accommodations. The university provides appropriate, necessary, and reasonable accommodations in programs and facilities for those individuals who are qualified.

This policy is available at *jhu.edu/oie/disability*. Questions regarding compliance with the provisions of the American with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 should be referred to the Office of Institutional Equity, 130 Garland Hall, Homewood campus, 410-516-8949 or (TTY) 410-516-6225.

Sexual Misconduct Policy and Procedures (SMPP) Purpose and Scope

The Johns Hopkins University is committed to providing a safe and non-discriminatory educational and working environment for its students, trainees, faculty, staff, post-doctoral fellows, residents, and other members of the University community. In particular, the University will not tolerate and is committed to providing members of its community with an environment that is free from sexual harassment, sexual assault, relationship violence, and stalking (collectively, "sexual misconduct"). This conduct is disruptive of the learning and working environment of the University's community and deprives students, employees and other community members of equal access to the University's programs and activities. To that end, the University embraces its responsibility to increase awareness of sexual misconduct, prevent its occurrence, support victims, deal fairly and firmly with offenders, diligently investigate complaints of such misconduct and retaliation, and comply with Title IX of the Higher Education Amendments of 1972 ("Title IX") and the Campus SaVE Act. The Johns Hopkins University Sexual Misconduct Policy and Procedures (the "Policy" and these "Procedures") implement the University's commitment to investigate and resolve cases involving sexual misconduct and retaliation promptly, fairly, equitably, impartially, and in compliance with law.

This Policy and these Procedures apply to all members of the University community, including, but not limited to, students, trainees, faculty, staff, post-doctoral fellows, and residents, and cover prohibited conduct that: occurs on campus or other University property; occurs in connection with University programs or activities, whether on or off-campus, including academic, educational, extracurricular, athletic and other programs and activities; or, otherwise affects the University community. In certain instances, this Policy and these Procedures apply to third parties (e.g., visitors; volunteers; vendors and contractors while on University property, participating in a University sponsored activity, or providing or receiving services to the University; applicants for admission to or employment with the University; and former affiliates of the University). This Policy and these Procedures apply equally regardless of an individual's sex, gender, marital status, pregnancy, race, color, ethnicity, national origin, age, disability, religion, sexual orientation, gender identity or expression, veteran status or other legally protected characteristic.

The University prohibits sexual misconduct, which, as defined at the website below, includes sexual harassment, sexual assault, relationship violence, and stalking. The University further prohibits any form of retaliation, intimidation, threats, coercion, or discrimination or attempts thereof, whether direct or indirect, by any officer, employee, faculty, student, trainee, post-doctoral fellow, resident or agent of the University against a person who makes a complaint or report of sexual misconduct or participates in any way in the investigation or resolution of such a complaint or report, or who exercises his or her rights or responsibilities under the Policy, these Procedures or the law.

The full Sexual Misconduct Policy and Procedures may be found at: *http://sexualassault.jhu.edu/policies-laws/.*

Questions regarding this Policy and these Procedures and any questions concerning Title IX should be referred to Joy Gaslevic, JD, the University's Assistant Vice Provost/ Title IX Coordinator and/or Linda Boyd, JD, Deputy Title IX Coordinator: titleixcoordinator@jhu.eduor (410) 516-8075.

University Alcohol and Drug Policy

In keeping with its basic mission, the university recognizes that its primary response to issues of alcohol and drug abuse must be through educational programs, as well as through intervention and treatment efforts. To that end, the university provides appropriate programs and efforts throughout the year. The brochure "Maintaining a Drug-Free Environment: The Hopkins Commitment" is distributed annually to all faculty, students, and staff of Johns Hopkins, and copies are available on request from the officesof the Faculty and Staff Assistance Program, 1101 E. 33rd St., Suite C-100, Baltimore, MD 21218; 443-997-7000; or at the Counseling and Student Development Center located in 3003 N. Charles St., Suite S-200, Baltimore, MD 21218 (near 30th Street in Homewood Apartments); 410-516-8278.

Photography and Film Rights Policy

The Johns Hopkins University reserves the right from time to time to film or take photographs of faculty, staff, and students engaged in teaching, research, clinical practices, and other activities, as well as casual and portrait photography or film. These photographs and films will be used in such publications as catalogs, posters, advertisements, recruitment, and development materials and on the university's website, for various videos or for distribution to local, state, or national media for promotional purposes. Classes will be photographed only with the permission of the faculty member. Such photographs and film—including digital media—which will be kept in the files and archives of the Johns Hopkins University, will remain available for use by the university without time limitations or restrictions. Faculty, students, and staff are made aware by virtue of this policy that the university reserves the right to alter photography and film for creative purposes. Faculty, students, and staff who do not want their photographs used in the manner(s) described in this policy statement should contact the Office of Communications and Public Affairs. Faculty and students are advised that persons in public places are deemed by law to have no expectation of privacy and are subject to being photographed by third parties. The Johns Hopkins University has no control over the use of photographs or film taken by third parties, including without limitation the news media covering university activities.

Principles for Ensuring Equity, Civility, and Respect for All

The Johns Hopkins University is a leader in research, patient care, and education. Our vision is to continue that leadership by ensuring a university culture that is without illegal discrimination and embraces both equity and diversity. We value all members of our community and their contributions to our mission. We demonstrate that value by ensuring that:

> The Johns Hopkins University is an environment in which all people behave in a manner that engenders mutual respect, treating each other with courtesy and civility regardless of position or status in the academy. Rude, disrespectful behavior is unwelcome and will not be tolerated.

> Our community is one where we demonstrate respect for each other, we accept our individual differences, and we provide opportunities for everyone to maximize his or her potential. Every member of our community will be held accountable for creating a welcoming workplace for all.

> Paths to leadership are clear so that opportunities are not blocked artificially. Leadership positions are filled from inclusive candidate pools established by casting wide nets in nontraditional ways. We will not tolerate exclusion based on gender, marital status, pregnancy, race, color, ethnicity, national origin, age, disability, religion, sexual orientation, gender identity, or expression.

> Salary equity is reviewed on a regular basis. We compensate our employees for the job they do in a manner that is equitable and rewards excellence in performance. We will not pay lower salaries to women and people of color simply because they are women and people of color.

> We support work/life balance by encouraging flexibility in the workplace, establishing supportive human resource policies and practices, and providing employee benefits that encourage healthy work-and lifestyles. We will not sacrifice the health of our employees and their families in the pursuit of excellence.

> We hold our community and its individual members accountable for accomplishing these goals.

Master of Science in Applied Economics

appliedeconomics.jhu.edu

Economic analysis is no longer relegated to academicians and a small number of PhD-trained specialists. Instead, economics has become an increasingly ubiquitous and rapidly changing line of inquiry that requires people who are skilled in analyzing and interpreting economic data, and then using it to effect decisions about national and global markets and policy involving everything from health care to fiscal policy, from foreign aid to the environment, and from financial risk to real risk.

The Master of Science in Applied Economics develops skills in economic reasoning and in constructing and estimating economic models through the use of econometrics and other quantitative techniques. This is accomplished by a rigorous and demanding curriculum and a talented and dedicated staff of instructors. This is a 10-course degree program, with classes offered in the evenings at the Washington, DC Center of the Johns Hopkins University (near Dupont Circle) and online. The degree can be pursued at a part-time or a full-time pace, on-site or online, or in both modes. All undergraduate majors are welcome. Admissions are rolling; thus one can begin in summer, fall, or spring semesters.

> Take four core courses (Microeconomic Theory, Macroeconomic Theory, Statistics, and Econometrics).

> Choose at least one advanced econometrics course (Microeconometrics or Macroeconometrics).

> Choose five electives from 31 courses spanning diverse subfields of economics.

For a full list of courses and course descriptions, please visit: *appliedeconomics.jhu.edu*

ILLUSTRATIVE CURRICULA

Applied Economics students tailor their own course of study and can pursue any of the following areas, or mix and match:

Public Policy *(on-site and online)*
For contributing to any level of government policy formulation and policymaking. Choose from among a rich variety of electives: Economics of Industry and Public Policy, Public Economics, Economics of Health Care, Environmental and Resource Economics, Economics of the Labor Market, Law and Economics, and Political Economy. Cost-Benefit Analysis provides conceptual and quantitative tools essential for contemporary microeconomic policy formulation and evaluation. Both Microeconometrics and Macroeconometrics are germane to the subject, as is Survey Research Methods. Computable General Equilibrium Modeling builds a powerful tool with widespread use in the analysis of taxation, income distribution, and environmental matters.

PROGRAM COMMITTEE

Laurence M. Ball
Professor of Economics and Program Chair

Frank D. Weiss
Program Director

Ahmed Mahmud
Associate Director

Genevieve Briand
Assistant Director

Financial Economics and the Macroeconomy *(on-site and online)*
These are two strongly complementary subjects, and we have a rich set of offerings: Financial Economics lays the foundation for the intertemporal and interstatial (risk) microeconomic analysis, and Financial Intermediation & Financial Markets considers how existing institutions cope with both. Monetary Economics, International Finance (Open Economy Macro), and Economic Growth treat the economic aggregates, while Topics in Macroeconomics and Finance or Finance and the Macroeconomy additionally provide perspective. Further depth is gained through Economics of Derivatives, Economic of Investments & Financial Management, and Behavioral Economics and Finance. Quantitative tools are found in Macroeconometrics, Financial Econometrics, and Macroeconomic Forecasting. Economics of the Labor Market complements Macroeconomics.

International Economics and Development *(on-site only)*
For gaining an analytical and quantitative perspective on global matters. Substantive courses include International Finance, International Trade, Development Microeconomics, and Economic Growth. Here too, Cost-Benefit Analysis provides essential conceptual and quantitative tools. Microeconometrics and/or Macroeconometrics, as well as Survey Research Methods, further develop the corresponding quantitative skills. Computable General Equilibrium Modeling builds a powerful tool with widespread applicability in this field. A student can round out the subject in-house.

Spatial Economics *(online only)*
For contributing to local economic policy analysis and policymaking. Students choose Regional Economics and Urban Economics from the Applied Economics Program, and

Geographic Information Systems (GIS) and Spatial Analysis from the GIS Program. The MS degree can be earned fully online by students pursuing this subject.

Environmental Economics *(online only)*

For contributing to efficient policy. Students take Environmental and Resource Economics, Cost-Benefit Analysis, and Microeconometrics and/or Macroeconometrics in the Applied Economics Program. Computable General Equilibrium Modeling builds a powerful tool with widespread use in the field. Up to two courses from the in-house Environmental Science and Policy, Energy and Climate Change, or Geographic Information Systems programs, some of which are available online, can count toward the electives in our program, as can courses from the Johns Hopkins Engineering for Professionals' Environmental Planning and Management Program, most of which are available online. The MS degree can be earned fully online by students pursuing this subject.

Health Economics *(online only)*

Brings to bear the tools of economics in this burgeoning field. Students take Economics of Health Care, Cost-Benefit Analysis, and Microeconometrics in the Applied Economics Program, and choose three or six credits (equivalent of up to two of our courses) from science, specialized quantitative, and policy courses in the part-time Master of Public Health Program at the Bloomberg School, offered online. The MS Degree can be earned fully online by students pursuing this subject.

ADMISSION REQUIREMENTS

In addition to the materials and credentials required for all programs, the Master of Science in Applied Economics also requires:

> A grade-point average of at least 3.0 on a 4.0 scale in undergraduate and prior graduate studies

> One semester of introductory microeconomics, passed with at least a B

> One semester of introductory macroeconomics, passed with at least a B

> One semester of undergraduate calculus or equivalent, passed with at least a B

A grade in a higher level course trumps a grade in a lower level course. A B grade or higher upon repeat is not acceptable.

Application Documents

> AAP application and fee

> An official undergraduate transcript, and all graduate transcripts, if any

> A one-page résumé and a statement of purpose not exceeding 250 words

> Two letters of recommendation from colleagues, previous instructors, supervisors, or others

F-1 Visa Restrictions

International students on an F-1 visa must take at least three courses in fall and spring semesters to maintain visa status. Such students may have to take Math Methods for Economists and/or Statistics online before entering the United States, unless waived, and can then commence their studies on-site in any semester. However, they may only start in summer semesters if they do not need or have already taken Math Methods.

COURSE REQUIREMENTS

Prerequisite Math Requirement
Those entering with only a single calculus course must first take 440.304 *Math Methods for Economists*, a noncredit, full-length course, at half tuition, as the first of eight program courses. Those entering with two calculus courses may study the extra material on their own.

> Four core courses (see course list on the following pages)
> Either 440.614 Macroeconometrics [Time Series Econometrics] *(3 credits)* OR 440.618 Microeconometrics [Cross-Section and Panel Analysis] *(3 credits)*
> Five other elective courses (see course list)

Courses are offered on-site in Washington, D.C. on weekday evenings. Many courses are additionally available online. For information on exact dates, times, fees, and instructors for any term, students should consult the course schedule available several months prior to the beginning of each term (see *advanced. jhu.edu*). Courses are open only to students who meet enrollment requirements and satisfy the prerequisites.

DUAL MS IN APPLIED ECONOMICS/MBA

To allow students to better exploit the strong complementary nature between business and economics, Carey Business School and the Applied Economics Program have eliminated the overlap between the MS in Applied Economics and the MBA. This enables students to earn both the MS degree and the MBA in fewer courses than if pursued separately. Those interested, should apply to the dual MS in Applied Economics/MBA through Advanced Academic Programs. Current students can submit a Change of Program request. Please see page 13 for more information on that process. Dual degree recipients receive both diplomas upon completion of both programs. Course requirements, which can be pursued simultaneously at both schools, are:

MS in Applied Economic Requirements

Prerequisite Math Requirement
Those entering with only a single calculus course must first take *440.304 Math Methods for Economists*, a noncredit, full-length course, at half tuition, as the first of eight program courses. Those entering with two calculus courses may study the extra material on their own.

> **Four core courses:**
  440.601   Microeconomic Theory   *(3 credits)*
  440.602   Macroeconomic Theory   *(3 credits)*
  440.605   Statistics   *(3 credits)*
  440.606   Econometrics   *(3 credits)*

> **One advanced econometrics course:**
  440.614   Macroeconometrics   *(3 credits)* OR
  440.618   Microeconometrics   *(3 credits)*

> **Three elective courses.**

MBA Requirements — Carey Business School

Courses offered in Washington, DC; Columbia, Maryland; Baltimore, Maryland; and Montgomery County, Maryland. All courses are two credits.

Required Courses:
120.601   Business Communication*
121.610   Negotiation*
131.601   Leadership Ethics Seminar*
132.601   Business Law*
142.620   Leadership in Organizations*
142.730   Strategic Human Capital*
210.620   Accounting and Financial Reporting*
231.620   Corporate Finance*
232.701   Investments *
310.620   Information Systems*
410.620   Marketing Management   *(4 credits)*
520.601   Decision Models*
680.620   Operations Management*

Elective Courses:
Eight two-credit courses: Students may elect a concentration in Finance, Marketing, Management, or Real Estate.

MS IN APPLIED ECONOMICS/ GRADUATE CERTIFICATES IN FINANCE

To allow students to better exploit the strong complementary nature between finance and economics, Carey Business School and the Applied Economics Program have eliminated the overlap between the MS in Applied Economics, the Graduate Certificate in Financial Management, and the Graduate Certificate in Investments. This enables students to earn both the MS degree and a graduate certificate for a total of 15 courses, eight at Applied Economics and seven at Carey. Those interested, should apply to the combined MS in Applied Economics/Graduate Certificate in Financial Management or Graduate Certificate in Investments Program through Advanced Academic Programs. Current students can submit a Change of Program request. Please see page 13 for more information on that process. Dual degree recipients receive both diplomas upon completion of both programs. Course requirements, which can be pursued simultaneously at both schools, are:

MS in Applied Economics
1.   440.601   Microeconomic Theory   *(3 credits)*
2.   440.602   Macroeconomic Theory   *(3 credits)*
3.   440.605   Statistics   *(3 credits)*
4.   440.606   Econometrics   *(3 credits)*
5.   440.618   Microeconometrics   *(3 credits)* OR
       440.614   Macroeconometrics   *(3 credits)*
6.   440.640   Financial Economics   *(3 credits)*
7.   Applied Economics Elective I
8.   Applied Economics Elective II

Graduate Certificate in Financial Management
1.   210.610   Accounting & Financial Reporting*
2.   230.620   Financial Modeling and Valuation*
3.   231.620   Corporate Finance*
4.   232.701   Investments*
5.   231.720   Corporate Governance*
6.   Carey Finance Elective I
7.   Carey Finance Elective II

Graduate Certificate in Investments
1.   210.620   Accounting & Financial Reporting*
2.   231.620   Corporate Finance*
3.   232.701   Investments*
4.   232.720   Fixed Income*
5.   232.710   Derivatives*
6.   Carey Finance Elective I
7.   Carey Finance Elective II

INTERNATIONAL INSTITUTE OF FORECASTERS CERTIFICATE IN FORECASTING PRACTICE

The International Institute of Forecasters (IIF/forecasters.org) has approved two sequences of four of our courses as meeting its requirements for awarding its Certificate in Forecasting Practice. Students who have completed Statistics, Econometrics, Microeconometrics or Macroeconometrics, and Macroeconomic Forecasting with at least a B, and who have participated in an additional minicourse on Forecasting in Organizations, will be eligible for the Certificate in Forecasting Practice. Tuition for the minicourse is $450. Those already holding MS degrees in economics from other institutions can typically have Statistics and Econometrics waived. Nondegree seekers are welcome to apply for the IIF certificate as special students.

Not an AAP course. Please refer to partner JHU school division for credit information.

POST-MASTER'S CERTIFICATE IN QUANTITATIVE METHODS IN APPLIED ECONOMICS

The four-course Post-Master's Certificate in Quantitative Methods in Applied Economics is intended for those who already hold a master's degree in economics or statistics, and who wish to expand or update their knowledge. All courses are offered on-site in the evenings at the Washington, DC Center of the Johns Hopkins University (near Dupont Circle) and online. Admissions requirements are the same as for our MS in Applied Economics degree plus a master's degree in economics orstatistics. Students lacking prerequisite courses can take them with us, on-site or online. Admissions are rolling; one can begin in the summer, fall, or spring semester.

Choose four of the following ten courses:

440.614	Macroeconometrics [Time Series Econometrics]	*(3 credits)*
440.615	Macroeconomic Forecasting [Time Series Econometrics]	*(3 credits)*
440.616	Bayesian Econometrics *(3 credits)*	
440.617	Financial Econometrics *(3 credits)*	
440.618	Microeconometrics [Panel Data Econometrics] *(3 credits)*	
440.619	Real Risk *(3 credits)*	
440.622	Cost-Benefit Analysis *(3 credits)*	
440.624	Computable General Equilibrium Modeling *(3 credits)*	
440.625	Machine Learning in Statistics *(3 credits)*	
440.629	Survey Research Methods *(3 credits)*	

COURSE LIST

For course descriptions and full list of electives, please visit *appliedeconomics.jhu.edu*

Prerequisite Course

440.304	Math Methods for Economists

Core Courses

440.601	Microeconomic Theory
440.602	Macroeconomic Theory
440.605	Statistics
440.606	Econometrics

Workshops

440.011	Forecasting in Organizations
440.021	Practicum in Applied Economics

Electives – Quantitative Methods

440.614	Macroeconometrics [Time-Series Analysis]
440.615	Macroeconomic Forecasting [Time Series Analysis]
440.616	Bayesian Econometrics
440.617	Financial Econometrics [Time-Series Analysis]
440.618	Microeconometrics [Cross-Section and Panel Analysis]
440.619	Real Risk
440.622	Cost-Benefit Analysis
440.624	Computable General Equilibrium Modeling
440.625	Machine Learning in Statistics
440.629	Survey Research Methods

Electives – Applied Macroeconomics

440.630	Monetary Economics
440.631	Finance and the Macroeconomy
440.632	Topics in Macroeconomics and Finance
440.634	Economic Growth
440.639	International Finance (Open Economy Macro)

Electives – Financial Economics

440.640	Financial Economics
440.641	Financial Intermediation & Financial Markets
440.643	Economics of Investments & Financial Management
440.645	Behavioral Economics & Finance
440.646	Economics of Derivatives

Electives – Applied Microeconomics

440.650	Environmental & Resource Economics
440.653	Economics of the Labor Market
440.656	Political Economy
440.658	Industrial Organization
440.659	Law and Economics
440.661	Public Economics
440.663	Development Microeconomics
440.665	International Trade (Open Economy Micro)
440.666	Regional Economics
440.667	Urban Economics
440.672	Economics of Health Care

Electives – Analytical Methods

440.684	Game Theory

Electives -Student Research

440.692 -Thesis	

Center for Biotechnology Education

Graduate Programs, Professional Development, Youth Programs

biotechnology.jhu.edu

The Center for Biotechnology Education, established in 2010, expands the scope of biotechnology education at home and abroad to build a pipeline of students and professionals ready to succeed in graduate school, K-12 education, and the work environment in the fields of biotechnology, bioinformatics, regulatory science, and bioscience business and leadership. The mission of the Center for Biotechnology Education is to increase public awareness and understanding of biotechnology, inform educators of the resources and programs available locally and nationally, become a resource center for biotechnology information, coordinate training workshops for students and professionals, and secure funds in support of biotechnology training and education locally, nationally, and internationally. The goals of the center are to develop partnerships with industry and government organizations to provide community outreach, professional development educational opportunities, workshops, research symposia, and lecture series for academia, industry, and the general public.

Biotechnology, the application of biological systems to solve problems or make useful products, continues to expand with new discoveries and lifesaving products at a breathtaking pace. The biotechnology industry harnesses advances in microbiology, cell biology, molecular biology, genomics, and proteomics to move discoveries and ideas out of the laboratory and into the product development pipeline. This dynamic field demands a multidisciplinary workforce skilled in basic research, drug discovery technologies, bioinformatics, regulatory affairs, and product commercialization.

Johns Hopkins University offers students the ability to learn, advance, and succeed in this exciting field, with a variety of learning opportunities designed to meet the needs of working adults. Classes may be taken at two regional campuses: Rockville and Baltimore, Maryland, and in our cyber campus for our online courses. Students may choose from eightdifferent degree options and four certificates offered through the center's graduate studies programs:

> Master of Science in Bioinformatics (a joint offering of the Krieger School of Arts and Sciences and Whiting School of Engineering)
> Master of Science in Biotechnology
> Master of Science in Biotechnology/MBA (a dual degree program offered with Carey Business School)
> Master of Biotechnology Enterprise and Entrepreneurship
> Master of Science in Food Safety Regulation
> Master of Science in Individualized Genomics and Health
> Master of Science in Regulatory Science
> Post-Baccalaureate Health Science Intensive Program
> Certificate in Science, Technology, and International Security/ Master of Science in Biotechnology with a concentration in Biodefense
> Certificate in Biotechnology Education
> Certificate in Biotechnology Enterprise
> Post-Master's Certificate in Sequence Analysis and Genomics

PROGRAM COMMITTEE

Bertrand Garcia-Moreno
Chair, Center for Biotechnology Education

Kristina Obom
Program Director, Individualized Genomics and Health, Biotechnology; Center Director, Center for Biotechnology Education, Senior Lecturer

Thomas E. Colonna
Program Director, Regulatory Science and Food Safety Regulation, Senior Lecturer

Beatrice Kondo
Assistant Program Director, Biotechnology, Post Master's Certificate in Sequence Analysis and Genomics, Senior Lecturer

Lynn Johnson Langer
Program Director, Biotechnology Enterprise, Entrepreneurship and International Programs, Senior Lecturer

Robert Lessick
Program Director, Bioinformatics Senior Lecturer

Meredith Safford
Assistant Program Director, Biotechnology, Senior Lecturer

Alexandra Tan
Program Director, Health Science Intensive, Senior Lecturer

FULL-TIME FACULTY AND STAFF

Jamie Austin
Lecturer and Coordinator, Biotechnology

Jonathan Helfgott
Senior Lecturer and Coordinator, Regulatory Science

Thomas Koval
Senior Lecturer

Sherry Ogg
Senior Lecturer

Emil Wang
Senior Lecturer and Coordinator, Regulatory Science

Katherine Wellman
Senior Lecturer and Coordinator, Biotechnology Enterprise and Entrepreneurship

Karen Wells
Senior Lecturer

Master of Science in Bioinformatics

Joint Offering with the Whiting School of Engineering for Professionals

bioinformatics.jhu.edu

Johns Hopkins University offers an innovative graduate program that prepares professionals for success in bioinformatics. Drawing from the strengths of the Krieger School of Arts and Sciences and the Whiting School of Engineering, this program fully integrates the computer science, bioscience, and bioinformatics needed to pursue a career in this dynamic field.

Students take 11 courses to complete the degree—five core courses, four concentration courses, an elective from bioscience, and an elective from computer science. After completion of the core and concentration courses, students may choose an independent study project (optional). Students have up to five years to complete the program.

This program is designed for working adults. All classes are offered in the evening, on Saturdays or online. Please note that not every course is available at all on-site locations. The degree can be completed fully online. Some courses are offered at the Montgomery County campus and the Homewood campus.

MS in Bioinformatics with Thesis Option

Students interested in pursuing the MS in Bioinformatics with the thesis are required to take 12 courses. The thesis requires a two-semester research project. Students complete 410.800 Independent Research Project (Biotechnology) first and 410.801 Biotechnology Thesis the following semester. Students interested in this option should consult with the program adviser.

ADMISSION REQUIREMENTS

Credentials and Prerequisite Courses

> An undergraduate degree in the biological sciences or in engineering with at least a 3.0 on a 4.0 scale. All the prerequisites listed below can be taken from the existing Master of Science in Computer Science or the Master of Science in Biotechnology program. Students who have not completed all the prerequisites may be admitted provisionally to complete the admission requirements.

> Two semesters of organic chemistry (or 410.302 Bio-Organic Chemistry)

> One semester of biochemistry (or 410.601 Biochemistry)

> Introduction to programming using Java, C++, or C (or 605.201 Introduction to Programming Using Java)

PROGRAM COMMITTEE

Bertrand Garcia-Moreno
Co-Chair, Center for Biotechnology Education

Thomas Longstaff
Co-Chair, Computer Science Program, Engineering for Professionals, Whiting School of Engineering

Robert Lessick
Program Director, Bioinformatics, Center for Biotechnology Education

Eleanor Boyle Chlan
Director, CS, IA, and ISE; Senior Lecturer, Engineering for Professionals, Whiting School of Engineering

Kristina Obom
Individualized Genomics and Health and Biotechnology; Center Director, Center for Biotechnology Education

> Data structures (or 605.202 Data Structures)

> One course in probability and statistics (or 410.645 Biostatistics)

> Calculus

> The admissions committee reserves the right to request additional information from applicants, such as GRE or letters of recommendation, if needed, to assess their candidacy for admission.

Application Documents

> AAP application and fee

> A résumé or curriculum vitae

> Official undergraduate transcript

> 500-word statement of purpose
> TOEFL score for international students
  (minimum score on Internet-based test is 100)

Admission Status

Please see Student Status for descriptions and criteria of the different categories of student status.

COURSE REQUIREMENTS

Core Courses

Five total

410.602   Molecular Biology (*4 credits*)

410.610   Epigenetics, Gene Organization & Expression (*4 credits*)

410.633   Introduction to Bioinformatics (*4 credits*) OR

605.452   Biological Databases and Database Tools*

410.634   Practical Computer Concepts for Bioinformatics (*4 credits*) OR

605.441   Principles of Database Systems*

605.421   Foundations of Algorithms OR

605.420   Algorithms for Bioinformatics*

Concentration Courses

Choose four

410.635   Bioinformatics: Tools for Genome Analysis (*4 credits*)
410.639   Protein Bioinformatics (*4 credits*)
410.640   Molecular Phylogenetic Techniques (*4 credits*)
410.661   Methods in Proteomics (*4 credits*)
410.666   Next Generation DNA Sequencing and Analysis (*4 credits*)
410.671   Gene Expression Data Analysis and Visualization (*4 credits*)
410.698   Bioperl (*4 credits*)
410.712   Advanced Practical Computer Concepts for Bioinformatics (*4 credits*)
410.713   Advanced Genomics and Genetic Analysis (*4 credits*)
410.734   Practical Introduction to Metagenomics (*4 credits*)
410.736   Personalized Medicine and Genomics (*4 credits*)
605.443   Linked Data and the Semantic Web*
605.451   Principles Bioinformatics*
605.453   Computational Genomics*
605.456   Computational Drug Discovery and Development*
605.457   Statistics for Bioinformaticss*
605.716   Modeling and Simulation of Complex Systems*
605.751   Computational Aspects of Molecular Structure*
605.754   Analysis of Gene Expression and High-Content Biological Data*
605.755   Systems Biology*

Electives

Choose one from Computer Science and one from Biotechnology

Computer Science

605.401   Foundations of Software Engineering*
605.444   XML Design Paradigms*
605.462   Data Visualization*
605.481   Principles of Enterprise Web Development*
605.484   Agile Development with Ruby on Rails*
605.486   Mobile Application Development for the Android Platform*
605.701   Software Systems Engineering*
605.741   Large Scale Database Systems*
605.746   Machine Learning*
605.747   Evolutionary Computation*
605.759   Independent Research Project in Bioinformatics*
605.782   Web Applications Development with Java*
605.787   Rich Internet Applications with Ajax*
605.788   Big Data Processing Using Hadoop*

Biotechnology

410.603   Advanced Cell Biology I (*4 credits*)
410.604   Advanced Cell Biology II (*4 credits*)
410.612   Human Molecular Genetics (*4 credits*)
410.613   Principles of Immunology (*4 credits*)
410.615   Microbiology (*4 credits*)
410.616   Virology (*4 credits*)
410.622   Molecular Basis of Pharmacology (*4 credits*)
410.629   Genes & Disease   (*4 credits*)
410.630   Gene Therapy (*4 credits*)
410.632   Emerging Infectious Diseases (*4 credits*)
410.638   Cancer Biology (*4 credits*)
410.641   Clinical & Molecular Diagnostics (*4 credits*)
410.648   Clinical Trial Design and Conduct (*4 credits*)
410.656   Recombinant DNA Laboratory (*4 credits*)
410.752   High Throughput Screening & Automation Laboratory (*4 credits*)
410.800   Independent Research Project in Biotechnology (*4 credits*)

For course listings, see page 52.

Master of Science in Biotechnology

biotechnology.jhu.edu

The MS in Biotechnology program offers a comprehensive exploration of basic science, applied science, and lab science, with a biotechnology focus. The program gives students a solid grounding in biochemistry, molecular biology, cell biology, genomics, and proteomics, and the flexibility for students to tailor elective coursework to meet their individual career goals. In addition to our general degree, the program offers seven different concentrations: Biodefense, Bioinformatics, Biotechnology Enterprise, Molecular Target and Drug Discovery Technologies, Regulatory Affairs, Regenerative and Stem Cell Technologies, and Health Science Intensive. Thus, students can choose to solely focus on strengthening their science knowledge and research skills, or to also develop the skills to lead lab teams, make development and planning decisions, create and apply research modalities to large projects, and take the reins of management and marketing decisions.

This 10-course degree program is thesis-optional, part-time or full-time, and can be completed fully onsite, online, or through a combination of onsite and online courses. Courses in a hybrid format are also offered. Onsite courses are taught during evenings or weekends at either the university's Homewood Campus in Baltimore, MD or the Montgomery County Campus in Rockville, MD.

ADMISSION REQUIREMENTS

Credentials and Prerequisite Courses

An undergraduate degree in the natural sciences or in engineering with at least a 3.0 on a 4.0 scale in undergraduate studies (relevant work experiences are also considered); applicants with degrees in other disciplines may be able to enroll if their undergraduate work included the prerequisite courses that follow:

> Two semesters of biology

> Two semesters of college chemistry, preferably with laboratories

> Two semesters of organic chemistry, preferably with laboratories; students without adequate organic chemistry may be admitted provisionally to take 410.302 Bio-Organic Chemistry

The admissions committee reserves the right to request additional information, such as a GRE score or letters of recommendation, from applicants to assess their candidacy for admission.

PROGRAM COMMITTEE

Bertrand Garcia-Moreno
Chair, Center for Biotechnology Education

Kristina Obom
Program Director, Individualized Genomics and Health and Biotechnology; Center Director, Center for Biotechnology Education

Thomas Colonna
Program Director, Food Safety Regulation and Regulatory Science

Beatrice Kondo
Assistant Program Director, Biotechnology, Post Master's Certificate in Sequence Analysis and Genomics

Lynn Johnson Langer
Program Director, Biotechnology Enterprise,Entrepreneurship and International Programs

Robert Lessick
Program Director, Bioinformatics

Meredith Safford
Assistant Program Director, Biotechnology

Alexandra Tan
Program Director, Health Science Intensive Concentration

Application Documents

> AAP application and fee

> Résumé or curriculum vitae

> Official undergraduate transcript

> 500-word statement of purpose

> Three letters of recommendation are required only for the fellowship applications

International Students

> Foreign credential evaluation: Students who earned their postsecondary degree(s) in a country other than the U.S. are required to have a "course-by-course" credential evaluation with GPA performed by an outside evaluation service.

> International applicants must demonstrate English proficiency by meeting at least one of the following requirements:

   • The applicant submits official TOEFL, IELTS or PTE scores
   • The applicant holds a post-secondary degree from a country where English is both the official language and the only language of instruction
   • English is both the official language and the only language of instruction in the applicant's native country

Admission Status

Please see Student Status for descriptions and criteria of the different categories of student status.

COURSE REQUIREMENTS

> **Four core courses:**
   410.601   Biochemistry *(4 credits)*
   410.602   Molecular Biology *(4 credits)*
   410.603   Advanced Cell Biology I *(4 credits)*
   410.604   Advanced Cell Biology II *(4 credits)*

> **Six elective courses**
   (See course listings page; at least two must be science electives)

   Course requirements differ for the certificate and concentration programs

For information on exact dates, times, locations, fees, and instructors for any semester/term, students should consult the course schedule at *advanced.jhu.edu*. Courses are open only to students who meet enrollment requirements.

Please note: Many of the elective courses require prior completion of core courses. The core courses introduce the foundational information required for these courses. Some students may have covered the material of one or more core courses in previous academic work or through pertinent work experience. Such students can request to waive the appropriate core science courses (excluding 410.604 Advanced Cell Biology II) by contacting the Program Director and providing supporting documentation, such as copies of syllabi and course descriptions. All waived courses must be replaced by science electives in order to satisfy the program course requirements.

FELLOWSHIP PROGRAMS

The Johns Hopkins University Center for Biotechnology Education, with our partner at the Center for Cancer Research/ National Cancer Institute (CCR/ NCI) has developed an innovative graduate fellowship that prepares the next generation of scientists in the emerging field of drug discovery. The fellowship in molecular targets and drug discovery technologies fully integrates the didactic training and hands-on laboratory experience required for graduates to contribute to the advancement of knowledge and research in the field. Fellows earn an MS in Biotechnology with a concentration in Molecular Targets and Drug Discovery Technologies, participate in important basic and applied research, work in CCR/NCI labs, and receive paid tuition for up to two years plus an annual stipend. Fellows receive the stipend only if they are accepted into the Master of Science in Biotechnology and the fellowship program.

DEGREE AND FELLOWSHIP REQUIREMENTS AND PREREQUISITES

Fellowship Criteria

> Accepted as a degree candidate in the MS in Biotechnology Program, Concentration in Molecular Targets & Drug Discovery Technologies

> Graduate from an accredited university/college (within the last three years)

> U.S. citizen or permanent resident

> One course in probability and statistics or biostatistics (or must take before starting degree program)

For information about concentration requirements, see Concentration in Biodefense or Concentration in Molecular Targets and Drug Discovery Technologies. Consult program adviser.

MS IN BIOTECHNOLOGY CONCENTRATIONS (OPTIONAL)

Students wishing to focus on a specialized discipline within the MS in Biotechnology program may enroll in one of six concentrations: Biodefense (with an optional combined credential of a Certificate in National Security Studies), Bioinformatics, Biotechnology Enterprise, Molecular Targets and Drug Discovery Technologies, Bioscience Regulatory Affairs, or Health Science Intensive (HSI). The Molecular Targets and Drug Discovery Technologies and the HSI concentrations are only offered at JHU's Montgomery County Campus in Rockville, Maryland.

Concentration in Biodefense

The biodefense concentration integrates basic and translational science to train the next generation of professionals for employment in academia, industry, and government. The curriculum provides students with a solid foundation in basic science, and investigates the various applications of medical science and biotechnology for detection, identification, and response to bio threats.

Specific disciplines of study include molecular biology, infectious diseases, bioinformatics, immunology, epidemiology, molecular diagnostics, and policy. Three courses, 410.692, 410.693 and the lab course must be completed onsite.

Core Science Courses
Core requirements differ for this concentration.

410.601   Biochemistry *(4 credits)*
410.602   Molecular Biology *(4 credits)*
410.603   Advanced Cell Biology I *(4 credits)*
410.633   Introduction to Bioinformatics *(4 credits)*
410.692   Biological & Chemical Threat Response & Forensics *(4 credits)*
410.693   Science, Medicine and Policy in Biodefense *(4 credits)*

One laboratory course (410.652, 410.656, 410.657, 410.658, 410.659, 410.660, 410.731 or 410.752) *(4 credits each)*

Biodefense Electives
Choose three.

410.604   Advanced Cell Biology II *(4 credits)*
410.611   Vaccinology *(4 credits)*
410.613   Principles of Immunology *(4 credits)*
410.614   Pathogenic Bacteriology *(4 credits)*
410.615   Microbiology *(4 credits)*
410.616   Virology *(4 credits)*
410.618   Parasitology *(4 credits)*
410.621   Agricultural Biotechnology *(4 credits)*
410.631   Infectious Diseases *(4 credits)*
410.632   Emerging Infectious Diseases *(4 credits)*
410.639   Protein Bioinformatics *(4 credits)*
410.640   Molecular Phylogenetic Techniques *(4 credits)*
410.641   Clinical and Molecular Diagnostics *(4 credits)*
410.645   Biostatistics *(4 credits)*
410.652   Cell Culture Techniques *(4 credits)*
410.655   Radiation Biology *(4 credits)*
410.656   Recombinant DNA Laboratory *(4 credits)*
410.658   Biodefense and Infectious Disease Laboratory Methods *(4 credits)*
410.659   Advanced Recombinant DNA Lab *(4 credits)*
410.660   Immunological Techniques in Biotechnology *(4 credits)*
410.661   Methods in Proteomics *(4 credits)*
410.662   Epidemiology: Diseases in Populations *(4 credits)*
410.666   Next Generation DNA Sequencing and Analysis *(4 credits)*
410.669   Immunology of Infectious Diseases *(4 credits)*
410.671   Gene Expression Data Analysis and Visualization *(4 credits)*
410.696   Bioassay Development *(4 credits)*

410.731   Bioprocessing and Scale-Up Laboratory *(4 credits)*
410.752   High Throughput Screening & Automation Lab *(4 credits)*

Concentration in Bioinformatics

Given the vast amount of information generated from studies on humans and other organisms, and the need for scientists and researchers to access and manipulate these data, the biotechnology program offers courses that can either be sampled individually or taken together to complete a concentration in bioinformatics.

In addition to the four core courses (Biochemistry, Molecular Biology, Advanced Cell Biology I, and Advanced Cell Biology II), degree candidates must complete any four of these courses to satisfy the bioinformatics concentration requirements:

Bioinformatics Courses

410.633   Introduction to Bioinformatics *(4 credits)*
410.634   Practical Computer Concepts for Bioinformatics *(4 credits)*
410.635   Bioinformatics: Tools for Genome Analysis *(4 credits)*
410.639   Protein Bioinformatics *(4 credits)*
410.640   Molecular Phylogenetic Techniques *(4 credits)*
410.645   Biostatistics *(4 credits)*
410.661   Methods in Proteomics *(4 credits)*
410.666   Next Generation DNA Sequencing and Analysis *(4 credits)*
410.671   Gene Expression Data Analysis and Visualization *(4 credits)*
410.698   Bioperl *(4 credits)*
410.709   Cancer Genomics *(4 credits)*
410.712   Advanced Practical Concepts for Bioinformatics *(4 credits)*
410.713   Advanced Genomics and Genetic Analysis *(4 credits)*
410.734   Practical Introduction to Metagenomics *(4 credits)*
410.736   Personalized Medicine and Genomics *(4 credits)*

Concentration in Biotechnology Enterprise

For research discoveries to reach the public, an understanding of the overall enterprise of biotechnology is essential. Success in this industry requires two distinct sets of skills and perspectives: understanding the science and understanding the business. Students in this concentration must complete four core science courses, four core enterprise courses, and two science electives.

Biotechnology Enterprise Concentration Courses
Choose four

410.607   Proseminar in Biotechnology *(4 credits)*
410.627   Translational Biotechnology: From Intellectual Property to Licensing* *(4 credits)*
410.637   Bioethics *(4 credits)*
410.642   Economic Dynamics of Change in Biotechnology *(4 credits)*
410.643   Managing and Leading Biotechnology Professionals *(4 credits)*
410.644   Marketing Aspects of Biotechnology *(4 credits)*
410.645   Biostatistics* *(4 credits)*

410.646   Creating a Biotechnology Enterprise (4 credits)
410.647   Research Ethics (4 credits)
410.649   Introduction to Regulatory Affairs (4 credits)
410.650   Legal Aspects of Biotechnology (4 credits)
410.651   Clinical Development of Drugs and Biologics*
(4 credits)
410.665   Bioscience Communication (4 credits)
410.678   Marketing in a Regulated Environment (4 credits)
410.680   Finance for Biotechnology (4 credits)
410.681   Commercializing Biotechnology (4 credits)
410.684   Technology Transfer and Commercialization
(4 credits)
410.685   Emerging Issues in Biotechnology (4 credits)
410.687   Ethical, Legal, and Regulatory Aspects of the
Biotechnology Enterprise (4 credits)
410.688   Project Management in Biotechnology (4 credits)
410.689   Leading Change in Biotechnology (4 credits)
410.703   Strategic Planning for the Biotechnology Enterprise
(4 credits)
410.704   Social Entrepreneurship in Bioscience (4 credits)
410.728   Managing Innovation in the Life Sciences (4 credits)
410.729   Regulatory and Economic Fundamentals of Drug
Pricing and Reimbursement (4 credits)
410.732   Funding a New Venture (4 credits)
410.756   Grants and Federal Funding for Biotechnology
Enterprises (4 credits)
410.806   Independent Studies in Biotechnology Enterprise
and Entrepreneurship (Open only to students in the
MBEE program.) (4 credits)

*These courses count toward science elective requirement

Concentration in Molecular Targets and Drug Discovery Technologies

This concentration is open to MS in Biotechnology students who meet the standard admission requirements. The fellowship, however, is limited to recent post-baccalaureates who meet both the CCR/NCI Fellowship and MS degree requirements. This concentration is offered only at JHU's Montgomery County Campus in Rockville, Maryland.

Concentration Courses
410.696   Bioassay Development (4 credits)
410.750   Molecular Targets and Cancer (4 credits)
410.751   Chemical Libraries and Diversity (4 credits)
410.752   High Throughput Screening & Automation Lab
(4 credits)

Elective Courses
Two required

410.613   Principles of Immunology (4 credits)
410.622   Molecular Basis of Pharmacology (4 credits)
410.633   Introduction to Bioinformatics (4 credits)
410.638   Cancer Biology (4 credits)
410.639   Protein Bioinformatics (4 credits)
410.645   Biostatistics (4 credits)
410.652   Cell Culture Techniques (4 credits)

410.663   Current Topics in Molecular and Cellular Biology
(4 credits)
410.671   Gene Expression Data Analysis and Visualization
(4 credits)
410.697   Microfluidics and Biosensors (4 credits)

Concentration in Regulatory Affairs

Developed in consultation with representatives from the Food and Drug Administration, the Regulatory Affairs Professional Society, and the biotechnology industry, this concentration in the Master of Science in Biotechnology provides students with the knowledge and understanding required for companies and organizations to comply with federal and state regulatory statutes for the development, approval, and commercialization of drugs, biologics, foods, and medical devices.

Students in this concentration must complete four core science courses, four core regulatory affairs courses, and two science electives.

Regulatory Affairs Concentration Courses
Choose four.

410.606   Clinical Trial Management (4 credits)
410.627   Translational Biotechnology: From Intellectual
Property to Licensing (4 credits)
410.648   Clinical Trial Design and Conduct (4 credits)
410.649   Introduction to Regulatory Affairs (4 credits)
410.651   Clinical Development of Drugs and Biologics
(4 credits)
410.673   Biological Processes in Regulatory Affairs (4 credits)
410.675   International Regulatory Affairs (4 credits)
410.676   Food and Drug Law (4 credits)
410.677   Preparing a Successful Submission (4 credits)
410.678   Marketing in a Regulated Environment (4 credits)
410.682   Validation in Biotechnology (4 credits)
410.683   Introduction to cGMP Compliance (4 credits)
410.686   Regulation of Good Food Production practices
(4 credits)
410.687   Ethical, Legal, and Regulatory Aspects of the
Biotechnology Enterprise (4 credits)
410.690   International Food Regulation (4 credits)
410.701   Introduction to Food Safety (4 credits)
410.702   Biomedical Software Regulation (4 credits)
410.715   Medical Device Regulation (4 credits)
410.727   Regulatory Strategies in Biopharmaceuticals
(4 credits)
410.802   Independent Studies in Regulatory Science (4 credits)
410.803   Regulatory Science Thesis (4 credits)

Students may choose any two science electives for which they have met the prerequisites. For a complete list of electives, visit *biotechnology.jhu.edu.*

Concentration in Regenerative and Stem Cell Technologies

Within the biotechnology industry there is increasingly a need for highly skilled professionals in the area of regenerative technologies, who possess an in-depth understanding of stem cells, gene therapy, regenerative medicine and the laboratory skills necessary to advance this rapidly expanding field of research and clinical development. Graduates of this concentration will fill key positions in clinical, industry and research laboratories which are using cell therapies for treatment of diseases.

In addition to the four core courses (Biochemistry, Molecular Biology, Advanced Cell Biology I and Advanced Cell Biology II) students must complete the four concentration courses and any two electives.

Concentration Courses

410.630	Gene Therapy	(4 credits)
410.653	Regenerative Medicine: Bench to Bedside	(4 credits)
410.753	Stem Cell Biology	(4 credits)
410.780	Stem Cell Culture Laboratory Methods	(4 credits)

Electives
Any two electives

Concentration in Health Science Intensive

Through this unique post-baccalaureate program, students enroll full time in an innovative curriculum specifically created to help students build a more competitive medical school application. In addition to the six required courses, students work with their adviser to choose four elective courses that meet their professional goals. Students must also attend at least 80 percent of an advising seminar series.

Core Science Courses
Core requirements differ for this concentration.

410.601	Biochemistry	(4 credits)
410.602	Molecular Biology	(4 credits)
410.603	Advanced Cell Biology I	(4 credits)

Core Nonscience Courses

410.705	Communication for Health Care Professionals	
		(4 credits)
410.706	Building and Leading Teams in Health Care	(4 credits)
410.707	The Psychosocial Determinants of Health, Implications on Diagnostics	(4 credits)

Elective Courses
Below is a potential list of elective courses. Not all courses are available every semester. Contact your adviser for course selection options. Online courses will not be accepted toward required or elective course requirements.

Choose four

410.604	Advanced Cell Biology II	(4 credits)
410.612	Human Molecular Genetics	(4 credits)
410.613	Principles of Immunology	(4 credits)
410.614	Pathogenic Bacteriology	(4 credits)
410.615	Microbiology	(4 credits)
410.616	Virology	(4 credits)
410.618	Parasitology	(4 credits)
410.623	Molecular and Cellular Physiology	(4 credits)
410.628	Neurobiology	(4 credits)
410.629	Genes and Disease	(4 credits)
410.631	Infectious Diseases	(4 credits)
410.632	Emerging Infectious Diseases	(4 credits)
410.636	Biology of HIV and AIDS	(4 credits)
410.638	Cancer Biology	(4 credits)
410.655	Radiation Biology	(4 credits)

MS in Biotechnology, Concentration in Biodefense/Science, Technology and International Security (STIS) Certificate

Students pursuing a biodefense concentration with an interest in international security policy can obtain an additional credential by completing three additional courses offered by the Science, Technology and International Security Certificate Program in AAP. This combined credential will provide professionals with the policy language of international security along with the scientific expertise garnered through the MS in Biotechnology with a biodefense concentration.

Consult with your Science, Technology and International Security adviser about course requirements. You can also find program requirements here: *advanced.jhu.edu/academics/dual-degree-programs/biotechnology-science-technology-and-international-security-certificate/degree-requirements/.*

Master of Science in Biotechnology/MBA

Dual Degree Program with the Carey Business School

advanced.jhu.edu/biomba

Johns Hopkins University offers a dual degree graduate program that prepares bioscience professionals for success in both the science and business of biotechnology. Drawing from the strengths of the Krieger School of Arts and Sciences and the Carey Business School, this innovative program allows students to earn two advanced degrees in less time than it takes to earn them separately. Dual degree recipients receive both diplomas upon completion of both programs: one from the Krieger School of Arts and Sciences, and one from the Carey Business School.

For more information on the dual degree program at JHU, visit the website at *advanced.jhu.edu/biomba* or call 202-452-1940.

Applicants must meet the following criteria to be considered and should review the admissions requirements for the specific biotechnology master's degrees. In addition, students must provide two letters of recommendation and have a minimum of two years of full-time progressive work experience after completion of their undergraduate studies.

Documents Required

> Completed application form: advanced.jhu.edu/admissions

> Nonrefundable application fee: $75

> Official transcripts from all college studies

> GMAT or GRE recommended for those students who do not hold a degree beyond a baccalaureate

> Current résumé or curriculum vitae

> Two letters of recommendation: *advanced.jhu.edu/ admissions*

> Typed essay (see application form for directions)

International Applicants

Currently, international applicants to the MS in Biotechnology/ MBA are not eligible for the I-20 form (certificate of eligibility) needed to obtain an F-1 student visa. In order to qualify for the F-1 visa, a student is required to be enrolled full time. Full-time status/full course of study is defined at the Carey Business School as enrolled in minimally nine credits each fall and nine credits each spring semester for graduate study. At the present time, the maximum number of credits offered per semester in this degree program is eight or less. Consequently, F-1 students would not be able to meet their full-time requirements as defined by the U.S. Citizenship and Immigration Services regulations. If an international is interested in obtaining a nonimmigrant visa type other than an F-1 visa, he/she should contact the U.S. embassy in his/her home country.

Course Descriptions

Contact businessbiotech@jhu.edu for the Carey Business School course descriptions.

For MS in Biotechnology course requirements, see page 35.

For MS in Biotechnology course listings, see page 52.

Master of Biotechnology Enterprise and Entrepreneurship

advanced.jhu.edu/mbee

For a biotechnology enterprise to be successful, it requires trained professionals who understand science and are also skilled in the complexities of biotechnology commercialization. This program brings together a strong science foundation with biotechnology enterprise and entrepreneurship. The program is intended for biotechnology professionals who seek a career beyond the laboratory, either within an existing biotechnology group or organization, or for those who seek to start a new biotechnology enterprise. The curriculum is designed to prepare the next generation of interdisciplinary professionals to address the enterprise and regulatory challenges organizations face in the biotechnology industry.

Students will complete 10 graduate courses, including a final practicum course to gain real-world experience. Students may choose three electives across a broad range of science, enterprise, and regulatory courses, or they may choose a concentration in or Legal/Regulatory Affairs.

Students entering this program will have completed the prerequisite courses in biochemistry and cell biology. Students take seven required core courses, including a practicum.

This degree program is designed for full-time working adults and should take approximately two years to complete, although students may accelerate completion of the program if they wish. The entire 10-course curriculum may be completed fully online or a combination of online and on-site. The faculty members teaching the program work in industry for both private, biomedical science organizations and the federal government, including the Food and Drug Administration. Important notice for international students regarding visa requirements: while the program may be completed online or by a combination of online and on-site, the degree may not be completed fully on-site.

PROGRAM COMMITTEE

Bertrand Garcia-Moreno
Chair, Center for Biotechnology Education

Kristina Obom
Program Director, Individualized Genomics and Health, Biotechnology; Center Director, Center for Biotechnology Education

Thomas E. Colonna
Program Director, Regulatory Science and Food Safety Regulation

Beatrice Kondo
Assistant Program Director, Biotechnology, Post Master's Certificate in Sequence Analysis and Genomics

Lynn Johnson Langer
Program Director, Biotechnology Enterprise, Entrepreneurship and International Programs

Robert Lessick
Program Director, Bioinformatics

Meredith Safford
Assistant Program Director, Biotechnology

The Admissions Committee reserves the right to request additional information from applicants, if needed, to assess their candidacy for admission.

ADMISSION REQUIREMENTS

> One semester of biochemistry and cell biology at the undergraduate or graduate level, or 410.303 Foundations of Bioscience

> An undergraduate degree in the life sciences or engineering from a four-year college with at least a 3.0 on a 4.0 scale

> Application documents

> Current résumé

> 500-word statement of purpose

> Official transcripts

DEGREE REQUIREMENTS

Core courses	Six
Practicum	One
Electives	Three

Choose three electives from the Biotechnology Program for which you have met the prerequisites or have received permission from the program committee. See Biotechnology Studies Courses for a full list of courses.

410.303   Foundations of Bioscience *(4 credits)*
Prerequisite for provisional students accepted in the program who have not previously taken biochemistry or cell biology

Required Courses

410.607   Proseminar in Biotechnology *(4 credits)*
410.627   Translational Biotechnology: From Intellectual Property to Licensing *(4 credits)*
410.643   Managing and Leading Biotechnology Professionals *(4 credits)* OR
410.689   Leading Change in Biotechnology *(4 credits)*
410.644   Marketing Aspects of Biotechnology *(4 credits)*
410.680   Finance for Biotechnology *(4 credits)*
410.687   Ethical, Legal and Regulatory Aspects of the Biotechnology Enterprise *(4 credits)*
410.804   Practicum in Biotechnology Enterprise and Entrepreneurship *(4 credits)*

MASTER OF BIOTECHNOLOGY ENTERPRISE AND ENTREPRENEURSHIP CONCENTRATION (OPTIONAL)

Students wishing to focus on a specialized discipline within the Master' of Biotechnology Enterprise and Entrepreneurship program may enroll in a concentration in MBEE Legal/Regulatory Affairs.

Concentration in MBEE Legal/Regulatory Affairs

In addition to the six core courses and practicum, degree candidates must complete any three of these courses to satisfy the MBEE Legal/Regulatory Affairs concentration requirements:

410.606   Clinical Trial Management *(4 credits)*
410.648   Clinical Trial Design and Conduct *(4 credits)*
410.650   Legal Aspects of Biotechnology *(4 credits)*
410.651   Clinical Development of Drugs and Biologics *(4 credits)*
410.673   Biological Processes in Regulatory Affairs *(4 credits)*
410.676   Food and Drug Law *(4 credits)*
410.683   Introduction to cGMP Compliance *(4 credits)*
410.684   Technology Transfer & Commercialization *(4 credits)*

*This list is subject to change. See program director regarding eligibility of course to count as concentration course.

Master of Science in Food Safety Regulation

advanced.jhu.edu/foodsafety

The Master of Science in Food Safety Regulation is designed to provide students with an understanding of the legal and regulatory complexities of food production, labeling, and distribution. The program will provide students with the knowledge required for companies and organizations that grow, process, distribute, or sell foods and beverages while complying with federal and state regulatory statutes for the production, distribution, and commercialization of food products. Students will complete 10 graduate-level courses within a five-year timeline.

On completion of the Master of Science in Food Safety Regulation, you will be able to do the following:

> Demonstrate a mastery of technical and critical thinking skills in food safety regulation submissions and statutes.

> Design, develop, and implement food safety regulatory submissions.

> Analyze and evaluate food safety regulatory statutes, regulations, guidance documents, and submissions.

The curriculum offers hands-on, real-life food safety regulatory experience through case studies and other assignments. Students will research, evaluate, and present scientifically and legally justifiable positions on case studies from different perspectives of advanced regulatory topics.

Designed for Working Adults

The Master of Science in Food Safety Regulation program offers all courses conveniently online. Most of your highly interactive course work consists of courses taught by professionals in the field of food safety, from the FDA and the food industry. You have up to five years to complete the degree, which typically students complete in two to three years.

ADMISSION REQUIREMENTS

> One semester of biochemistry and one semester of organic chemistry at the undergraduate or graduate level, or 410.303 Foundations of Bioscience *(available to students admitted provisionally only)*

> An undergraduate degree in the life sciences or engineering from a four-year college with at least a 3.0 on a 4.0 scale in the latter half of undergraduate studies

> Application documents

> Current résumé

> 500-word statement of purpose

> Official transcripts

The Admissions Committee reserves the right to request additional information from applicants, if needed, to assess their candidacy for admission.

PROGRAM COMMITTEE

Bertrand Garcia-Moreno
Chair, Center for Biotechnology Education

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Program Director, Individualized Genomics and Health, Biotechnology; Center Director, Center for Biotechnology Education

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Program Director, Regulatory Science and Food Safety Regulation

Beatrice Kondo
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Lynn Johnson Langer
Program Director, Biotechnology Enterprise, Entrepreneurship and International Programs

Robert Lessick
Program Director, Bioinformatics

Meredith Safford
Assistant Program Director, Biotechnology

DEGREE REQUIREMENTS

Core courses	Seven
Electives	Three

The three electives can be chosen from any of the Biotechnology program courses for which you have met the prerequisites or have received permission from the program committee.

The landscape of food safety regulation is currently undergoing extensive changes. As the field continues to change, thisprogram is designed to change with it. While the seven required courses will remain constant, the content will adapt to new discoveries and changes in understanding of the covered topics. Similarly, the approvedlist of elective courses will be a living document that will include newly created courses as appropriate. Furthermore, new courses will be considered based on student feedback and changes in the industry. In addition, students may request course substitutes from other JHU courses that are appropriate and for which they are qualified.

Biotechnology Studies

REQUIRED COURSES

410.674	Food Microbiology	*(4 credits)*
410.686	Regulation of Good Food Production Practices	
		(4 credits)
410.700	Food Labeling and Packaging Regulation	*(4 credits)*
410.701	Introduction to Food Safety Regulation	*(4 credits)*
410.716	Food Toxicology	*(4 credits)*
410.717	Risk Assessment and Management	*(4 credits)*
410.718	Food Safety Audits and Surveillance	*(4 credits)*

SAMPLE ELECTIVE COURSES

410.621	Agricultural Biotechnology	*(4 credits)*
410.645	Biostatistics	*(4 credits)*
410.649	Introduction to Regulatory Affairs	*(4 credits)*
410.665	Bioscience Communication	*(4 credits)*
410.675	International Regulatory Affairs	*(4 credits)*
410.676	Food and Drug Law	*(4 credits)*

Master of Science in Individualized Genomics and Health

advanced.jhu.edu/igh

Individualized Genomics and Health is a rapidly growing area of research and applied science. The growth is due in large part to our increasing dependence on DNA and RNA sequence analysis of human and microbial genomes for diagnosis and treatment of disease. This emerging field requires a workforce with multi-disciplinary skills in bioinformatics, bioscience, regulatory science, policy and ethics. The goal of this degree program is to produce a highly skilled workforce with the theoretical knowledge and practical skills to meet the demands of the academic, research, and business communities.

As the field of Individualized Genomics and Health requires practitioners to have multiple competencies, the core of the Master's degree will include foundation courses in epigenetics, human molecular genetics, ethical, legal and regulatory aspects of individualized genomics, bioinformatics and individual genome analysis. After completion of the core requirements, students may choose to concentrate in Laboratory Diagnostics, Genomics, Regulatory Science or Policy or choose a general concentration. Specifically, the degree program consists of six core courses, three concentration courses and one elective.

Program Objectives:

Students will be able to:

> Explain the molecular and genetic basis for human disease including the role of epigenetics

> Analyze a human genome to identify possible indicators of health and disease

> Apply bioinformatics tools to the analysis of human DNA sequences

> Explain the ethical, legal and regulatory aspects of individualized genomics and health

> Understand the laboratory methods required to identifying genes responsible for disease

ADMISSION REQUIREMENTS

A 4-year bachelor's degree in the life sciences or engineering with the following pre-requisites:

> Minimum GPA of 3.0 on a 4.0 scale

> Organic Chemistry or 410.302 Bio-Organic Chemistry

> Biochemistry or 410.601 Biochemistry

> Advanced Cell Biology I, or 410.603 Advanced Cell Biology

> Molecular Biology, or 410.602 Molecular Biology

> Biostatistics or 410.645 Biostatistics

PROGRAM COMMITTEE

Bertrand Garcia-Moreno
Chair, Center for Biotechnology Education

Kristina Obom
Program Director, Individualized Genomics and Health, Biotechnology; Center Director, Center for Biotechnology Education

Thomas E. Colonna
Program Director, Regulatory Science and Food Safety Regulation

Beatrice Kondo
Assistant Program Director, Biotechnology, Post Master's Certificate in Sequence Analysis and Genomics

Lynn Johnson Langer
Program Director, Biotechnology Enterprise, Entrepreneurship and International Programs

Robert Lessick
Program Director, Bioinformatics

Meredith Safford
Assistant Program Director, Biotechnology

The admissions committee reserves the right to request additional information, such as a GRE score or letters of recommendation, from applicants to assess their candidacy for admission.

Application Documents:

> AAP application and fee

> A résumé or curriculum vitae

> Official undergraduate transcript

> 500-word statement of purpose

> TOEFL score for international students (minimum score on Internet-based test is 100)

Students are required to take six core courses, three concentration courses, and one elective

Biotechnology
Studies

PROGRAM OUTLINE:

Core Courses

410.610	Epigenetics and Gene Organization and Expression *(4 credits)*
410.612	Human Molecular Genetics *(4 credits)*
410.629	Genes and Disease *(4 credits)*
410.633	Introduction to Bioinformatics *(4 credits)*
410.736	Personalized Medicine and Genomics *(4 credits)*
410.760	Ethical, Legal and Regulatory Aspects of Personalized Medicine *(4 credits)*

Concentrations

Lab Diagnostics   *(students choose 3)*

410.641	Clinical and Molecular Diagnostics *(4 credits)*
410.656	Recombinant DNA Lab *(4 credits)*
410.659	Advanced Recombinant DNA Lab *(4 credits)*
410.666	Next Generation Sequencing and Analysis *(4 credits)*
410.671	Gene Expression Data Analysis and Visualization *(4 credits)*

Genomics   *(students choose 3)*

410.634	Practical Computer Concepts for Bioinformatics *(4 credits)*
410.635	Bioinformatics: Tools for Genome Analysis *(4 credits)*
410.666	Next Generation Sequencing and Analysis *(4 credits)*
410.671	Gene Expression Data Analysis *(4 credits)*
410.709	Cancer Genomics *(4 credits)*
410.734	Practical Introduction to Metagenomics *(4 credits)*
410.761	Pharmacogenomics *(4 credits)*

Regulatory   *(Choose 3)*

410.676	Food and Drug Law *(4 credits)*
410.702	Biomedical Software Regulation *(4 credits)*
410.721	In Vitro Diagnostic Regulation *(4 credits)*

Policy   *(Choose 3)*

410.708	Medical Product Reimbursement *(4 credits)*
410.721	In Vitro Diagnostic Regulation *(4 credits)*
410.762	Ethics in Personalized Medicine *(4 credits)*
410.763	Legal Aspects of Personalized Medicine *(4 credits)*
410.764	Healthcare Economics *(4 credits)*

General concentration

Pick three courses from the above concentrations.

One Elective

Any course in the Biotechnology program.
Please consult adviser.

Master of Science in Regulatory Science

regulatory.jhu.edu

As the biomedical industry continues to grow, more companies are developing and commercializing new products. There are thousands of biomedical products in the development pipeline that require regulatory oversight. Many of the companies providing reagents and supplies to the industry must also provide stringent quality controls to ensure compliance with the Food and Drug Administration's Current Good Manufacturing Practices and Quality Systems Regulations. These companies will continue to require trained and educated staffing in regulatory science.

Students entering this program will have completed the prerequisite courses in biochemistry and cell biology, and must undertake six required core regulatory courses. Students then may specialize in an aspect of regulatory science of their choice through three elective courses, including advanced regulatory and science courses. Our students receive practical, hands-on, real-life regulatory science experience through case study assignments and a unique practicum course at the end of the program, which distinguishes this program as a leader in graduate, regulatory science education. Students completing this regulatory science program are expected to become regulatory science leaders in government and industry.

This degree program is designed for full-time working adults and should take approximately two to three years to complete, although students may accelerate completion of the program if they wish. The entire 10-course curriculum may be completed fully online or by combining online classes with instruction on-site in the classroom. The faculty members teaching the program are all leaders in the field of regulatory sciences. They work in industry for both private biomedical science organizations and the federal government, including the FDA.

NOTE: The Master of Science in Regulatory Science program is almost completely online- we typically only run one or two on-site courses per year. Therefore, it is not possible to comply with student visa requirements for on-site course loads in the program. It is recommended that the student stay in her/ her country of origin and take the degree program completely online to avoid student visa compliance issues.

ADMISSION REQUIREMENTS

> One semester of biochemistry and one semester of cell biology at the undergraduate or graduate level

> An undergraduate degree in the life sciences or engineering from a four-year college with a GPA of at least a 3.0 on a 4.0 scale

> Application documents

> Current résumé

> 500-word statement of purpose

> Official transcripts

PROGRAM COMMITTEE

Bertrand Garcia-Moreno
Chair, Center for Biotechnology Education

Kristina Obom
Program Director, Individualized Genomics and Health, Biotechnology; Center Director, Center for Biotechnology Education

Thomas E. Colonna
Program Director, Regulatory Science and Food Safety Regulation

Beatrice Kondo
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Program Director, Biotechnology Enterprise, Entrepreneurship and International Programs

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Meredith Safford
Assistant Program Director, Biotechnology

The Admissions Committee reserves the right to request additional information from applicants, if needed, to assess their candidacy for admission.

DEGREE REQUIREMENTS

Core courses	Six
Practicum	One
Electives	Three

The three electives can be chosen from any of the Advanced Biotechnology Studies program courses for which you have met the prerequisites or have received permission from the program committee.

410.303   Foundations of Bioscience *(4 credits)*
Prerequisite for provisional students accepted in program who have not previously taken biochemistry or cell biology

Biotechnology Studies

REQUIRED COURSES

410.627	Translational Biotechnology: From Intellectual Property to Licensing *(4 credits)*
410.649	Introduction to Regulatory Affairs *(4 credits)*
410.651	Clinical Development of Drugs and Biologics *(4 credits)*
410.673	Biological Processes in Regulatory Affairs *(4 credits)*
410.676	Food and Drug Law *(4 credits)*
410.679	Practicum in Regulatory Science *(4 credits)*
410.683	Introduction to CGMP Compliance *(4 credits)*

Certificate in Biotechnology Education

The Certificate in Biotechnology Education incorporates the fundamental and emerging ideas in biology and biotechnology, as well as issues related to teaching and learning of bioscience at the middle and high school levels. Middle and secondary teachers, as well as curriculum and instructional leaders, will strengthen their own content knowledge and pedagogic techniques in bioscience, and develop ways to teach bioscience effectively in their classrooms. This Certificate consists of five graduate-level courses. The Independent Research Project course will emphasize inquiry-oriented approaches and integrating technology in bioscience education. Moreover, teachers will analyze recent research on bioscience education, reflect on their learning and practice, and develop teaching tools and assessment strategies to engage students in bioscience-related problems and inquiries.

Students who complete the Certificate in Biotechnology Education are eligible to count three science course credits toward a Master of Science in Biotechnology in Krieger School of Arts and Sciences Advanced Academic Programs. For more information, please contact biotechnology@jhu.edu.

For more information about the certificate or how to apply, contact the Center for Biotechnology Education at 410-516-7769 or biotechnology@jhu.edu.

Required Courses

410.303	Foundations of Bioscience	*(4 credits)*
410.601	Biochemistry	*(4 credits)*
410.602	Molecular Biology	*(4 credits)*
410.800	Independent Research Project in Biotechnology *(4 credits)*	

At least one laboratory course*

410.652	Cell Culture Techniques	*(4 credits)*
410.656	Recombinant DNA Laboratory	*(4 credits)*
410.658	Biodefense and Infectious Disease Laboratory Methods *(4 credits)*	
410.660	Immunological Techniques in Biotechnology *(4 credits)*	

Students must enroll in one laboratory courses offered at the Homewood or Montgomery County campuses. Laboratory courses are not offered online.

Biotechnology Studies

Certificate in Biotechnology Enterprise

Students who want a solid understanding of the biotechnology enterprise and are well-versed in the scientific aspects can apply to the Certificate in Biotechnology Enterprise program.

A bachelor's degree is required, and a degree in the life sciences is recommended. For consideration, students submit the standard application form and official transcripts. A grade-point average of 3.0 on a 4.0 scale is expected.

Certificate requirements consist of five courses chosen from the list below. Students may take either two or three of the required courses listed below and then complete two to three of the elective courses listed below for a total of five courses. (While most courses have no science prerequisites, students should not enroll in 410.627 Translational Biotechnology: From Intellectual Property to Licensing or 410.651 Clinical Development of Drugs and Biologics unless they have a strong background in molecular biology, or have taken the core courses 410.601 Biochemistry and 410.602 Molecular Biology.)

Students who successfully complete the certificate and subsequently decide to seek admission to the master's degree program in biotechnology will receive credit for three of the courses taken in the certificate. All time limit restrictions as noted in the admissions section of this catalog will apply.

Required Courses

Choose two of the following.

410.643   Managing and Leading Biotechnology Professionals (4 credits)
410.644   Marketing Aspects of Biotechnology (4 credits)
410.680   Finance for Biotechnology* (4 credits)
410.689   Leading Change in Biotechnology (4 credits)

Electives

Choose two to three of the following for a total of five courses.

410.607   Proseminar in Biotechnology (4 credits)
410.627   Translational Biotechnology: From Intellectual Property to Licensing* (4 credits)
410.637   Bioethics (4 credits)
410.642   Economic Dynamics of Change in Biotechnology (4 credits)
410.643   Managing and Leading Biotechnology Professionals (4 credits)

410.644   Marketing Aspects of Biotechnology (4 credits)
410.645   Biostatistics* (4 credits)
410.646   Creating a Biotechnology Enterprise (4 credits)
410.647   Research Ethics (4 credits)
410.649   Introduction to Regulatory Affairs (4 credits)
410.650   Legal Aspects of Biotechnology (4 credits)
410.651   Clinical Development of Drugs and Biologics* (4 credits)
410.665   Bioscience Communication (4 credits)
410.678   Marketing in a Regulated Environment (4 credits)
410.681   Commercializing Biotechnology (4 credits)
410.684   Technology Transfer and Commercialization (4 credits)
410.685   Emerging Issues in Biotechnology (4 credits)
410.687   Ethical, Legal & Regulatory Aspects of the Biotechnology Enterprise (4 credits)
410.688   Project Management in Biotechnology (4 credits)
410.703   Strategic Planning for the Biotechnology Enterprise (4 credits)
410.704   Social Entrepreneurship in Bioscience (4 credits)
410.728   Managing Innovation in the Life Sciences (4 credits)
410.732   Funding a New Venture (4 credits)
410.756   Grants and Federal Funding for Biotechnology Enterprises (4 credits)

Note: This list is subject to change. Please contact the program director to determine if an elective will count toward the certificate.

* Also counts as science elective.

Post-Master's Certificate in Sequence Analysis and Genomics

The field of bioinformatics is continually expanding and challenging our ability to bridge the gap between molecular biology and computer technology. Specifically, the revolution in sequencing technology has resulted in vast quantities of data that requirestorage and analysis. The analysis of nucleic acid and protein data requires specialized bioinformatics tools and an understanding of genomics. The emerging sequencing technologies and accompanying bioinformatics tools will advance personalized medicine, pharmacogenomics, and molecular diagnostics methods. The advancement of these tools will open new avenues of research on many fronts.

This certificate is targeted at scientists who already have grounding in biochemistry, molecular biology, and cell biology, and do not need advanced computer skills; thus, they do not require all the core requirements of the other two master's programs. It introduces students to the foundations of bioinformatics through the core bioinformatics courses, and then the students take upper-level courses that are required for understanding and performing sequence and genomic analysis. The program is offered both online and on-site.

Admission Requirements

> Master's or doctoral degree in the biological sciences or engineering from an accredited institution

> One semester of biochemistry or equivalent, or 410.601 Biochemistry

> One semester of molecular biology or equivalent or 410.602 Molecular Biology

Required Courses

410.633   Introduction to Bioinformatics *(4 credits)*
410.634   Practical Computer Concepts for Bioinformatics *(4 credits)*

Choose one of the following:
410.635   Bioinformatics: Tools for Genomic Analysis *(4 credits)*
–OR–
410.666   Next Generation Sequencing and Analysis *(4 credits)*

Elective Courses

Choose two.

410.635   Bioinformatics: Tools for Genomic Analysis *(4 credits)*
410.639   Protein Bioinformatics   *(4 credits)*
410.640   Molecular Phylogenetic Techniques *(4 credits)*
410.645   Biostatistics *(4 credits)*
410.666   Next Generation Sequencing and Analysis *(4 credits)*
410.671   Gene Expression Data Analysis and Visualization *(4 credits)*
410.709   Cancer Genomics   *(4 credits)*
410.712   Advanced Practical Computer Concepts for Bioinformatics *(4 credits)*
410.713   Advanced Genomics and Genetic Analysis *(4 credits)*
410.734   Practical Introduction to Metagenomics *(4 credits)*
410.736   Personalized Medicine and Genomics *(4 credits)*

Center for Biotechnology Education Course Listings

Bioinformatics, Biotechnology, Biotechnology Enterprise and Entrepreneurship, Food Safety Regulation, Individualized Genomics and Health, Regulatory Science, Biotechnology Education Certificate, Biotechnology Enterprise Certificate, Sequence Analysis and Genomics Certificate.

Below is a cumulative list of courses for the degree and certificate programs (listed above) for the Center for Biotechnology Education. For course requirement for a specific program, consult the individual program's pages in this catalog.

For a list of course descriptions, please visit biotechnology.jhu.edu.

Key Code: S = Course Counts as a Science Course

PREREQUISITE COURSES

410.302	**Bio-Organic Chemistry**	*(4 credits)*	**S**
410.303	**Foundations in Bioscience**	*(4 credits)*	**S**

CORE COURSES FOR MS IN BIOTECHNOLOGY

410.601	**Biochemistry**	*(4 credits)*	**S**
410.602	**Molecular Biology**	*(4 credits)*	**S**
410.603	**Advanced Cell Biology I**	*(4 credits)*	**S**
410.604	**Advanced Cell Biology II**	*(4 credits)*	**S**

Bioscience Elective Courses

410.606	Clinical Trial Management	*(4 credits)*	S
410.610	Epigenetics, Gene Organization & Expression	*(4 credits)*	S
410.611	Vaccinology	*(4 credits)*	S
410.612	Human Molecular Genetics	*(4 credits)*	S
410.613	Principles of Immunology	*(4 credits)*	S
410.614	Pathogenic Bacteriology	*(4 credits)*	S
410.615	Microbiology	*(4 credits)*	S
410.616	Virology	*(4 credits)*	S
410.617	Marine Biotechnology	*(4 credits)*	S
410.618	Parasitology	*(4 credits)*	S
410.620	Advanced Topics in Immunology	*(4 credits)*	S
410.621	Agricultural Biotechnology	*(4 credits)*	S
410.622	Molecular Basis of Pharmacology	*(4 credits)*	S
410.623	Molecular & Cellular Physiology	*(4 credits)*	S
410.625	Industrial Microbiology	*(4 credits)*	S
410.626	Molecular Development	*(4 credits)*	S
410.628	Neurobiology	*(4 credits)*	S
410.629	Genes & Disease	*(4 credits)*	S
410.630	Gene Therapy	*(4 credits)*	S
410.631	Infectious Diseases	*(4 credits)*	S
410.632	Emerging Infectious Diseases	*(4 credits)*	S
410.633	Introduction to Bioinformatics	*(4 credits)*	S
410.634	Practical Computer Concepts for Bioinformatics	*(4 credits)*	S
410.635	Bioinformatics: Tools for Genome Analysis	*(4 credits)*	S
410.636	Biology of HIV & AIDS	*(4 credits)*	S
410.638	Cancer Biology	*(4 credits)*	S
410.639	Protein Bioinformatics	*(4 credits)*	S
410.640	Molecular Phylogenetic Techniques	*(4 credits)*	S
410.641	Clinical & Molecular Diagnostics	*(4 credits)*	S
410.645	Biostatistics	*(4 credits)*	S
410.648	Clinical Trial Design and Conduct	*(4 credits)*	S
410.651	Clinical Development of Drugs and Biologics	*(4 credits)*	S
410.653	Regenerative Medicine: Bench to Bedside	*(4 credits)*	S
410.655	Radiation Biology	*(4 credits)*	S
410.661	Methods in Proteomics	*(4 credits)*	S
410.662	Epidemiology: Diseases in Populations	*(4 credits)*	S
410.663	Current Topics in Molecular & Cellular Biology	*(4 credits)*	S
410.666	Next-Generation DNA Sequencing and Analysis	*(4 credits)*	S
410.669	Immunology of Infectious Diseases	*(4 credits)*	S
410.671	Gene Expression Data Analysis and Visualization	*(4 credits)*	S
410.673	Biological Processes in Regulatory Affairs	*(4 credits)*	S
410.674	Food Microbiology	*(4 credits)*	S
410.692	Biological & Chemical Threat Response &Forensics	*(4 credits)*	S
410.693	Science, Medicine & Policy in Biodefense	*(4 credits)*	S
410.695	Applied Molecular Biology	*(4 credits)*	S
410.696	Bioassay Development	*(4 credits)*	S
410.697	Microfluidics and Biosensors	*(4 credits)*	S
410.698	Bioperl	*(4 credits)*	S
410.699	Nanobiotechnology	*(4 credits)*	S
410.700	Food Labeling and Packaging Regulations	*(4 credits)*	
410.709	Cancer Genomics	*(4 credits)*	S
410.712	Advanced Practical Computer Concepts for Bioinformatics	*(4 credits)*	S
410.713	Advanced Genomics and Genetics Analysis	*(4 credits)*	S
410.716	Food Toxicology	*(4 credits)*	S
410.733	Comparative Animal Physiology	*(4 credits)*	S
410.734	Practical Introduction to Metagenomics	*(4 credits)*	S

410.736	Personalized Medicine and Genomics	(4 credits) S
410.750	Molecular Targets & Cancer	(4 credits) S
410.751	Chemical Libraries & Diversity	(4 credits) S
410.753	Stem Cell Biology	(4 credits) S
410.754	Microbiome Analysis	(4 credits) S
410.761	Pharmacogenomics	(4 credits) S
410.777	Next Generation Alternative Energies	(4 credits) S
410.800	Independent Research in Biotechnology	(4 credits) S
410.801	Biotechnology Thesis	(4 credits) S

ENTERPRISE AND REGULATORY COURSES

410.605	Life Science Entrepreneurial Ventures (4 credits)
410.606	Clinical Trial Management (4 credits) S
410.607	Proseminar in Biotechnology (4 credits)
410.627	Translational Biotechnology: From Intellectual Property to Licensing (4 credits) S
410.637	Bioethics (4 credits)
410.642	Economic Dynamics of Change in Biotechnology (4 credits)
410.643	Managing and Leading Biotechnology Professionals (4 credits)
410.644	Marketing Aspects of Biotechnology (4 credits)
410.646	Creating a Biotechnology Enterprise (4 credits)
410.647	Research Ethics (4 credits)
410.649	Introduction to Regulatory Affairs (4 credits)
410.650	Legal Aspects of Biotechnology (4 credits)
410.665	Bioscience Communication (4 credits)
410.675	International Regulatory Affairs (4 credits)
410.676	Food and Drug Law (4 credits)
410.677	Preparing a Successful Submission (4 credits)
410.678	Marketing in a Regulated Environment (4 credits)
410.679	Practicum in Regulatory Science (4 credits)
410.680	Finance for Biotechnology (4 credits) S
410.681	Commercializing Biotechnology (4 credits)
410.682	Validation in Biotechnology (4 credits)
410.683	Introduction to CGMP Compliance (4 credits)
410.684	Technology Transfer & Commercialization (4 credits)
410.685	Emerging Issues in Biotechnology (4 credits)
410.686	Regulation of Good Food Production (4 credits)
410.687	Ethical, Legal & Regulatory Aspects of the Biotechnology Enterprise (4 credits)
410.688	Project Management in Biotechnology (4 credits)
410.689	Leading Change in Biotechnology (4 credits)
410.690	International Food Regulations (4 credits)
410.701	Introduction to Food Safety (4 credits)
410.702	Biomedical Software Regulation (4 credits)
410.703	Strategic Planning for the Biotechnology Enterprise (4 credits)
410.704	Social Entrepreneurship in Bioscience (4 credits)
410.708	Medical Product Reimbursement
410.710	Economic Policy and Support Structures the Bio Entrepreneur (4 credits)
410.715	Medical Device Regulation (4 credits)
410.717	Risk Assessment and Management (4 credits)

410.718	Food Safety Audits and Surveillance (4 credits)
410.721	In Vitro Diagnostic Regulation
410.727	Regulatory Strategies in Biopharmaceuticals (4 credits)
410.728	Managing Innovation in the Life Sciences (4 credits)
410.732	Funding a New Venture (4 credits)
410.756	Grants and Federal Funding for Biotechnology Enterprises (4 credits)
410.760	Ethical, Legal and Regulatory Aspects of Personalized Medicine
410.762	Ethics in Personalized Medicine
410.763	Legal Aspects of Personalized Medicine
410.764	Healthcare Economics
410.799	Current Topics in Regulatory Policy (4 credits)
410.802	Independent Studies in Regulatory Science (4 credits)
410.803	Regulatory Science Thesis (4 credits)
410.804	Practicum in Biotechnology Enterprise & Entrepreneurship (4 credits)
410.805	Practicum in Project Management
410.806	Independent Studies in Biotechnology Enterprise and Entrepreneurship (4 credits)

HEALTH SCIENCE INTENSIVE COURSES

410.705	Communication for Health Care Professionals (4 credits)
410.706	Building and Leading Teams in Health Care (4 credits)
410.707	The Psychosocial Determinants of Health, Implications on Diagnostics (4 credits)

LABORATORY ELECTIVE COURSES

410.652	Cell Culture Techniques (4 credits) S
410.656	Recombinant DNA Laboratory (4 credits) S
410.657	Recombinant Protein Expression, Production, and Analysis (4 credits) S
410.658	Biodefense & Infectious Disease Laboratory Methods (4 credits) S
410.659	Advanced Recombinant DNA Lab (4 credits) S
410.660	Immunological Techniques in Biotechnology (4 credits) S
410.731	Bioprocessing and Scale-Up Laboratory (4 credits) S
410.752	High Throughput Screening & Automation Lab (4 credits) S
410.780	Stem Cell Laboratory Method S

Biotechnology Studies

Master of Arts in Communication

communication.jhu.edu

The Master of Arts in Communication program helps professionals advance or switch their careers. Although many of our diverse group of students are already working in the field of communication and looking for additional training to advance, some are transitioning from another field. Regardless, the majority of our graduates testify that the master's degree helps with getting a new position. Our alumni are managers, directors, vice presidents, presidents, and other leaders in various organizations, such as government agencies, associations, nonprofits, and corporations. Students and alumni have access to our exclusive job opportunities network and career services center. This degree provides a great opportunity to hone or perfect your communication skills, learning from leaders in the field. It is not necessarily a path to a PhD program in that it is geared toward providing practical, leading edge skills that will prepare you to be a leader in the field.

Prerequisites

Prospective students must hold a bachelor's degree with a minimum grade-point average of 3.0 (or the equivalent from outside the U.S.). Competitive applicants have excellent writing skills, and a strong academic or professional background in communication prior to enrolling in the Master of Arts in Communication program.

Application Requirements

All Students

> AAP application

> Nonrefundable application fee

> Resume: Include any part- or full-time work, internships, and volunteer history. Detail any responsibilities related to communication.

> Statement of purpose: Explain why you are interested in earning the Master of Arts in Communication and how it will help your career or other goals. Double space your essay and limit it to 500 words or less (place the word count at the end of the document).

> Writing sample: Please go to the online application to download instructions and an article for your writing sample. This exercise asks you to write a single, brief paragraph. It should not take the form of a larger document, such as a letter, an email, a report, or a plan. Submit one paragraph with no more than 250 words.

> Two recommendations: Professors or supervisors should verify academic and professional accomplishments. The department prefers that they complete the AAP recommendation form rather than provide a letter.

PROGRAM COMMITTEE

Prof. Brad Leithauser
Program Chair

Dr. Taylor Hahn
Program Director

> Official transcripts: For U.S. graduates, transcripts should show all undergraduate and graduate course work completed within the U.S. only.

> GRE scores, if necessary: The Master of Arts in Communication program waives this requirement for applicants who have (a) a cumulative undergraduate GPA of 3.0 or higher or (b) five or more years of full-time work experience after earning an undergraduate degree. Submit results directly to the Advanced Academic Programs Office of Admissions, using the code 8747. Photocopies will not be accepted.

International Students

> Foreign credential evaluation: Students who earned their postsecondary degree(s) in a country other than the U.S. are required to have a "course-by-course" credential evaluation with GPA performed by an outside evaluation service. Study abroad may be exempt.

> TOEFL or IELTS scores: International students who have not graduated from an accredited college or university in the U.S. and whose native language is not English must take the Test of English as a Foreign Language or International English Language Testing System. Submit results directly to the Advanced Academic Programs Office of Admissions, using the code 8747. Photocopies will not be accepted. For the TOEFL, AAP requires a minimum score of 600 on the paper test, 250 on the computer-based test, and 100 on the Internet-based test. AAP requires an IELTS bandscore of 7.0.

Student Status

At the time of admission, students will fall under one of the following statuses: degree, provisional, conditional, or special. Degree candidates fulfill all academic requirements at the time of application. All degree candidates must take the course 480.600 Research & Writing Methods in the first semester of

matriculation. Students may take additional courses as well, but are cautioned against taking too many courses during the first semester of study.

Provisional students must take 480.603 Communication in Practice in their first semester of matriculation and pass with a grade of B or better in order to advance to degree candidacy. This course will count toward the MA in Communication degree as an elective. Once this course is passed satisfactorily, a change of status from provisional student to degree candidate must be submitted by the student to the Registrar. Students may take one additional elective course along with Communication in Practice. If a provisional student does not earn a grade of a B or better in Communication in Practice, the student will be dismissed from the program.

Conditional students are in their last semester of undergraduate study at the time of application and must submit an official transcript verifying degree conferral prior to registering for their second semester.

Special students qualify as degree candidates but wish to take fewer than the 10 courses required for conferral of the Master of Arts in Communication.

Student Visas

International students who have been admitted as degree, provisional, or conditional candidates, and who take at least three courses per semester, which is full-time classification, may request certification for an F-1 visa. Students for whom this may be a possibility should indicate "Yes" on their admissions application at the appropriate check box regarding initiating the visa process. In order to maintain status on an F-1 visa, students in AAP must be enrolled in a minimum of three courses per semester, one of which can be an online course. The students must complete their certification process with the Office of International Services. For more information, international applicants should refer to the International Applicants webpage: *advanced.jhu.edu/students/international-students*.

CURRICULUM

The curriculum of the Master of Arts in Communication program aims for the following learning outcomes for students:

1. Provide theoretical knowledge about the social science of communication that students can use on the job to produce more effective messages and strategic communication programs.

2. Provide cutting-edge, real-world job skills and training for students to move into the field of communication or move up to jobs that require more responsibility and greater knowledge.

3. Improve students' critical thinking, problem-solving, and writing skills.

4. Help students develop into communication professionals who understand how to conduct, read, evaluate, and use research to further their professional objectives.

Electives meet the second learning outcome, while required and core courses address the remaining learning outcomes. All courses help students develop strong portfolios that they can present to their current or prospective employers.

Students must take a total of 10 courses, or 30 credits. Each semester, courses are offered on-site and online, but due to popular demand, more courses are offered online than on-site. For this reason, students who prefer being on-site may have to take some courses online. At the same time, we cannot guarantee that a particular course will be offered online in any given semester (i.e., it may be offered on-site only). Every attempt is made to offer a variety of courses both online and on-site.

PROGRAM TRACKS

Students will choose to follow either the strategic planning track, or the research track. The majority of students opt for the strategic planning track, which is geared toward preparation to become a communications practitioner. Students with an interest in conducting communication research may opt for the research track. Students must satisfy the appropriate core courses and electives to be eligible to receive the MA degree. Students may choose to switch from one track to the other during the course of studies. Note that this may increase time to graduation if it requires additional courses to be taken in order to satisfy the track requirements.

Core Courses

Degree candidate students must complete Research and Writing Methods before taking any core courses. Strategic planning students can enroll in Practicum in their last semester. Students who earn a C or below in a core course may not count that course toward core requirements and will not earn credits for that course.

Strategic Planning Track

Degree candidates following the Strategic Planning Track must satisfy the following ten courses:

> Research and Writing Methods

> At least three core courses from the following:

    480.601   Intro to the Digital Age *(3 credits)*
    480.602   Changing Behavior through Communication
              (3 credits)
    480.604   Theory of Mass Communication Practice *(3 credits)*
    480.606   Persuasion *(3 credits)*
    480.608   Analytic Techniques in Communication Research
              (3 credits)
    480.609   Applied Qualitative Research *(3 credits)*

> Six electives

Communication Research Track

Degree candidates following the Research Track must satisfy the following ten courses:

> Research and Writing Methods

> At least two core courses from among the following:

    480.601 Intro to the Digital Age (*3 credits*)
    480.602 Changing Behavior through Communication
        (*3 credits*)
    480.604 Theory of Mass Communication Practice (*3 credits*)
    480.606 Persuasion (*3 credits*)

> At least one core course from among the following:

    480.608 Analytic Techniques in Communication Research
        (*3 credits*)
    480.609 Applied Qualitative Research (*3 credits*)

> 480.800 Thesis and if necessary, Thesis Continuation

> Five electives

Prerequisite Course

All provisional students must pass Communication in Practice during their first semester in the Master of Arts in Communication program before changing from provisional student to degree candidate and then enroll in Research and Writing Methods. Provisional students who earn a B- or below in Communication in Practice or any other course are dismissed.

Required Courses

Degree candidates must pass Research and Writing Methods during their first semester before enrolling in any core courses Students may not take a leave of absence while completing their theses. Students who earn a C or below in a required course must repeat that course.

Electives

Students may take electives in any of the areas listed below regardless of concentration. Students may take additional core courses as electives.

CONCENTRATIONS

Students are not required to specify a concentration. Students who want a concentration may identify one, or occasionally two, of the fields listed below. A single course cannot count toward two concentrations. Students may take electives in any area regardless of concentration. To earn a concentration, students may have to take in-person and online courses. Although it is possible for online students to earn a concentration, we cannot guarantee enough courses will be available online for all concentrations. Concentrations appear on transcripts but not diplomas.

Public and Media Relations

The concentration in public relations and media covers everything from pitching and planning to budgeting and executing a comprehensive communication campaign. Private companies, nonprofit organizations, and federal agencies all employ communication strategies and need employees knowledgeable in theory and practice. Students must complete at least three of the following electives:

480.622	Branding by Motion Picture	(*3 credits*)
480.629	Public Relations in the Age of Digital Influence	(*3 credits*)
480.634	Journalism and Publishing in the Digital Age	(*3 credits*)
480.635	Communication.org: Not-for-Profits in the Digital Age	(*3 credits*)
480.637	Using Social and Digital Media	(*3 credits*)
480.638	Utilizing Images: Media Literacy in Practice	(*3 credits*)
480.642	Corporate Social Responsibility Campaigns	(*3 credits*)
480.643	Branding and Advertising	(*3 credits*)
480.651	Sports Branding and Marketing	(*3 credits*)
480.653	Communicating for Social Change	(*3 credits*)
480.654	Strategic Communication Program Management	(*3 credits*)
480.657	Introduction to Public Relations	(*3 credits*)
480.658	Public Relations Writing	(*3 credits*)
480.659	Crisis Communication	(*3 credits*)
480.660	Ecosystem of New Media (*Formerly Media Effects*)	(*3 credits*)
480.661	International Public Relations and Public Diplomacy	(*3 credits*)
480.662	Opinion Writing	(*3 credits*)
480.663	Integrated Marketing Communication	(*3 credits*)
480.665	Speech Writing	(*3 credits*)
480.668	Understanding Markets and Audiences	(*3 credits*)
480.669	Emergency and Risk Communication	(*3 credits*)
480.678	Spokesperson Development and Training	(*3 credits*)
480.681	Communication Evalutation	(*3 credits*)
480.685	Argument & Public Address	(*3 credits*)

Political Communication

The concentration in political communication addresses issues from campaign strategies to running a press office to influencing public policy. Whether people are governing, running for office, or pushing for policy change, communication lies at the heart of politics.

Students must complete at least three of the following electives

480.623	Political Communication Campaigns	(*3 credits*)
480.624	Press Secretary: Theory and Practice	(*3 credits*)
480.632	Digital Political Strategy	(*3 credits*)
480.658	Public Relations Writing	(*3 credits*)
480.659	Crisis Communication	(*3 credits*)
480.661	International Public Relations and Public Diplomacy	(*3 credits*)
480.662	Opinion Writing	(*3 credits*)
480.665	Speech Writing	(*3 credits*)

480.670	Law for Communication Professionals	*(3 credits)*
480.671	Government Relations and Lobbying	*(3 credits)*
480.672	Polling for Strategic Communication	*(3 credits)*
480.675	Public Policy Management and Advocacy	*(3 credits)*
480.677	Grassroots Communication	*(3 credits)*
480.678	Spokesperson Development and Training	*(3 credits)*
480.685	Argument & Public Address	*(3 credits)*

Health Communication

The concentration in health communication covers how to develop and evaluate effective public information campaigns, how to manage the demands placed on communication specialists during a crisis, and how to incorporate behavior change messages into a variety of channels and genres, such as entertainment. Health communication professionals must develop, deliver, and evaluate modern health communication programs. This concentration explores what has been done, what works, and why.

Students must complete at least three of the following electives:

480.645	Health Literacy, Language and Culture	*(3 credits)*
480.653	Communicating for Social Change	*(3 credits)*
480.654	Strategic Communication Program Management	*(3 credits)*
480.659	Crisis Communication	*(3 credits)*
480.668	Understanding Markets and Audiences	*(3 credits)*
480.669	Emergency and Risk Communication	*(3 credits)*
480.670	Law for Communication Professionals	*(3 credits)*
480.681	Communication Evaluation	*(3 credits)*
480.682	Health Psychology and Behavior Change	*(3 credits)*
480.686	Behavior Change and Education Through Entertainment	*(3 credits)*
480.687	Intercultural Communication	*(3 credits)*

Digital Communication

The concentration in digital communication examines the strategic use of digital technologies for communication professionals. This concentration addresses how to use the Web and social media to reach out to diverse public groups and how to incorporate digital with traditional communication campaigns. Digital communication tools are an important part of the modern communication workplace.

Students must complete at least three of the following electives:

480.622	Branding by Motion Picture	*(3 credits)*
480.629	Public Relations in the Age of Digital Influence	*(3 credits)*
480.630	Multimedia Authoring	*(3 credits)*
480.631	Effective Web Design and Strategy	*(3 credits)*
480.632	Digital Political Strategy	*(3 credits)*
480.633	Interactive Marketing and Advertising	*(3 credits)*
480.634	Journalism and Publishing in the Digital Age	*(3 credits)*
480.635	Communication.org: Not-for-Profits in the Digital Age	*(3 credits)*

480.636	Web Writing and Content Strategy	*(3 credits)*
480.637	Using Social and Digital Media	*(3 credits)*
480.638	Utilizing Images: Media Literacy in Practice	*(3 credits)*
480.639	Advanced Social Media Management	*(3 credits)*
480.668	Understanding Markets and Audiences	*(3 credits)*
480.670	Law for Communication Professionals	*(3 credits)*
480.686	Behavior Change and Education Through Entertainment	*(3 credits)*

Corporate and Nonprofit Communication

The concentration in corporate and nonprofit communication examines all of the important components of communication in an organizational context. Students study how managers communicate with staff members effectively across the organization, how businesses and nonprofits communicate with the media, and how advertisers and marketers persuade potential consumers and donors. Successful organizations have solid internal and external communication strategies. Students must complete at least three of the following electives:

480.605	Organizational Communication	*(3 credits)*
480.635	Communication.org: Not-for-Profits in the Digital Age	*(3 credits)*
480.637	Using Social and Digital Media	*(3 credits)*
480.638	Utilizing Images: Media Literacy in Practice	*(3 credits)*
480.642	Corporate Social Responsibility Campaigns	*(3 credits)*
480.643	Branding and Advertising	*(3 credits)*
480.645	Health Literacy, Language and Culture	*(3 credits)*
480.646	Managerial Communication	*(3 credits)*
480.653	Communicating for Social Change	*(3 credits)*
480.654	Strategic Communication Program Management	*(3 credits)*
480.659	Crisis Communication	*(3 credits)*
480.660	Ecosystem of New Media	*(3 credits)*
480.663	Integrated Marketing Communication	*(3 credits)*
480.665	Speech Writing	*(3 credits)*
480.668	Understanding Markets and Audiences	*(3 credits)*
480.669	Emergency and Risk Communication	*(3 credits)*
480.670	Law for Communication Professionals	*(3 credits)*
480.671	Government Relations and Lobbying	*(3 credits)*
480.675	Public Policy Management and Advocacy	*(3 credits)*
480.677	Grassroots Communication	*(3 credits)*
480.681	Communication Evaluation	*(3 credits)*
480.687	Intercultural Communication	*(3 credits)*
480.688	Advanced Intercultural Communication	*(3 credits)*

Communication

Applied Research in Communication

The concentration in applied research prepares students to assess the research needs of a communication effort; design theory-based formative, process, and summative evaluation studies; execute quantitative and qualitative methods; analyze data using thematic, descriptive, and inferential approaches; and use results to plan and refine communication efforts.

Students must complete all of the following cores and electives:

480.608	Analytic Techniques in Communication Research	
		(3 credits)
480.609	Applied Qualitative Research	*(3 credits)*
480.681	Communication Evaluation	*(3 credits)*
480.804	Practicum	*(3 credits)*

Post-Baccalaureate Certificate in Applied Research in Communication

advanced.jhu.edu/appliedresearch

The Post-Baccalaureate Certificate in Applied Research in Communication is for students who are working in or pursuing a wide variety of jobs. For example, a vice president of strategic planning and research at a public relations firm may manage studies that help communication clients identify target audiences, set campaign objectives, create messages, and identify channels. A market research director at a trade association may oversee research for brand, product, and business development as well as marketing, advertising, and social media evaluation. A senior behavioral scientist at a federal health agency may lead formative, process, and summative evaluation to plan and refine health communication and social marketing campaigns. A lead policy analyst at anadvocacy firm may supervise studies that guide communication about lobbying policy and reform. A research manager at a corporation may collect data, draw insights, and make recommendations that work toward business objectives. Students and alumni have access to our exclusive job opportunities network and career services center.

Read more about the Post-Baccalaureate Certificate in Applied Research in Communication program and start an application online at advanced.jhu.edu/appliedresearch, or contact us at 202-663-5776.

CERTIFICATE

The Post-Baccalaureate Certificate in Applied Research in Communication requires five courses. Students can enroll part time and thus earn the certificate within one year, or take up to five years.

APPLICATION

Individuals who wish to apply for the Post-Baccalaureate Certificate in Applied Research in Communication program must do so through Advanced Academic Programs. (The Admissions Committee reserves the right to request additional information from applicants, if needed, to assess their candidacy for admission. All application materials submitted to Advanced Academic Programs become the property of the Johns Hopkins University and will not be returned to applicants under any circumstances.)

Prerequisites

Prospective students must hold a bachelor's degree with a minimum grade-point average of 3.0 prior to enrolling in the Post-Baccalaureate Certificate in Applied Research in Communication program.

PROGRAM COMMITTEE

Brad Leithauser   Program Chair

Taylor Hahn   Program Director

Communication

Application Requirements

> AAP application

> Nonrefundable application fee

> Resume: Include any part- or full-time work, internships, and volunteer history. Detail any responsibilities related to communication and research.

> Statement of purpose: Explain why you are interested in earning the Post-Baccalaureate Certificate in Applied Research in Communication and how it will help your career. Double space your essay and limit it to 500 words or less (place the word count at the end of the document).

> Writing sample: Please go to the online application to download instructions and an article for your writing sample. This exercise asks you to write a single, brief paragraph. It should not take the form of a larger document, such as a letter, an email, a report, or a plan. Submit one paragraph with no more than 250 words.

> Two recommendations: Professors or supervisors should verify academic and professional accomplishments. The department prefers that they complete the AAP recommendation form rather than provide a letter.

> Official transcripts: They should show all undergraduate and graduate course work completed within the U.S. only. (We accept official transcripts sent electronically through Scrip-Safe or Docufide, or in sealed institutional envelopes. If a transcript comes in a sealed envelope, it must be dated within the past three months.)

> GRE scores, if necessary: The program waives this requirement for applicants who have (a) a cumulative undergraduate GPA of 3.0 or higher or (b) five or more years of full-time work experience after earning an undergraduate degree. Submit results directly to the Advanced Academic Programs Office of Admissions, using the code 8747. Photocopies will not be accepted.

International Students

> Foreign credential evaluation: Students who earned their postsecondary degree(s) in a country other than the U.S. are required to have a "course-by-course" credential evaluation with GPA performed by an outside evaluation service. Study abroad may be exempt.

> TOEFL or IELTS scores: International students who have not graduated from an accredited college or university in the U.S. and whose native language is not English must take the Test of English as a Foreign Language (TOEFL) or International English Language Testing System. Submit results directly to the Advanced Academic Programs Office of Admissions, using the code 8747. Photocopies will not be accepted. For the TOEFL, AAP requires a minimum score of 600 on the paper test, 250 on the computer-based test, and 100 on the Internet-based test. AAP requires an IELTS bandscore of 7.0.

Student Status

At the time of admission, students fall under one of the following statuses: degree or conditional. Degree candidates fulfill all academic requirements at the time of application. Conditional students are in their last semester of undergraduate study at the time of application and must submit an official transcript verifying degree conferral prior to registering for their second semester.

Student Visas

The Post-Baccalaureate Certificate in Applied Research in Communication is part time and online, thus international students cannot request certification for an F-1 visa.

CURRICULUM

The Post-Baccalaureate Certificate in Applied Research in Communication will help students acquire the knowledge and skills necessary to achieve the following learning outcomes:

1. Assess the research needs of a communication effort.

2. Design theory-based formative, process, and summative evaluation studies.

3. Execute quantitative and qualitative methods.

4. Analyze data using thematic, descriptive, and inferential approaches.

5. Use results to plan and refine communication efforts.

Students must take a total of five courses. All are online. The courses are a mix of required, core, and elective.

Required Courses

One of the five courses is required. Students who earn a C or below in a required course must repeat that course. The required is as follows:

480.600   **Research and Writing Methods:** Students must complete this course during their first semester and before enrolling in any core courses.

Core Courses

Three of the five courses are cores. Students who earn a C or below in a core course may not count that course toward core requirements. The cores are as follows:

480.608   **Applied Quantitative Research:** Students can complete this course during their second through last semesters.

480.609   **Applied Qualitative Research:** Students can complete this course during their second through last semesters.

480.804   **Practicum:** Students must take either 480.608   Applied Quantitative Research or 480.609   Applied Qualitative Research before enrolling in 480.804 Practicum, which they must complete during their last semester.

Electives

One of the five courses is an elective. It is as follows:

480.681   **Communication Evaluation:** Students can complete this course during their first through last semesters.

Students who start the Post-Baccalaureate Certificate in Applied Research in Communication program can switch to the Master of Arts in Communication program. Moreover, they can apply all of their certificate courses toward the master's degree. To learn more about the MA in Communication, go to communication.jhu.edu.

Master of Arts in Communication/ Master of Business Administration

Dual Degree Program with the Carey Business School

advanced.jhu.edu/commba

Leaders in business and industry recognize the importance of communication, but few MBA programs offer communication courses. At the same time, communication professionals recognize the importance of good business practices, but programs rarely offer courses in business. The Master of Arts in Communication/Master of Business Administration dual degree program was developed to fill that need. It helps advance the careers of managers in public and media relations, advertising, crisis communication, organizational development, and risk communication. Students and alumni have access to our exclusive job opportunities network and career services center.

DEGREE

Dual Master of Arts in Communication/ Master of Business Administration

The university allows students to simultaneously pursue a Master of Arts in Communication in the School of Arts and Sciences and a Master of Business Administration at the Carey Business School. To pursue these dual degrees, students must apply and be accepted to both programs. Students who successfully complete the requirements for both degrees will receive two separate degrees. Students may complete one degree first and be awarded the diploma before continuing with the second degree, or strive toward both degrees concurrently. Pending graduates must complete the graduation application for each school. Dual-degree students may participate in both commencement exercises.

APPLICATION

Individuals who wish to apply for the dual MA in Communication/MBA program must apply through Advanced Academic Programs. They can apply to both programs concurrently, or they can start with one program and then apply for the dual degree by submitting an application to the second program through the AAP Admissions Office. The MA in Communication program will consider applicants for the MA in Communication portion of the degree, while the MBA program will consider applicants for the MBA portion of the degree. An individual can be accepted by one rather than both programs; in this case, that person can decide whether to enroll in the single program. (The Admissions Committees reserve the right to request additional information from applicants, if needed, to assess their candidacy for admission. All application materials submitted to Advanced Academic Programs become

MA IN COMMUNICATION PROGRAM COMMITTEE

Brad Leithauser	Program Chair
Taylor Hahn	Program Director

the property of the Johns Hopkins University and will not be returned to applicants under any circumstances.)

Prerequisites

Prospective students must hold a bachelors degree with a minimum grade-point average of 3.0 prior to enrolling in the MA in Communication/MBA program.

Application Requirements

All Students

> AAP application

> Nonrefundable application fee

> Resume: Include any part- or full-time work, internship, and volunteer history. Detail any responsibilities related to communication or business.

> Statement of purpose: Explain why you are interested in earning the dual MA in Communication/MBA and how it will help your career. Double space your essay and limit it to 500 words or less (place the word count at the end of the document).

> Writing sample: Please go to the online application to download instructions and an article for your writing sample. This exercise asks you to write a single, brief paragraph. It should not take the form of a larger document, such as a letter, an email, a report, or a plan. Submit one paragraph with no more than 250 words.

> Two recommendations: Professors or supervisors should verify academic and professional accomplishments. The departments prefer that they complete the AAP recommendation form rather than provide a letter.

> Official transcripts: They should show all undergraduate and graduate course work completed within the U.S. only. (We accept official transcripts sent electronically through Scrip-Safe or Docufide, or in sealed institutional envelopes.

Communication

Communication

If a transcript comes in a sealed envelope, it must be dated within the past three months.)

> The MA in Communication and MBA programs have different requirements for GRE or GMAT scores:

The MA in Communication program may require GRE scores. The program waives this requirement for applicants who have (a) a cumulative undergraduate GPA of 3.0 or higher or (b) five or more years of full-time work experience after earning an undergraduate degree. Submit results directly to the Advanced Academic Programs Office of Admissions, using the code 8747. Photocopies will not be accepted.

The MBA program may require the GMAT or GRE scores. A waiver from these exams may be approved if a candidate has:

- Completed a graduate degree and can demonstrate quantitative ability through coursework of B or better in statistics, corporate finance or microeconomics.

- Completed an undergraduate degree and has at least five years of professional experience. Applicant has also taken at least one course in statistics, corporate finance and microeconomics, and earned a B or better and earned an overall GPA of 3.0 or better.

- Holds a professional designation, such as CPA or CFA.

International Students

> Foreign credential evaluation: Students who earned their postsecondary degree(s) in a country other than the U.S. are required to have a "course-by-course" credential evaluation with GPA performed by an outside evaluation service. Study abroad may be exempt.

> TOEFL or IELTS scores: International students who have not graduated from an accredited college or university in the U.S. and whose native language is not English must take the Test of English as a Foreign Language or International English Language Testing System. Submit results directly to the Advanced Academic Programs Office of Admissions, using the code 8747. Photocopies will not be accepted. For the TOEFL, AAP requires a minimum score of 600 on the paper test, 250 on the computer-based test, and 100 on the Internet-based test. AAP requires an IELTS band score of 7.0.

Student Status

At the time of admission into the MA in Communication program, students fall under one of the following statuses: degree, provisional, or conditional. Degree candidates fulfill all academic requirements at the time of application. In contrast, provisional students do not meet the requirements but demonstrate promise toward completing the MA in Communication program; therefore, they must pass a

prerequisite course before being able to request a change of status from provisional student to degree candidate. Conditional students are in their last semester of undergraduate study at the time of application and must submit an official transcript verifying degree conferral prior to registering for their second semester.

Student Visas

International students who have been admitted as degree, provisional, or conditional candidates and who take at least three courses per semester, which is full-time classification, may request certification for an F-1 visa. Students for whom this may be a possibility should indicate "Yes" on their admissions application at the appropriate check box regarding initiating the visa process. The Admissions Office of Advanced Academic Programs will assist in the certification process (aapinfo@ jhu.edu), which the student must complete with the Office of International Student and Scholar Services.

MA IN COMMUNICATION CURRICULUM

The curriculum of the MA in Communication program portion of the dual degree is the same as that of the MA in Communication program. Refer to the latter's section of the catalogue for detail.

MBA CURRICULUM

Students must take the following courses. All courses are two credits, with the exception of Strategic Management.

120.601	Business Communication*
121.610	Negotiation*
131.601	Leadership Ethics Seminar*
132.601	Business Law*
142.620	Leadership in Organizations*
142.730	Strategic Human Capital*
210.620	Accounting and Financial Reporting*
220.610	The Firm and the Macroeconomy*
220.620	Economics for Decision Making*
231.620	Corporate Finance*
232.701	Investments*
350.620	Information Systems*
410.620	Marketing Management*
510.601	Statistical Analysis*
520.601	Decision Models*
680.620	Operations Management*

Five Carey electives

*Not an AAP course. Please refer to partner JHU school/ division for credit information.

Master of Arts in Communication/Certificate in Nonprofit Management

Combined Program

Professionals with sharpened skills in the social science of communication will be able to apply those skills to mission-driven nonprofit organizations. Upon graduating from the combined program, individuals will be well prepared to lead their nonprofit employers in designing and implementing communication campaigns that promote reforms in public policy, mobilize constituencies to lobby their elected officials, advance their goals through public and media relations, or change behaviors in ways that improve the health, well-being, and public safety of all. Even if students pursue careers in the corporate or public sectors, they are highly likely to interact with nonprofit or nongovernmental organizations, or serve on nonprofit boards of directors. All of these roles require an understanding of the impact of nonprofits in the U.S. and other countries, and the principles and challenges of managing them, including what it means to supervise a volunteer workforce and raise money through the generosity of others.

DEGREE

Combined Master of Arts in Communication/ Certificate in Nonprofit Management

The university allows students to simultaneously pursue a Master of Arts in Communication and Certificate in Nonprofit Management in the School of Arts and Sciences. To enroll in both programs, students must apply and be accepted to both programs. Students who successfully complete the requirements in both programs will receive two separate documents—a communication diploma and nonprofit certificate. Students may complete one program first before continuing with the second program or be in both programs concurrently. Pending graduates must complete the graduation application for each school. Students who finish the combined program participate in a single commencement ceremony.

APPLICATION

Individuals who wish to apply for the combined MA in Communication/Certificate in Nonprofit Management program must apply through Advanced Academic Programs. They can apply to both programs concurrently, or they can start with one program and then apply for the combined program by submitting an application to the second program through the AAP Admissions Office. The MA in Communication program will consider applicants for the MA in Communication portion, while the Certificate in Nonprofit Management program

MA IN COMMUNICATION/CERTIFICATE PROGRAM COMMITTEE

Taylor Hahn
Program Director Communication

Karin Orr
Program Coordinator Nonprofit Management

will consider applicants for the Certificate in Nonprofit Management portion. An individual can be accepted by one rather than both programs; in this case, that person can decide whether to enroll in the single program. (The Admissions Committees reserve the right to request additional information from applicants, if needed, to assess their candidacy for admission. All application materials submitted to the Advanced Academic Programs become the property of the Johns Hopkins Universityand will not be returned to applicants under any circumstances.)

Prerequisites

Bachelor's degree from a regionally accredited U.S. college or university with a minimum grade-point average of 3.0 (or the equivalent from outside the U.S.).

Application Requirements

All Students

> AAP application

> Nonrefundable application fee

> Resume: Include any part- or full-time work, internship, and volunteer history. Detail any responsibilities related to communication and nonprofit management.

> Statement of Purpose: Explain why you are interested in entering the MA in Communication and Certificate in Nonprofit Management combined program, and how it will help your career or other goals. Double space your essay and limit it to 500 words or fewer (place the word count at the end of the document).

> Writing Sample: Effective for summer 2015 and beyond, applicants to the MA in Communication program must submit a writing sample. Please click here to download

the instructions and article for your writing sample. This exercise asks you to write a single, brief paragraph. It should not take the form of a larger document, such as a letter, an email, a report, or a plan. Submit one paragraph with no more than 250 words.

> Recommendations: Include the contact information for two recommenders. Professors or supervisors should verify academic and professional accomplishments. They will be automatically emailed access information to the system. They can then complete and upload their recommendation form and letter.

> Official transcripts: For U.S. graduates, transcripts should show all undergraduate and graduate course work completed within the U.S. only. (We accept official transcripts sent electronically through Scrip-Safe or Docufide, or in sealed institutional envelopes. If a transcript comes in a sealed envelope, it must be dated within the past three months.)

> GRE scores: The MA in Communication and Certificate in Nonprofit Management programs have different requirements for GRE scores:

The MA in Communication program may require GRE scores. The program waives this requirement for applicants who have a cumulative undergraduate GPA of 3.0 and higher or at least five years of full-time work experience after completing college. Submit results directly to the Advanced Academic Programs Office of Admissions, using the code 8747. Photocopies will not be accepted.

The Certificate in Nonprofit Management program does not require GRE scores.

International Students

> Foreign credential evaluation: Students who earned their postsecondary degree(s) in a country other than the U.S. are required to have a "course-by-course" credential evaluation with GPA performed by an outside evaluation service. Study abroad may be exempt.

> TOEFL or IELTS scores: International students who have not graduated from an accredited college or university in the U.S. and whose native language is not English must take the Test of English as a Foreign Language or International English Language Testing System. Submit results directly to the Advanced Academic Programs Office of Admissions, using the code 8747. Photocopies will not be accepted. For the TOEFL, AAP requires a minimum score of 600 on the paper test, 250 on the computer-based test, and 100 on the Internet-based test. AAP requires an IELTS band score of 7.0.

Student Status

At the time of admission, students will fall under one of the following statuses: degree, provisional, conditional, or special. Degree candidates fulfill all academic requirements at the time of application. All degree candidates must take the course 480.600 Research & Writing Methods in the first semester of matriculation. Students may also take up to two elective courses in their first semester, but are cautioned against taking too many courses during the first semester of study.

Provisional students must take 480.603 Communication in Practice in their first semester of matriculation and pass with a grade of B or better in order to advance to degree candidacy. This course will count toward the MA in Communication degree as an elective. Once this course is passed satisfactorily, a change of status from provisional student to degree candidate must be submitted by the student to the Registrar. Students may take one additional elective course along with Communication in Practice. If a provisional student does not earn a grade of a B or better in Communication in Practice, the student will be dismissed from the program.

Conditional students that are in their last semester of undergraduate study at the time of application and must submit an official transcript verifying degree conferral prior to registering for their second semester.

Special students qualify as degree candidates but wish to take fewer than the 10 courses required for conferral of the Master of Arts in Communication.

Student Visas

International students who have been admitted as degree, provisional, or conditional candidates, and who take at least three courses per semester, which is full-time classification, may request certification for an F-1 visa. Students for whom this may be a possibility should indicate "Yes" on their admissions application at the appropriate check box regarding initiating the visa process. In order to maintain status on an F-1 visa, students in AAP must be enrolled in a minimum of three courses per semester, one of which can be an online course. The students must complete their certification process with the Office of International Services. For more information, international applicants should refer to the International Applicants webpage: *advanced.jhu.edu/students/international-students.*

MA IN COMMUNICATION CURRICULUM

Students must complete 10 courses under the MA in Communication program. Courses are offered in Washington, D.C. and online. Refer to the MA in Communication section of the catalog to learn more about the program's requirements.

Students must pass 480.600 Research and Writing Methods under the MA in Communication program before they can start taking courses under the Certificate in Nonprofit Management program.

The combined MA in Communication/Certificate in Nonprofit Management program enables students to reduce their course load. If students were to complete the two programs separately, they would complete a total of 16 courses. Yet students in the combined program take a total of 14 courses, by ensuring that they take the following courses under the MA in Communication program:

480.602   Changing Behavior Through Communication, a core course from the Informing Practice Through Research Group.

At least one of the following electives:

480.635	Communication.org: Not-for-Profits in the Digital Age	*(3 credits)*
480.653	Communicating for Social Change	*(3 credits)*
480.654	Strategic Communication Program Management	*(3 credits)*
480.671	Government Relations and Lobbying	*(3 credits)*
480.675	Public Policy Management and Advocacy	*(3 credits)*
480.677	Grassroots Communication	*(3 credits)*

CERTIFICATE IN NONPROFIT MANAGEMENT CURRICULUM

Students must complete four courses under the Certificate in Nonprofit Management program. Courses are offered online.

470.623   Nonprofit Program Development and Evaluation *(3 credits)*

470.625   Resource Development and Marketing in Nonprofits *(3 credits)*

470.666   Institutional Fundraising: Raising Maximum Dollars from Government Agencies, Corporations & Foundations *(3 credits)*

470.682   Mission Meets Profit: An Exploration and Building of a Social Enterprise *(3 credits)*

470.689   NGOs in Development and Global Policy-Making (Formerly Overview of Global Public and Nonprofit Relationship) *(3 credits)*

470.728   Fundamentals of Nonprofits and Nonprofit Management *(3 credits)*

470.774   Nonprofit Governance and Executive Leadership *(3 credits)*

470.789   INGO/NGOs and Civil Society in Conflict Zones *(3 credits)*

470.798   Financial Management and Analysis in Nonprofits *(3 credits)*

Courses 470.728 and 470.798 are offered every semester, all other electives are offered only once per academic year. Please check with your adviser on when select electives are offered. Refer to the Certificate in Nonprofit Management section of the catalog to learn more about the program's requirements.

Communication

Master of Science in Energy Policy and Climate

energy.jhu.edu

Energy Policy and Climate

The MS in Energy Policy and Climate program will prepare the next generation of interdisciplinary professionals to address the challenges of climate change and aglobal transition to energy systems.

Graduates will be able to demonstrate an understanding of the science related to a changing climate, the impacts of current and future climate change on natural and human systems, the vulnerabilities of these systems to predicted changes, and a variety of possible legal, policy, and technological strategies for mitigation and adaptation. Graduates will also develop a comprehension of energy production, delivery, and consumption for both traditional systems and sustainable/renewable energy alternatives, and the implications of our energy choices for averting dangerous levels of climate change.

The program was originally designed by members of JHU's Department of Earth and Planetary Sciences in the Krieger School of Arts and Sciences and by industry and policy specialists. Courses are taught by distinguished instructors with valuable experience in the academic, public, corporate, and nonprofit sectors. The program seeks to build in students the technical and management skills needed to become highly competent and ethical professionals capable of leading societal responses to the challenges of a changing climate and the quest for a revolution in energy production. The curriculum is designed to help students develop an understanding of policy strategies employed at all levels, from the local to the international level, in response to these challenges. Graduates of the program will have an understanding of the current state of the U.S. response to climate change, as well as a familiarity with multilateral agreements and non-U.S.-based approaches to both mitigations of and adaptation to climate change. Additionally, students will develop expertise in energy production and policymaking.

PROGRAM OBJECTIVES

Graduates will be able to demonstrate:

> Understanding of the scientific principles that explain current and projected changes in climate and the role of humans in this process

> Knowledge of the impacts of current and future climate change on natural and human systems, the vulnerabilities of these systems to predicted changes, and a variety of possible strategies for adaptation

> Comprehension of the principles and applications of energy technologies for the mitigation of and adaptation to climate change

PROGRAM COMMITTEE

Tom Haine
Morton K. Blaustein Professor and Chairman of Earth and Planetary Sciences

Daniel S. Zachary
Program Director, Energy Policy and Climate Program

Jennifer da Rosa
Program Coordinator, Energy Policy and Climate Program

Benjamin F. Hobbs
Theodore M. and Kay W. Schad Professor of Environmental Management

Michael Mehling
Executive Director of the Center for Energy and Environmental Policy Research, Massachusetts Institute of Technology

Darryn Waugh
Professor of Earth and Planetary Sciences

> Business and management skills for designing and implementing carbon constraint policies and carbon offset structures

> Understanding of policy options being considered at the local, state and national level, including both regulatory and market-based approaches, for addressing long-term climate change

> Knowledge of multilateral agreements and non-U.S.-based approaches to mitigate and adapt to climate change

ADMISSION REQUIREMENTS

In addition to the materials and credentials required for all programs (see Admission Requirements), the Master of Science in Energy Policy and Climate program requires:

> A grade-point average of at least 3.0 on a 4.0 scale in the latter half of undergraduate studies. Work experience or other demonstration of expertise may also be considered in the admissions process.

> One semester of undergraduate calculus and one semester of undergraduate statistics

> One semester of undergraduate chemistry or equivalent thereof

It is highly desirable, but not required, that applicants have taken one semester of undergraduate microeconomics or equivalent thereof.

Students who do not have the necessary undergraduate training in calculus, statistics or chemistry may be offered provisional admission if their other credentials are strong.

Students who are admitted provisionally due to lack of quantitative skills have the option to:

1. Take appropriate courses at an accredited college/university.
2. Take 420.301 Quantitative Methods for Environmental Sciences.
3. Pass a math placement test, administered by the EPC program.

Students who are admitted provisionally due to lack of training in chemistry have the option to:

1. Take one semester of general chemistry at an accredited college or university.
2. Take 420.302 Chemistry of Natural Processes.
3. Pass a chemistry placement test, administered by the EPC program.

Admissions Documents

> AAP application and fee

> A current résumé or CV

> A statement of purpose (500 words) addressing why at this time in your career you want to pursue this graduate degree and why at JHU

> Two letters of recommendation, preferably including one academic reference

> Official undergraduate and graduate transcripts

Provisional Student

Provisional Student Provisional students are admitted to this status because, in the view of the admissions committee, they do not fulfill all academic requirements for admission as a degree candidate at the time of the application. Provisional students may be required to take specific prerequisite courses, and/or take a specific number of graduate-level courses and complete them successfully in order to establish their eligibility to be admitted as a degree candidate. During the time of this provisional status, students are held to grading criteria stricter than those required of degree candidates (see Grading System, Requirements). Specifics of a provisional admission are outlined in a formal admissions letter mailed to the student. All listed criteria must be met for a student to continue to enroll in courses.

Math Test

Those provisional students who are required to take 420.301 Quantitative Methods for Environmental Sciences (see Prerequisite Courses below), may choose to take a mathematics assessment test. If successfully passed, provisional students place out of the prerequisite. This test is administered online and can be done at the student's convenience on any working day. After a student is admitted, he/ she may make an appointment to take the test and/or to obtain relevant study materials by reaching the EPC Program Director at d.s.zachary@jhu.edu. Students can also obtain relevant practice materials at *advanced.jhu.edu/academics/graduate-degree-programs/environmental-sciences-and-policy/program-resources/practice-math-questions/*.

Chemistry Test

Those provisional students who are required to take 420.302 Chemistry of Natural Processes (see Prerequisite Courses below), may choose to take a chemistry assessment test. If successfully passed, provisional students place out of the prerequisite. This test is administered online and can be done at the student's convenience on any working day. After a student is admitted, he/ she may make an appointment to take the test and/or to obtain relevant study materials by reaching the EPC Program Director at d.s.zachary@jhu.edu.

Special Students

Students admitted to the program as special students follow the guidelines provided elsewhere in this catalog and by the admissions office may count no more than two courses toward the degree should they apply and be admitted to the program a degree-seeking student.

PROGRAM REQUIREMENTS

Prerequisite courses

Provisional students who have not fulfilled the required courses for admission are required to complete one or more of the following prerequisites:

420.301   Quantitative Methods for Environmental Sciences
(3 credits)
Provisional students may also take appropriate undergraduate-level courses at an accredited university or successfully pass the math assessment test to fulfill this prerequisite. Provisional students should discuss these options with their adviser.

420.302 Chemistry of Natural Processes *(3 credits)*
Provisional students may also fulfill this prerequisite by taking one semester of general chemistry at an accredited university. Provisional students should discuss these options with their adviser.

Program Course work

> Four core courses
> Five electives
> Capstone project

For more information about core and elective courses, please review the following pages. Please note that not all courses are offered every semester, and the energy policy and climate course schedule should be consulted for current classes and times. Core courses are offered at least every other semester.

Electives should be chosen in consultation with the student's adviser and should accommodate individual career goals. Students may also consider taking related courses in other divisions of the graduate programs in AAP, including Environmental Sciences and Policy, Geographic Information Systems, Government Studies, or Applied Economics, as well as pertinent courses in other units of the Krieger School of Arts and Sciences; the schools of Engineering, Public Health, Business, or Education; or the School of Advanced International Studies (see Registering for Courses in Other Divisions/ Programs). Students are permitted, with the written consent of the director of the program, to take up to two pertinent courses outside of the energy policy degree.

Please refer to the Advanced Academic Programs course schedule for exact dates,times, locations, fees, and instructors.

CORE COURSES

The core courses introduce the relevant body of knowledge in science and policy upon which students will base their studies. Some students may have covered most of the material of one or more of thecore courses in previous academic work or through pertinent work experience. Such students should consider requesting that the appropriate core course(s) be waived (see Student Special Requests).

If approved, the waived core course must then be replaced with an additional elective. The core courses can be taken in any order, although it is recommended that students begin with 425.601 Principles and Applications of Energy Technologies. Students must complete fulfillment of the four core courses within the first seven courses in the program toward their degree.

425.601   Principles and Applications of Energy Technology *(3 credits)*

425.602   Science of Climate Change and Its Impact *(3 credits)*

Choose two of the following three:

425.603	Climate Change Policy Analysis	*(3 credits)*
425.604	Energy & Climate Finance	*(3 credits)*
425.605	Introduction to Energy Law & Policy	*(3 credits)*

ELECTIVES

Choose five of the following.

425.615   Understanding Public Attitudes and Behaviors for the Communication of Climate and Energy Policy. *(3 credits)*
425.619   Renewable Energy and Climate Change Projects in California   *(3 credits)*
425.621   Renewable Energy and Climate Change Projects in Austrailia   *(3 credits)*
425.622   Renewable Energy and Proactive Climate Change in Benelux *(3 credits)*
425.623   Transportation Policy in a Carbon-Constrained World *(3 credits)*
425.624   Wind Energy: Science, Technology and Policy *(3 credits)*
425.625   Solar Energy: Science, Technology & Policy *(3 credits)*
425.626   Alternative Fuels: Science, Technology & Policy *(3 credits)*
425.628   Renewable Energy Project Development and Finance *(3 credits)*
425.629   Energy Efficiency: Demand Side Options   *(3 credits)*
425.630   Cities and Climate Change   *(3 credits)*
425.634   Climate Change and Health   *(3 credits)*
425.635   Climate Modeling Techniques *(3 credits)*
425.637   International Climate Change Policy *(3 credits)*
425.638   Adaptation to Climate Change *(3 credits)*
425.640   The Future of the U.S. Electric System in a Carbon-Constrained World *(3 credits)*
425.641   Carbon Capture and Storage *(3 credits)*
425.644   Principles & Applications of Energy Technology II *(3 credits)*
425.645   Global Energy Policy *(3 credits)*
425.646   U.S. Offshore Energy: Policy, Science and Technology *(3 credits)*
425.647   Energy and Water Security in South Asia *(3 credits)*

Capstone

425.800   Capstone Project in Energy Policy and Climate *(3 credits)*

Suggested Electives From Environmental Sciences and Policy

420.608   Oceanic and Atmospheric Processes *(3 credits)*

420.645   Environmental Challenges for Energy Policy *(3 credits)*

420.649   Strategic Management for Sustainability *(3 credits)*

420.651   Risk Assessment and Risk Management *(3 credits)*

420.654   Environmental and Resource Economics *(3 credits)*

420.656   Environmental Impact Assessment and Decision Methods *(3 credits)*

420.657   Environmental Issues and Congressional Policymaking *(3 credits)*

420.659   Management for Environmental Results with Performance-Based Measurement *(3 credits)*

420.665   Climate Change at the Front Lines: The Study of Adaptation in Developing Countries *(3 credits)*

Suggested Electives from Geographic Information Systems

430.601   Geographic Information Systems (GIS) *(4 credits)*

430.602   Remote Sensing: Earth Observing Systems and Applications. *(4 credits)*

Suggested Electives from Global Security Studies

470.734   Energy, Vulnerability, and War *(3 credits)*

470.773   Energy and Environmental Security *(3 credits)*

Electives from Other Johns Hopkins University Divisions

575.710   Financing Environmental Projects*

575.723   Sustainable Development and Next Generation Buildings*

Master of Science in Environmental Sciences and Policy

environment.jhu.edu

Climate change, population growth, energy consumption, habitat loss, water depletion and degradation, air pollution, and species extinction have increasingly come to the fore in minds of citizens around the world. To manage the Earth's environment effectively, there is a need to understand the processes that shape the planet's surface, that control the chemistry of its air and water, and that generate the natural resources on which humans depend. Our unique program is distinct in its focus on the interplay between science and policy. This program is founded on the premise that rational solutions to complex, twenty first century environmental challenges require an in-depth understanding of applicable scientific principles and an appreciation for relevant political, ethical, economic, legal, and historical contexts. Graduates of the program develop combined expertise in science and policy that empowers them to become change agents and leaders in public and private organizations responsible for safeguarding our environment. Many of the program's students are currentlyemployed in environmental fields but wish to enhance their knowledge or move in new directions. Others seek to transition into the arena of environmental science and policy.

The program offers a flexible curriculum that allows students to customize their academic experience to suit their personal needs and interests. Courses are focused onwide ranging issues such as imperiled global ecosystems, natural resources economics and multinational environmental trusts and laws. The program is open to students with limited scientific background as well as those that already have a background in the environmental sciences. Core course work includes geology, hydrology, oceanography, meteorology, ecology, geographic information systems (GIS), and policymaking. Electives range across a spectrum from courses strongly oriented toward policy to ones focused more heavily on science. Electives are selected by students under the guidance of advisers.

The program was originally designed by members of the Department of Earth and Planetary Sciences at Johns Hopkins, in conjunction with experts in applied science at regional and federal institutes and agencies. Courses are taught by distinguished instructors with valuable experience in the academic, public, and corporate sectors. Many of the program's alumni are highly successful professionals. Taking a holistic approach, curricula in the Environmental Sciences and Policy (ESP) program positions students to join and contribute to the global science community.

PROGRAM COMMITTEE

Tom Haine
Program Chair, Environmental Sciences and Morton K. Blaustein Professor and Chairman of Earth and Planetary Sciences

Jerry Burgess
Director, Environmental Sciences and Policy and GIS Programs

Jennifer da Rosa
Program Coordinator, Environmental Sciences and Policy Program

David Elbert
Associate Research Scientist, Earth and Planetary Sciences

Alexios Monopolis
Sr. Lecturer, Global Environmental Change and Sustainability Major, Department of Earth and Planetary Sciences

Katalin Szlavecz
Associate Research Professor, Earth and Planetary Sciences

David Curson
Director, Audubon Society, DC-MD

Michael Shelby
Chief Economist, Transportation and Climate Division, Office of Transportation and Air Quality, U.S. EPA.

ADMISSION REQUIREMENTS

In addition to the materials and credentials required for all programs (see AAP Admission Requirements), the Master of Science in Environmental Sciences and Policy program normally requires:

> A grade-point average of at least 3.0 on a 4.0 scale in the latter half of undergraduate studies.

> One semester of undergraduate calculus, statistics and general chemistry

Students who do not have the necessary undergraduate training in calculus, statistics, or chemistry may be offered provisional admission if their other credentials are strong.

Students who are admitted provisionally due to lack of quantitative skills have the option to:

1. Take appropriate courses at an accredited college/university (courses must be approved by the academic adviser)
2. Take 420.301 Quantitative Methods for Environmental Sciences.

Students who are admitted provisionally due to lack of training in chemistry have the option to:

1. Take one semester of general chemistry at an accredited college or university
2. Take 420.302 Chemistry of Natural Processes.

Admissions Documents

> AAP application and fee

> A current résumé or CV

> A statement of purpose (500 words) addressing why at this time in your career you want to pursue this graduate degree and at JHU.

> Two letters of recommendation, preferably one academic reference

> Official undergraduate and graduate transcripts

Provisional Student

Provisional students are admitted to this status because, in the view of the admissions committee, they do not fulfill all academic requirements for admission as a degree candidate at the time of the application. Provisional students may be required to take specific prerequisite courses, and/or take a specific number of graduate-level courses and complete them successfully in order to establish their eligibility to be admitted as a degree candidate. During the time of this provisional status, students are held to grading criteria stricter than those required of degree candidates (see Grading System, Requirements). Specifics of a provisional admission are outlined in the formal admissions letter mailed to the student. All listed criteria must be met for a student to continue to enroll in courses.

Math and Chemistry Test

Those provisional students who are required to take 420.301 Quantitative Methods for Environmental Sciences or 420.302 Chemistry of Natural Processes (see Prerequisite Courses in the Course Descriptions section) may choose to take an assessment test. If successfully passed, provisional students will place out of the prerequisite. To take the test, please contact the Program Director (jerry.burgess@jhu.edu) or the Program Coordinator (jdarosa@jhu.edu).

Special Students

Students may be admitted to the ESP program as special students following the guidelines provided elsewhere in this catalog and administered by the admissions office. Special students in ESP may count no more than four courses toward the degree should they apply and be admitted to the program as a degree-seeking student.

Advanced Standing

Advanced Standing allows consideration for those who have graduate-level coursework from an accredited college or university to be exempt from taking up to two courses towards degree completion. To be considered for advanced standing, you must meet the following criteria:

> The courses for which advanced standing is desired must be the equivalent of one of our core courses, and have been taken in a masters program or higher in the natural sciences or a similar field of study.

The following materials are required and will need to be uploaded to your online application for each course:

> Syllabi or course catalogue description

MS IN ENVIRONMENTAL SCIENCES AND POLICY

Prerequisite Courses

The prerequisite courses below prepare provisional students for graduate work and do not count toward degree requirements. Students must be admitted as provisional in order to enroll in these courses.

420.301   Quantitative Methods   *(3 credits)*
420.302   Chemistry of Natural Processes *(3 credits)*

Program Course Work

> Five of the six core courses

> Five elective courses

> Capstone project (optional elective)

For more information about core and elective courses, please see the course descriptions at *advanced.jhu.edu*. Note: All electives are not offered every semester, and the mode of delivery (on-site or online) varies. It is very important that students consult the

environmental sciences and policy course schedule for specific class offerings and times by semester.

The six core courses to choose five from are:

420.601	Geological Foundations of Environmental Science *(3 credits)*	
420.603	Environmental Applications of GIS *(3 credits)*	
420.604	Hydrology & Water Resources *(3 credits)*	
420.608	Oceanic & Atmospheric Processes *(3 credits)*	
420.611	Principles & Methods of Ecology *(3 credits)*	
420.614	Environmental Policymaking and Policy Analysis *(3 credits)*	

Electives should be chosen in consultation with the student's adviser and should accommodate individual career goals. In order to customize the ESP experience, each student should choose electives that align with their scholarly and professional interests such as courses in environmental sustainability, monitoring, planning, or management. These electives may be chosen from any combination of the environmental sciences and policy offerings. Students may also consider related courses elsewhere in Advanced Academic Programs or in the schools of Engineering, Public Health, Advanced International Studies, Business, or Education (see Registering for Courses in Other Divisions/Programs). Students are permitted, with the written consent of the director of the program, to take up to two pertinent courses outside of the ESP degree. Please refer to the Advanced Academic Programs course schedule for exact dates, times, locations, fees, and instructors.

Residency Requirement

Many courses are offered online, but at least one course must be taken in an on-site classroom or as an in-person field course to fulfill the requirements of the degree. Students may choose to come to D.C. for a whole semester or opt for an intensive field course. These are offered throughout the year, but the majority are scheduled during the summer or in January. Compressed field courses require an additional fee and often include lodging, course transportation, and some food (this is variable). Students are responsible for travel to the location of their residency course. Note: The University does not have lodging facilities in D.C.

Capstone Project

The Capstone Project is *optional* ESP students. However, students in the MS in Environmental Sciences and Policy program with particular academic or professional interests, including those who are considering a PhD in the future, may wish to pursue independent research by completing an independent research project. This course is co-taught with the Energy, Policy and Climate program, 425.800, and is offered every fall and spring. Research must be original and bring a new perspective to a field or topic; it may include analysis of previously obtained data and overview and synthesis of published interpretations of such data or original primary researchin the field or lab. The general guidelines and timeline for the capstone course can be found on the ESP website (see Experience > Independent Research Project). Note: If the project involves human subjects, clearance from the Johns Hopkins Institutional Review Board may be necessary and should be planned for as this process can take additional time.

CORE COURSES

The core courses introduce the relevant body of knowledge in science and policy upon which students will base their studies. Some students may have covered most of the material of one or more of the core courses in previous academic work or through pertinent work experience. Such students should consider requesting that the appropriate core course(s) be waived (see Student Special Requests). If approved, the waived core course must then be replaced with an additional elective. The core courses can be taken in any order.

Students must complete five of the six core courses.

420.601	Geological Foundations of Environmental Science *(3 credits)*
420.603	Environmental Applications of GIS *(3 credits)*
420.604	Hydrology & Water Resources *(3 credits)*
420.608	Oceanic & Atmospheric Processes *(3 credits)*
420.611	Principles & Methods of Ecology *(3 credits)*
420.614	Environmental Policymaking and Policy Analysis *(3 credits)*

ELECTIVES

Students must complete five elective courses.

420.605	Maritime Law and the Environment *(3 credits)*
420.606	Climate Justice *(3 credits)*
420.607	Plant Biogeography *(3 credits)*
420.610	Sustainable Business *(3 credits)*
420.612	Sustainability Science: Concepts and Challenges *(3 credits)*
420.613	Forest Ecosystems: A Global Perspective *(3 credits)*
420.615	Environmental Restoration *(3 credits)*
420.616	Environmental Consequences of Conventional Energy Generation *(3 credits)*
420.618	Terrestrial and Marine Conservation Biology *(3 credits)*
420.620	Soils in Natural and Anthropogenic Ecosystems *(3 credits)*
420.622	Ecotoxicology *(3 credits)*
420.623	Freshwater Ecology and Restoration of Aquatic Ecosystems *(3 credits)*
420.625	Ecology and Ecosystem Management in Coastal and Estuarine Systems *(3 credits)*
420.626	Field Methods in Ecology *(3 credits)*
420.628	Ecology and Management of Wetlands *(3 credits)*
420.629	Drinking Water, Sanitation & Health *(3 credits)*
420.631	Field Methods in Stream and Water Quality Assessment *(3 credits)*
420.632	Air Quality Management and Policy *(3 credits)*
420.634	Bioremediation and Emerging Environmental Technologies *(3 credits)*
420.635	Integrated Water Resources Management *(3 credits)*

*Not an AAP course. Please refer to partner JHU school division for credit information.

Environmental Sciences and Policy

420.637 Conservation Biology and Wildlife Management
(3 credits)

420.638 Coastal Zone Processes and Policy *(3 credits)*

420.639 Landscape Ecology *(3 credits)*

420.641 Natural Resources Law and Policy *(3 credits)*

420.642 Public Lands-Private Interests: The Struggle for
Common Ground *(3 credits)*

420.643 US Environmental History *(3 credits)*

420.644 Sustainable Cities *(3 credits)*

420.646 Transportation Policy and Smart Growth *(3 credits)*

420.650   International Environmental Policy *(3 credits)*

420.651 Risk Assessment and Risk Management *(3 credits)*

420.652 Environmental Justice *(3 credits)*

420.654 Environmental and Natural Resource Economics
(3 credits)

420.655 Federal Environmental Compliance in Public
Transit *(3 credits)*

420.656 Environmental Impact Assessment and Decision
Methods *(3 credits)*

420.659 Management for Environmental Results with
Performance-Based Measurements *(3 credits)*

420.660 Strategies in Watershed Management *(3 credits)*

420.662 Coral Reefs and Caves: The Geology of the Bahamas
(3 credits)

420.665 Climate Change on the Front Lines: The Study of
Adaptation in Developing Countries *(3 credits)*

420.667   Analysis of Environmental & Ecological Data
(3 credits)

420.668 Sustainable Food Systems *(3 credits)*

420.669 Applied Sustainability *(3 credits)*

420.670 Sustainability Leadership *(3 credits)*

420.673 Ecology and Evolution of the Galapagos *(3 credits)*

420.675 Geology and Tropical Ecology of Hawai'i *(3 credits)*

420.676 Global Scarcity in Freshwater Systems: Crisis and
Solutions *(3 credits)*

420.677 Spatial Statistics *(3 credits)*

420.680 Special Topics in Environmental Sciences & Policy
(3 credits)

420.681 Climate Change Adaptation and Development in
Nepal *(3 credits)*

420.686 Special Topics in Environmental Science and Policy:
Energy Strategies *(3 credits)*

OPTIONAL CAPSTONE

420.800 Independent Research Project in Environmental
Sciences and Policy *(3 credits)*

INTENSIVE STUDY COURSES

Several ESP courses are offered as intensive study, field courses. These courses meet the residency requirement and occur in a compressed format during the summer, the winter, or over spring break. Each intensive study course had an additional field trip fee. Students are responsible for travel to the location of their residency course. Additional details about each course can be found on the ESP website under The Experience > Intensive/International Study.

420.611 Principles & Methods of Ecology (Virginia) *(3 credits)*

420.618 Terrestrial and Marine Conservation Biology (Maine)
(3 credits)

420.623 Freshwater Ecology and Restoration of Aquatic
Ecosystems (Maryland) *(3 credits)*

420.637 Conservation Biology and Wildlife Management
(Montana) *(3 credits)*

420.662 Coral Reefs and Caves: The Geology of the Bahamas
(3 credits)

420.669 Applied Sustainability (Maryland) *(3 credits)*

420.670 Sustainability Leadership (Costa Rica) *(3 credits)*

420.673 Ecology and Evolution of the Galapagos *(3 credits)*

420.675 Geology and Tropical Ecology of Hawai'i *(3 credits)*

420.678 Nature Conservation and Sustainability in Cuba
(3 credits)

420.681 Climate Change Adaptation and Development in
Nepal *(3 credits)*

420.686 Special Topics in Environmental Science and Policy:
Energy Strategies (Great Lakes) *(3 credits)*

ELECTIVES OUTSIDE OF ESP PROGRAM

Students can take up to two elective courses outside of the ESP program with the permission of their adviser.

Applied Economics Courses

440.622 Cost-Benefit Analysis *(3 credits)*

440.650 Environmental & Resource Economics *(3 credits)*

Biotechnology Courses

410.662 Epidemiology: Diseases in Populations *(4 credits)*

Carey Business School Courses

151.620 Global Strategy*

241.710 Sustainable Development*

790.047 Innovation for Humanity Project*

Energy Policy and Climate Courses

425.601 Principles and Applications of Energy Technology
(3 credits)

425.602 Science of Climate Change and Its Impacts *(3 credits)*

425.603 Climate Change Policy Analysis *(3 credits)*

425.622 Renewable Energy and Proactive Climate Change in
Benelux *(3 credits)*

425.623 Transportation Policy in a Carbon-constrained World
(3 credits)

425.637 International Climate Change Policy *(3 credits)*

425.638 Adaptation to Climate Change *(3 credits)*

425.645 Global Energy Policy *(3 credits)*

Geographic Information Systems Courses

430.601 Geographic Information Systems (GIS) *(4 credits)*

430.602 Remote Sensing: Earth Observing Systems and
Applications *(4 credits)*

430.603 Geospatial Data Modeling *(4 credits)*

Government Courses

470.667   The Administrative State: How Washington Regulates (*3 credits*)

470.734   Energy, Vulnerability, and War (*3 credits*)

470.754   Global Climate Change and U.S. Energy Security (*3 credits*)

470.755   Sustainable Cities in France and Germany: Lessons for the United States (*3 credits*)

Museum Studies

460.636 -Living Collections (*3 credits*)

Nonprofit Management Courses

470.625   Resource Development and Marketing in Nonprofits (*3 credits*)

470.728   Fundamentals of Nonprofits and Nonprofit Management (formerly Influence and Impact of Nonprofits) (*3 credits*)

470.736   Principles of Nonprofit Management (*3 credits*)

470.774   Nonprofit Governance and Executive Leadership (*3 credits*)

470.779   Financial Management and Analysis in Nonprofits (*3 credits*)

Public Health Courses

187.610   Public Health Toxicology

180.611   The Global Environment and Public Health*

188.680   Fundamentals of Occupational Health

340.601   Principles of Epidemiology

700.622   Bioethics, Human Rights, and Global Health*

700.630   Global Food Ethics*

Whiting School of Engineering Courses

575.407   Radioactive Waste Management*

575.423   Industrial Processes and Pollution Prevention*

575.707   Environmental Compliance Management *

575.711   Climate Change and Global Environmental Sustainability*

575.723   Sustainable Development and Next-Generation Buildings*

575.727   Environmental Monitoring and Sampling*

575.731   Water Resources Planning*

575.734   Smart Growth Strategies for Sustainable Urban Development and Revitalization*

575.747   Environmental Project Management*

BA/MS Option for Johns Hopkins University GECS Majors

Undergraduates majoring in global environmental change and sustainability may apply for accelerated status towards an MS in Environmental Science and Policy. These students should declare their intention to pursue the MS during their junior year or early in their senior year of undergraduate study by contacting either the undergraduate GECS Program Director Rebecca Kelly (rkelly36@jhu.edu), or the program director of the ESP program, Jerry Burgess (jerry.burgess@jhu.edu). GECS students may apply up to three courses taken as undergraduates

toward the MS in Environmental Science and Policy, thereby leaving only seven more courses to complete the MS following receipt of their BA.

Application

GECS students may apply for the BA/MS anytime during the senior year or up to one year following conferral of their BA. The application procedure is the same as that of other AAP applicants, and details are found online at *advanced.jhu.edu/admissions.* Students admitted to the BA/MS program will be assigned a graduate adviser but will continue to be advised by their GECS adviser for all matters concerning the BA degree.

Course Requirements for BA/MS

GECS students will receive two separate degrees, so the requirements of both degrees must be fulfilled. Students may not earn the MS degree without completion of the BA, but students who do not complete the MS retain their BA. GECS BA/MS students must complete all the requirements of the MS in ESP. Up to three courses completed while an undergraduate can count toward the 10 courses required for the MS. Specifically, up to two of the following courses can be used to satisfy the corresponding core course requirements for the MS in Environmental Science and Policy:

> 270.224 Oceans and Atmospheres may substitute for 420.608 Oceanic & Atmospheric Processes.

> 270.308 Population and Community Ecology may substitute for 420.611 Principles and Methods of Ecology.

> 271.403 Environmental Policymaking and Policy Analysis may substitute for 420.614 Environmental Policymaking and Policy Analysis.

> 270.317 Conservation Biology may substitute for **420.637 Conservation Biology and Wildlife Management**

(Note that the Environmental Policymaking and Policy Analysis course will be a combined GECS undergraduate and ESP graduate course.)

If a student wishes to apply a third course to both their GECS BA and their ESP MS, the course must be approved by the graduate adviser and the ESP Program Director and must be at the 300 or 600 level with content germane to environmental science and policy.

MS in Environmental Sciences and Policy/Graduate Certificate in Geographic Information Systems

The use of geographic information systems has become standard for many environmental professionals. At the same time, during environmental investigations, GIS remains one of the most popular and powerful applications. To enable students to better exploit the complementary nature of the fields, we have eliminated the overlap between the MS in Environmental Science and Policy and the graduate certificate in GIS. This

Not an AAP course. Please refer to partner JHU school division for credit information.

enables students to earn both the MS degree and the Graduate Certificate by completion of a total of 13 courses rather than the 15 courses that would be required to complete the programs separately. Interested students, including those already enrolled in either program, should apply to the combined MS in ESP/ Graduate Certificate in GIS program. New students may select this option at the time of application. Current students should consult their academic adviser and apply by filing a change of program form with the Registration Office. Course requirements can be pursued simultaneously and are as follows:

MS in Environmental Sciences and Policy:

> Five core courses or four core courses plus an independent research project

> Five elective courses must include:

430.601   Geographic Information Systems (GIS)
            OR
430.603   Environmental Applications of GIS

And any four of the following:

430.600   Web GIS (3 credits)
430.602   Remote Sensing: Earth Observing Systems and Applications (4 credits)
430.603   Geospatial Data Modeling (4 credits)
430.604   Spatial Analysis with GIS (4 credits)
430.605   Development and Management of GIS Projects (4 credits)
430.606   Programming in GIS (4 credits)
430.608   GIS and Spatial Decision Support Systems (4 credits)
430.609   Spatial Data Management: Quality and Control (4 credits)

Substitution of other GIS courses allowed with approval of the Program Director.

Environmental Sciences and Policy

Master of Arts in Film and Media

advanced.jhu.edu/filmandmedia

The Master of Arts in Film and Media provides an in-depth curriculum designed to develop skill sets required to succeed in the film, television, and media industries. Students are exposed to the latest technology, taught the most current financial and distribution strategies, and trained in advanced narrative techniques. The program emphasizes experiential learning and focuses on the latest trends and advances in the entertainment industry. All our courses balance practice with theory and are taught by successful artists and executives in the film, television and media world. Our program has been specifically designed to keep up with constant advances in technology, ideas and trends, both practical and aesthetic.

Courses and workshops feature current case studies that help expose students to the latest tools, equipment and resources in specific fields. The Johns Hopkins MA in Film and Media brings the industry to Baltimore, as our students grow their professional network while creating a two-way bridge between the local burgeoning film scene and the industry hubs in Los Angeles, New York and abroad. Courses are held at the JHU/MICA Film Center, Baltimore's new film studio and recording center in the Station North Arts and Entertainment District.

Students choose two concentrations from the fields of business, sound, and writing. While they specialize in two of these tracks, they acquire hands-on experience in developing, shooting, editing, and marketing original film and television content in the Graduate Filmmaking Studio.

PROGRAM REQUIREMENTS

> Two core courses
> Eight electives in two concentrations
> Capstone

CURRICULUM

Students take 11 courses, including the two-course Graduate Filmmaking Studio and a capstone within the required course sequence. Students take at least eight elective courses from two concentrations within the areas of Writing for Film and Television, Sound Production and Design, and Business of Film and Media.

The Business track revolves around a two-semester seminar taught by veteran development and acquisitions executives. This Fundamentals of Business seminar is structured around presentations by internationally renowned industry leaders, who—together with students—analyze case studies in the film and television industries. Students are required to develop their own business plans, investor decks, and marketing plans, and present them to invited executives, investors, and entrepreneurs.

PROGRAM COMMITTEE

Karen Yasinsky
Co-Interim Program Director

Matthew Porterfield
Co-Interim Program Director

Gabo Arora
Assistant Director

Students in the Sound concentration acquire hands-on experience in creating and recording sound effects, dialogue, and music as they pertain to film, television, and media projects. Leveraging the experience and resources of The Peabody Institute and featuring a new sound studio co-designed by Thomas Dolby and Scott Metcalfe, the Sound concentration provides students the opportunity to create, edit and mix soundtracks and soundscapes at the highest level.

Award-winning screenwriters and television writers lead the intensive workshops in the Writing concentration, centered on analyzing and polishing original narratives. Students create and strengthen their writing portfolios as they design, draft, and polish their feature-length screenplays, television spec scripts, and television pilots. Master classes are offered by guest executives, agents, and executive producers, providing excellent opportunities to network within the industry.

CAPSTONE

Students are required to complete a capstone project at the culmination of the program. During the capstone project, students will demonstrate professional expertise in one of their concentrations, completing a project that will be part of a work portfolio to be used to gain a professional position in the industry.

For course descriptions, please visit advanced.jhu.edu/filmandmedia.

Film & Media

Core Courses

AS.455.641   Graduate Filmmaking Studio I & II   *(4 credits)*

Writing for Film and Television Courses

AS. 455.611   Screenwriting Workshop I – The Outline   *(3 credits)*

AS. 455.612   Screenwriting Workshop II – The Draft   *(3 credits)*

AS. 455.614   Acting for Screenwriters   *(3 credits)*

AS. 455.615   Episodic Writing Workshop I – Drama   *(3 credits)*

AS. 455.616   Episodic Writing Workshop II– Comedy   *(3 credits)*

AS. 455.617   Episodic Writing III - The Limited Series   *(3 credits)*

Business of Film and Media Courses

AS. 455.619   Business of Nonfiction: Producing the Documentary   *(3 credits)*

AS. 455.620   Fundamentals of Business I   *(3 credits)*

AS. 455.621   Entertainment Law for Independent Filmmakers   *(3 credits)*

AS. 455.623   Fundamentals of Business II   *(3 credits)*

AS. 455.625   Line Producing, Creative Producing, Executive Producing   *(3 credits)*

Sound Production and Design Courses

AS. 455.630   Recording Sound for Film   *(3 credits)*

AS. 455.631   Designing Sound for Film   *(3 credits)*

AS. 455.632   Sound on Film I   *(3 credits)*

AS. 455.633   Sound on Film II   *(3 credits)*

PY. 550.524   Sound Design for Video Games   *(3 credits)*

Film & Media

Geographic Information Systems

Post-Baccalaureate Certificate and Master of Science Degree

gis.jhu.edu

Geographic Information Systems (GIS) is a dynamic and versatile technology that enables visualization, analytics and data management capabilities for an increasingly wide spectrum of industries. It has come to play a key role in empowering decision makers understand various processes and make well-informed decisions. It is used in various fields, such as environmental planning, homeland security, defense and intelligence, marketing, utilities, telecommunications, economic development, transportation, law enforcement, public health and many others. It is this dynamism that the Johns Hopkins University GIS programs encompass in their offerings, the Master of Science in GIS and the Post-Baccalaureate Certificate in GIS.

These two programs are fully online and provide a strong foundational education that delves into the principles and real-world applications of GIS, allowing students to build their credentials and capitalize on a marketplace that continues to grow in its demand for skilled employees. The Master of Science in GIS is designed to prepare the next generation of geospatial professionals and data scientists, skilled in all facets of GIS, including project management, web-based application development, spatial analytics, visualization, enterprise GIS administration and big data technologies.

Both programs are designed for students who have little or no knowledge of the GIS field, as well as students with prior experience. Students entering either program will be introduced to the most widely used commercial software, as well as open-source software, often utilizing cloud computing infrastructure. The program is designed to introduce students to the basic discipline of geographic information as a system and a science. Hands-on experience is emphasized and students in the program can expect to work on real-world geospatial scenarios with real data along with the accompanying issues those data may introduce.

PROGRAM COMMITTEE

Tom Haine
Program Chair and Morton K. Blaustein Professor and Chairman of Earth and Planetary Sciences

Jerry Burgess
Director, Environmental Programs

Geri Miller
Program Coordinator, GIS

James Gillespie
Head, GIS and Data Services, Eisenhower Library

Michael Harrower
Assistant Professor of Archaeology, Department of Near Eastern Studies

Benjamin Zaitchik
Assistant Professor, Department of Earth and Planetary Sciences

Timothy M. Shields
Assistant Scientist, Department of Epidemiology, Bloomberg School of Public Health

ADMISSION REQUIREMENTS

In addition to the materials and credentials required for all programs (see Admission Requirements), the Master of Science and Post-Baccalaureate Certificate in Geographic Information Systems programs require:

1. A grade-point average of at least 3.0 on a 4.0 scale in the latter half of undergraduate studies. Particular interests and work experience may also be considered.

2. One semester of undergraduate calculus and one semester of undergraduate statistics

Students who do not have the necessary undergraduate training in calculus or statistics may be offered provisional admission if their other credentials are strong. Students who are admitted provisionally due to lack of quantitative skills have the option to:

1. Take appropriate courses at an accredited college/university.

2. Take 420.301 Quantitative Methods for Environmental Sciences.

3. Pass a math placement test, administered by the Environmental Sciences program.

Admissions Documents

> AAP application and fee

> A current résumé or CV

> A statement of purpose explaining how GIS is an appropriate avenue of instruction for your career needs

> Two letters of recommendation, preferably one academic reference

> Official undergraduate and graduate transcripts

Provisional Student

Provisional students are admitted to this status because, in the view of the Admissions Committee, they do not fulfill all academic requirements for admission as a degree candidate at the time of the application. Provisional students may be required to take specific prerequisite courses, and/or take a specific number of graduate-level courses and complete them successfully in order to establish their eligibility to be admitted as a degree candidate.

During the time of this provisional status, students are held to grading criteria stricter than those required of degree candidates (see Grading System, Requirements). Specifics of a provisional admission are outlined in a formal admissions letter mailed to the student. All listed criteria must be met for a student to continue to enroll in courses.

Math Test

This test is administered online and can be done at the student's convenience on any working day. After a student is admitted, he/she may make an appointment to take the test by contacting the Environmental Sciences Program Director (jerry. burgess@jhu.edu). Students can also obtain relevant practice materials at *advanced.jhu.edu/academics/graduate-degree-programs/ environmental-sciences-and-policy/program-resources/practice-math- questions/.*

PROGRAM STRUCTURE

Post-Baccalaureate Certificate

Five courses are required to complete the certificate. All courses are taught online, giving students access to the best geospatial experts, regardless of their location.

430.600	Web GIS	*(4 credits)*
430.601	Geographic Information Systems	*(4 credits)*
430.603	Geospatial Data Modeling	*(4 credits)*
430.604	Spatial Analysis With GIS	*(4 credits)*
430.606	Programming in GIS	*(4 credits)*

Master of Science

A) Four out of five certificate courses (see above)

B) Five electives from the following list

C) Capstone Project

Elective Courses (Five Courses)

The following elective courses are offered as part of the Master of Science in GIS. We recommend that one of the four electives be a GIS programming course and one be a spatial data management course.

430.602	Remote Sensing: Earth Observing Systems and Applications	*(4 credits)*
430.605	Development and Management of GIS Projects	*(4 credits)*
430.607	Spatial Databases and Data Interoperability	*(4 credits)*
430.608	GIS and Spatial Decision Support Systems	*(4 credits)*
430.609	Spatial Data Management: Quality and Control	*(4 credits)*
430.611	Geospatial Ontology and Semantics	*(4 credits)*
430.612	Cartographic Design and Visualization	*(4 credits)*
430.613	Advanced Topics in Remote Sensing	*(4 credits)*
430.615	Big Data Analytics: Tools and Technique	*(4 credits)*
430.617	Demographics Modeling	*(4 credits)*
430.618	Advanced Python Scripting for GIS	*(4 credits)*
430.619	Advanced Web Application Development	*(4 credits)*
430.621	GIS for Emergency Management	*(4 credits)*
430.623	Geo Apps	*(4 credits)*
430.625	System Architecture for Enterprise GIS	*(4 credits)*
430.627	Artificial Intelligence and Machine Learning in Geospatial Technology	*(4 credits)*
430.800	Capstone for Geographic Information Systems	*(4 credits)*

For more information about core and elective courses, please see course descriptions at *advanced.jhu.edu*. Please note that not all courses are offered every semester, and the GIS course schedule should be consulted for current classes and times.

Students may also consider taking related courses in other divisions of AAP, especially the Environmental Sciences and Policy and Energy Policy and Climate programs. Students are permitted, with permission of the GIS program coordinator, to take up to two pertinent courses outside of the GIS curriculum to fulfill their requirements toward the degree. Not all these elective choices are offered in an online format. Please refer to the Advanced Academic Programs course schedule for exact dates, times, locations, fees, and instructors. Courses are open only to students who meet enrollment requirements.

Geographic Information Systems

Center for Advanced Governmental Studies

MA in Government, MA in Government/MBA, MA in Global Security Studies, MA in Public Management, MS in Government Analytics, MS in Geospatial Intelligence, Certificate in Government Analytics, Certificate in Intelligence, Certificate in Nonprofit Management, Certificate in Science, Technology, and International Security

advanced.jhu.edu/govstudies

The Johns Hopkins University Center for Advanced Governmental Studies encompasses a broad set of programs and initiatives designed to enhance students' understanding of the role, function, and impact of government and the nonprofit sector. At the heart of the center are eleven graduate programs: MA in Government, MA in Global Security Studies, MA in Public Management, dual MA in Government/MBA, MS in Government Analytics, MS in Research Administration, MS in Geospatial Intelligence, Certificate in Government Analytics, Certificate in Intelligence, Certificate in Nonprofit Management, and Certificate in Science, Technology, and International Security. In addition, the Center is involved in a number of government and private-sector partnerships.

Based at the Johns Hopkins University Washington, DC center in Dupont Circle, the Center is a forum for policy discussions and provides a venue for unbiased efforts to expand knowledge of the various governmental components, how they interact, and how they comply withtheir mandated accountability in administering the affairs of state. The mission of all the Center's programs and initiatives is to provide a strong foundation of knowledge upon which innovative policy programs and promising leaders can develop.

GRADUATE DEGREES AND CERTIFICATES

The graduate degree programs of the Center bring together theory and practice in the study of government and its impacts domestically and abroad, while preparing individuals for leadership positions in the public and private sectors. At the Center, students use their graduate studies to better inform their professional work and find that their practical work experience often augments their graduate studies. While our degree programs are designed as part-time studies, students have the option of accelerating their course of study by attending at a full-time pace.

In addition, students have various options for combining our master's degrees with our certificates in intelligence, nonprofit management,or government analytics, allowing them to graduate with two credentials after pursuing a concentrated and efficient course of study.

PROGRAM COMMITTEE

Benjamin Ginsberg
David Bernstein Professor of Political Science and Program Chair

Kathy Wagner Hill
Director of the Center for Advanced Governmental Studies

Dorothea Israel Wolfson
Director of the MA in Government

Paul Weinstein Jr.
Director of the MA in Public Management

Mark Stout
Director of the MA in Global Security Studies, Certificate in Intelligence, and Certificate in Science, Technology, and International Security

Jennifer Bachner
Director of the MS in Government Analytics and Certificate in Government Analytics

Jack O'Connor
Director of MS in Geospatial Intelligence

Karin Orr
Program Coordinator, Certificate in Nonprofit Management

Sarah O'Byrne
Program Coordinator for the Center for Advanced Governmental Studies

Governmental Studies

PARTNERSHIPS, EVENTS, AND PUBLICATIONS

The Center for Advanced Governmental Studies is involved in a number of government and private-sector partnerships. We welcome opportunities for collaborations and initiatives that fit within the Center's goals of educational exchange and workshop/trainingefforts that further the understanding of the roles and functions of government.

The Center has developed and instituted ongoing leadership exchange programs between U.S. federal executives and their counterparts in China, Germany, and other countries. Inaddition, the Center hosts special events, policy workshops, and summits with embassies, government agencies, Washington think tanks, and other organizations. A series of papers is published by the Center on topics that can help inform current policy debates. The most recent is "Nonviolent Civilian Defense to Counter Russian Hybrid Warfare" (advanced.jhu.edu/ nonviolent).

INTERNATIONAL STUDY

The Center for Advanced Governmental Studies at JHU offers degree-seeking students frequent opportunities for intensive international study. The basic format is several intensive course meetings and readings with JHU professors before the students leave; spending one week abroad with classes about 4.5 hours a day and field trips or other exercises, and a research project or major paper due after students return. Past courses have included The Birth of Modern Democracy" (Scotland and France), "China's Place in the 21st Century," "Command and Leadership in Modern War: Operation Overlord," (United Kingdom and France); Politics, Security and Culture in Israel; Politics, Security and Culture in India; Environmental Governance, Climate Change and Energy Security in Europe and America (Belgium and Germany); Policymaking in the U.S. and Latin America: Perceptions and Misconceptions (Mexico); and Sustainable Cities in France and Germany: Lessons for the United States (Germany and France).

ADMISSION REQUIREMENTS

 In addition to the materials and credentials required for all programs, the Master of Arts in Government, the Masterof Arts in Global Security Studies, the Master of Arts in Public Management, the Master of Science in Government Analytics, the Certificate in Government Analytics, the Certificate in Intelligence, and the Certificate in Nonprofit Management require a grade-point average of at least 3.0 on a 4.0 scale. However, a 3.0 GPA does not guarantee admission. Particular interests and work experience will also be considered.

Application Documents

> AAP application and fee

> Official undergraduate transcripts and graduate transcripts from all institutions attended, not just the degree-granting institution(s)

> A current résumé

> Two letters of recommendation. Applicants must use the AAP form.

> A statement of purpose (one to two pages double-spaced) that explains the applicant's reasons for seeking admission and how the degree will be used for career advancement or academic enrichment.

> A writing sample of five to 10 pages that is research focused. The purpose of the writing sample is to demonstrate the applicant's ability to make and support an argument.

If the applicant does not have an existing research-focused writing sample that he or she wishes to submit, the applicant may write a five-page paper on one of the following questions:

MA in Government applicants, please respond to the following:

"If men were angels, no government would be necessary. If angels were to govern men, neither external nor internal controls on government would be necessary. In framing government which is to be administered by men over men, the great difficulty lies in this: You must first enable the government to control the governed; and in the next place oblige it to control itself." — James Madison, Federalist 51

In this well-known quote, Madison points toward the age-old problem of reconciling democracy and political power. Discuss this problem in reference to some recent policy issues or political events, citing at least three references.

MA in Global Security Studies applicants, please respond to the following:

"[America] goes not abroad in search of monsters to destroy. She is the well-wisher to freedom and independence of all." —John Quincy Adams

This quote reflects the trends in American national security for much of the nation's history. Are the implications that can be drawn from the statement consistent with the demands of American national security in the 21st century? Discuss this problem in reference to some recent policy issues or political events, citing at least three references.

Governmental Studies

MA in Public Management applicants, please respond to the following:

"A memorandum is not written to inform the reader, but to protect the writer." —Former Secretary of State Dean Acheson

Please discuss whether you think the quote from former Secretary Acheson is accurate or not and why?

Certificate in Nonprofit Management, Certificate in Government Analytics, and Certificate in Intelligence applicants do not need to submit a writing sample.

Master of Arts in Government

government.jhu.edu

COURSE REQUIREMENTS AND CONCENTRATIONS*

> Four core courses (includes thesis courses)
> Eight elective courses

For information on exact dates, times, locations, fees, and instructors for any term, students should consult the Advanced Academic Programs course schedule (*advanced.jhu.edu*) available several months before each semester begins. All classes are held at the Johns Hopkins University Washington, DC Center at 1717 Massachusetts Ave. NW, close to Dupont Circle. Select online courses are also offered every semester, and the degree may be pursued and completed entirely online as an option for some students.

CURRICULUM

The curriculum of the Master of Arts in Government program is designed for working adult students who have specialized skills in a particular field and desire the broader perspective necessary for leadership in politics and administration. The courses are based on the latest scholarly and scientific knowledge but emphasize the application of such knowledge to practical governmental, political, and policymaking problems of today.

Classes are designed to maximize individual attention, encourage student contribution, build analytical skills, and provide the tools for engaging in original research. All of this leads to lively and stimulating seminar discussions and an enriching graduate school experience.

Sequence of Study

Elective courses may be taken in any order, but the core and required courses must be taken in this sequence: Government and Politics, Research and Thesis I, Research and Thesis II, and Research and Thesis III. Students cannot register for these courses out of order. In their first semester, students take the core course, Government and Politics, which introduces students to the basic tenets of government and politics. Students should take the required courses, that is, Research and Thesis I, early in the program (i.e., as their fourth or fifth class), and the third core class, Research and Thesis II shortly after. The final required course of the program is Research and Thesis III, which students take after completing all other core and required courses and electives.

There are three concentrations offered in the government program for students choosing to specialize in one of these specific areas: Political Communication, Security Studies,

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PROGRAM ADVISING

Dorothea Israel Wolfson, Ph.D.
Director of MA in Government

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and Democracy Studies and Governance. The concentration in Political Communication provides students with the opportunity to study with practitioners in the field: reporters, political operatives, journalists, and campaign, news, and media professionals. The concentration in Security Studies covers the fundamentals of administering and preserving American security. The concentration in Democracy Studies and Governance provides students with an understanding of what makes democracies work and will be applicable to both "old" and "new" democracies, and to countries transitioning to democracy. Students may (but are not required to) identify a concentration in one of the fields after completion of the core courses.

Students must complete the core course, Government and Politics, eight electives, and the three required thesis courses, which include completion of the final thesis paper to be awarded an MA in Government.

Thesis Process

The thesis is a portfolio of three papers that are thematically linked and written during the course of the student's graduate school career. The papers are accompanied by an introductory critical comment of approximately eight to ten pages and a conclusion of similar length, which both address the contribution that these papers make to the existing literature and further address the way in which the three papers are interrelated.

Students are expected to have written the literature review for their theses in the Government and Politics course prior to enrolling in Research and Thesis I. During Research and Thesis I, students will study research and writing methods in more depth and expand their literature review to write the first paper of their portfolio thesis. In Research and Thesis II, students will, under the supervision of the thesis instructor, write and revise the second and possibly third paper for submission that is appropriate for their thesis portfolio. Students have the option of taking 470.709 Quantitative Methods instead of Research and Thesis II with permission of the instructor. By the conclusion of Research and Thesis I and II, all students will have at least two

of their three required thesis papers completed. The third paper should be well under way in Research and Thesis II also, but it can be reworked and revised during the remaining elective courses. Students will bring these three papers to their final class of the program, Research and Thesis III. In this course, students will work on any small revisions to the three papers and write the critical comment that thematically links the three papers together. The thesis must be successfully defended in order to graduate.

Online Option for Completing the MA in Government Degree

All required courses in the MA in Government program are available online, along with many electives. This allows students to pursue and complete the degree completely online. All course requirements are the same for online and on-the-ground students. Online learning is conducted asynchronously allowing maximum flexibility for all students. Online classes are on average limited to 15 students to give students an engaging and responsive learning environment. Students may opt to take online classes along with on-site classes throughout their course of studies as well. All students taking an online course for the first time must complete an orientation/training session on Blackboard before they begin their class.

CORE COURSES AND THESIS

470.602   Government and Politics (*3 credits*)
470.850   Research and Thesis I (*3 credits*)
470.852   Research and Thesis II (*3 credits*) OR
470.709   Quantitative Methods (*3 credits*) (may be substituted, with permission of the instructor)
470.800   Research and Thesis III: Government and GIS (*3 credits*)

Sample Courses for the Political Communication Concentration
Select four.

470.604   Social Media and the American Presidency (*3 credits*)
470.609   Leadership Skills in the 21st Century (*3 credits*)
470.615   Speechwriting: Theory and Practice   (*3 credits*)
470.616   Political Ideas, Strategy, and Policy Implementation (*3 credits*)
470.622   Money and Politics (*3 credits*)
470.626   Understanding the Media: Old and New (*3 credits*)
470.637   Lobbying and Influence (*3 credits*)
470.638   Negotiating as a Leadership Skill (*3 credits*)
470.641   Introduction to Advocacy and Lobbying (*3 credits*)
470.649   Behind the Numbers: Polling and American Elections (*3 credits*)
470.652   Primaries, Caucuses, Conventions and the General Election (*3 credits*)
470.657   Politics, the Media, and Presidential Campaigns (*3 credits*)
470.687   The Political and Social Media Revolutions (*3 credits*)
470.732   Communications and Congress   (*3 credits*)
470.735   Politics and the New Journalism   (*3 credits*)
470.737   The Media and Presidential Politics (*3 credits*)

470.747   Campaigns and Elections (*3 credits*)
470.749   Changing News Cycles (*3 credits*)
470.791   Political Writing and Communications (*3 credits*)

Sample Courses for the Security Studies Concentration
Select four. Note: Any course offering in the MA in Global Security Studies counts toward this concentration. There are many classes that count. Here is a small sampling:

470.606   American National Security (*3 credits*)
470.607   Counterintelligence and National Security: 21st Century Challenges (*3 credits*)
470.630   Congress and the Making of Foreign Policy (*3 credits*)
470.640   Challenges of Transnational Security (*3 credits*)
470.644   Democracy and Its Modern Critics (*3 credits*)
470.650   Legal Issues in Intelligence and National Security (*3 credits*)
470.654   Global Trade, Policy and Competition (*3 credits*)
470.655   Warfare by Other Means (*3 credits*)
470.659   Radicalization and Dereadicalization in Terror Networks (*3 credits*)
470.662   Religion, Conflict and Peacebuilding (*3 credits*)
470.692   Military Strategy and National Policy (*3 credits*)
470.697   Intelligence and Counterterrorism (*3 credits*)
470.711   Intelligence: From Secrets to Policy   (*3 credits*)
470.748   The Art and Practice of Intelligence (*3 credits*)
470.762   US-Mexico Relations: Migration, Trade, and Organized Crime (*3 credits*)
470.768   Nation Building as Security Policy (*3 credits*)

Sample Courses for the Democracy Studies and Governance Concentration
Select four.

470.602   Government and Politics
470.610   American Political Thought (*3 credits*)
470.617   The Courts and Public Policy (*3 credits*)
470.644   Democracy and Its Modern Critics (*3 credits*)
470.649   The Separation of Powers and Democratic Governance (*3 credits*)
470.651   Corruption and Democratic Governance (*3 credits*)
470.658   Religion and American Political Culture (*3 credits*)
470.661   Constitutional Law   (*3 credits*)
470.674   Regulations: Law of Federal Agencies (*3 credits*)
470.684   Legislative Language and Policymaking (*3 credits*)
470.686   Contemporary Congressional Politics (*3 credits*)
470.693   Comparative Democracies (*3 credits*)
470.698   American Exceptionalism (*3 credits*)
470.701   Congress: The First Branch and Why It Matters (*3 credits*)
470.721   Comparative Federalism: The United States and the European Union (*3 credits*)
470.730   Intellectual Property Law (*3 credits*)
470.759   American Political Development (*3 credits*)
470.776   Nationalism in the Democratic Age (*3 credits*)

Governmental Studies

MA IN GOVERNMENT/
CERTIFICATE IN INTELLIGENCE

Students pursuing an MA in Government may obtain an
additional credential by completing a sequence of courses
offered by the Post-Baccalaureate Certificate in Intelligence.
This combined credential will require students to complete
15 courses (in lieu of 17 to complete both degrees separately).
Students are required to take the following courses:

MA in Government Requirements:
470.602   Government and Politics
470.850   Research and Thesis I
470.852   Research and Thesis II
470.800   Research and Thesis III
Six electives of your choice

Five Intelligence Certificate Requirements:
Completion of five courses, one each from the following areas
(See Certificate in Intelligence for specific course options.)

>   Introductory Courses
>   Law and Ethics
>   Theory, History, and Context
>   Intelligence Operations
>   Applications of Intelligence

Governmental
Studies

Master of Arts in Government/MBA

Dual Degree Program with the Carey Business School

advanced.jhu.edu/govmba

Management education typically addresses the public and private sectors separately. Universities typically offer the MBA degree for business leadership and the MA, MPP, or MPA for public-sector management. The assumption is that managers working in the public and private sectors are involved with completely different sets of issues and problems. The reality is that both face similar challenges, and managers frequently move from the public sector to the private sector and vice versa.

The MA in Government/MBA uniquely prepares individuals for the combination of public-and-private sector responsibilities they are likely to face during their careers. This program enables those working in government to expand their knowledge and skills in business and management, preparing them to take on leadership roles in nonprofit, public sector, or commercial enterprises. Students in these degrees complete both the professional managerial education requirements of the MBA and the advanced disciplinary requirements of a specialized MA in Government. Graduates of the Johns Hopkins University MA in Government/MBA are capable of integrating rigorous scholarship with business acumen in bringing both intellectual and strategic leadership to the complex challenges of management in government and business in today's global economy.

The MA in Government/MBA is designed with class schedules to accommodate working adults. All classes and program activities are conveniently located at the JHU Washington, DC Center (near Dupont Circle). Classes are offered in the evening or on Saturday so students do not need to break stride in their careers to attend.

Students who pursue the dual degree will take classes in the government program at the School of Arts and Sciences and in the MBA program at the Carey Business School. They are assigned an adviser from each school who will oversee their course work. To earn the MA in Government/MBA, students must take 10 classes in the government program and 20 classes in the Carey Business School. Students working full time can take up to two courses a semester. Students who do not work full time can take up to four courses a semester. Dual degree recipients receive both diplomas upon completion of both programs.

ADMISSION REQUIREMENTS

Please refer to the Center for Advanced Governmental Studies page for specific admissions requirements for the MA in Government/MBA dual degree program.

Prerequisites

> GRE or GMAT exam*

> A grade-point average of at least 3.0 on a 4.0 scale in the latter half of undergraduate studies; particular interests and work experience will also be considered.

> At least two years of progressive, full-time, professional experience after the completion of undergraduate studies for the MBA

* Admission to the MBA portion of the dual degree may require the GMAT or GRE. A waiver from these exams may be approved if a candidate has:

1. Completed a graduate degree and can demonstrate quantitative ability through coursework of B or better in statistics, corporate finance, or microeconomics.

2. Completed an undergraduate degree and has at least five years of professional experience. Applicant has also taken at least one course in statistics, corporate finance, and microeconomics, earned a B or better, and earned an overall GPA of 3.0 or better.

3. A professional designation, such as CPA or CFA

Application Documents

> AAP application and fee

> GRE or GMAT (if required)

> A current résumé

> Two letters of recommendation that verify professional and/or academic accomplishments. Applicants must use the AAP form.

> A statement of purpose (one to two pages) is the most important document you are asked to submit. This statement should address your academic and professional goals.

Governmental Studies

> Official undergraduate and graduate transcripts

> International students must submit TOEFL scores and a "course-by-course" credential evaluation of their undergraduate transcript performed by an outside evaluation service.

> A writing sample of five to seven pages that is research focused. The purpose of the writing sample is to demonstrate your ability to make and support an argument.

If you do not have an existing research paper that you wish to submit, you may write a five-page paper on the following question:

> "If men were angels, no government would be necessary. If angels were to govern men, neither external nor internal controls on government would be necessary. In framing a government which is to be administered by men over men, the great difficulty lies in this: you must first enable the government to control the governed; and in the next place oblige it to control itself." – James Madison, Federalist 51

> In this well-known quote Madison points towards the age-old problem of reconciling democracy and political power. Discuss this problem in reference to some recent policy issues or political events, citing at least three references.

CURRICULUM

All dual-degree students are required to complete the following:

MA in Government Courses

> 470.602   Government and Politics in the US (3 credits)

> 470.695   Proseminar: Essentials of Public and Private Management (3 credits)

> Eight additional Government courses (3 credits)

Although not required, the following courses are recommended electives for students in the dual degree program:

470.609   Leadership Skills in the 21st Century (3 credits)
470.616   The Law and Public Institutions (3 credits)
470.619   State Politics and Policymaking (3 credits)
470.622   Money and Politics (3 credits)
470.630   Government, Banking, and the Financial System (3 credits)
470.635   Presidential Policymaking (3 credits)
470.638   Negotiating as a Leadership Skill (3 credits)
470.641   Government by Contract: The 20th Century Reform of American Government, Its Legacy, and the Future (3 credits)
470.645   The Budgetary Process (3 credits)
470.655   Multinationals and Government in the Age of Globalization (3 credits)
470.688   Political Institutions and the Policy Process (3 credits)
470.721   Business Law and Corporations in the Global Economy (3 credits)

470.728   Influence and Impacts of Nonprofits (3 credits)
470.730   Intellectual Property Law (3 credits)
470.736   Principles of Nonprofit Management (3 credits)
470.744   Trade and Security (3 credits)

Students wishing to earn a concentration must complete four of their electives in the concentration area. Concentrations are offered in Political Communication, Security Studies, and Democracy and Governance Studies. For MA/MBA students, the thesis requirement is optional. If you wish to write a thesis, you must take 470.850 Research and Thesis I, 470.852 Research and Thesis II, and 470.800 Research and Thesis III. These three classes would count toward the eight government electives you must take to complete the MA/MBA. MA/MBA students who successfully complete and defend their theses will be awarded honors at graduation.

For details on these concentrations and a full list of classes and descriptions, see the AAP website: *advanced.jhu.edu.*

MBA Courses

All dual-degree students are required to complete the following MBA courses (all courses are two credits):

120.601   Business Communication
121.610   Negotiation
131.601   Leadership Ethics Seminar
132.601   Business Law
142.620   Leadership in Organizations
142.730   Strategic Human Capital
210.620   Accounting and Financial Reporting
220.610   The Firm and the Macroeconomy
220.620   Economics for Decision Making
231.620   Corporate Finance
232.701   Investments
310.620   Information Systems
410.620   Marketing Management
510.601   Statistical Analysis
520.601   Decision Models
680.620   Operations Management

Five Carey electives

For more information, please contact Carey Business School Admissions at carey.admissions@jhu.edu.

Governmental Studies

Master of Science in Geospatial Intelligence

advanced.jhu.edu/academics/graduate-degree-programs/geospatial-intelligence/

DEGREE REQUIREMENTS

Students complete 12 courses to earn their degree

> One introductory course
> Seven core courses
> Three elective courses
> One capstone experience

For information on exact dates, times, locations, fees, and instructors for any term, students should consult the Advanced Academic Programs course schedule (*advanced.jhu.edu*) available several months before each semester begins. All classes are held at the Johns Hopkins University Washington, DC Center at 1717 Massachusetts Ave. NW, close to Dupont Circle. Select online courses are also offered every semester, and the degree may be pursued and completed entirely online as an option for some students.

CURRICULUM

The M.S. in Geospatial Intelligence weaves the history, science, mathematics, and art of geospatial analysis into a program that willenable its graduates to lead and shape this rapidly-growing intelligence discipline. The program combines recognizedfacultywith extensive geospatial experience and publications, an interactive and online curriculum, and the research resources, tools, and opportunities for its students to:

> Understand the history and evolution of geospatial intelligence and its enduring challenges;

> Develop the habits of mind and the conceptual framework to thrive as analysts, researchers, program leaders and managersin the geospatial communities;

> Employ the appropriate mathematical models and scientific sensor knowledge necessary to design advanced commercial geospatial collection management for big data and small data problems, and to design geospatial databases for complex issues;

> Develop analytic processes and products as well as demonstrate the ability to communicate geospatial information and analysis accurately and persuasively in writing and briefing;

> Produce original research on the history and methodologies of geospatial intelligence.

Sequence of Study

The program commences with a required introductory course, and progresses through core courses, electives in specific areasof geospatial concentration, and a capstone exercise that provides students the opportunity to display advanced proficiency and thoughtful geospatial analysis based on the content of the program.Individual and collaborative projects are woven through the courses.

On account of the constrained size of each cohort, the selection criteria will be rigorous.

ADMISSION REQUIREMENTS

In addition to the materials and credentials required for all programs (see AAP Admission Requirements), the Master of Science in Geospatial Intelligence requires the following prerequisite.

Prerequisites: A four-year degree in a related discipline, such as Geography, GIS, Social Sciences (Political Science, International Relations, Area Studies). For those holding degrees in other disciplines, attention will be given to overall GPA, and demonstrated writing ability. The program requires proficiency in mathematical statistics and probability. Prospective students will have the opportunity to assess their level of proficiency before enrolling in the program.

COURSES

For detailed course descriptions, please visit *advanced.jhu.edu/ academics/graduate-degree-programs/geospatial-intelligence/faculty/.*

The program comprises 12 courses—an introductory course, seven required courses, three electives, and a capstone experience. (While the program is designed to be done fully online, some of the courses are offered on-ground.)

Governmental Studies

CORE COURSES

472.600   Introduction to Geospatial Intelligence (3)

430.601   Geographic Information Systems (4)

470.719   Technical Collection of Intelligence (3) OR

430.602   Remote Sensing: Earth Observing Systems and
Applications (4)

430.603   Geospatial Data Modeling (4)

430.604   Spatial Analysis with GIS (4)

470.748   Art and Practice of Intelligence (3)

430.612   Cartographic Design and Visualization (3)

470.696   Ethics and Privacy in Intelligence Operations   (3)

ELECTIVES

430.600   Web Mapping (4)

430.606   Programming in GIS (4)

430.608   Spatial Databases and Data Interoperability (4)

430.609   GIS and Decision Support Systems (4)

430.611   Geospatial Ontology and Semantics (4)

430.613   Advanced Remote Sensing (4)

430.615   Big Data Analytics: Tools and Techniques (4)

430.618   Advanced Python Scripting for GIS (4)

430.619   Advanced Web Application Development (4)

430.621   GIS for Emergency Management (4)

470.601   Climate Change and National Security (3)

470.752   Intelligence Analysis (3)

470.697   Intelligence and Counterterrorism (3)

470.792   Social Science and National Security and Intelligence (3)

472.610   Collection Modelling and Management for
Commercial Imagery (3)

CAPSTONE EXPERIENCE

472.800   Capstone in Geospatial Intelligence (4)

The Capstone is the culmination of the instruction and the learning in the program. In this experience, the student selects a mentor, identifies a geospatial issue of interest with an associated collection strategy, analytic methodology, and reporting strategy, and a written summary product and presentation.

Governmental Studies

Master of Arts in Global Security Studies

globalsecurity.jhu.edu

COURSE REQUIREMENTS

> Four core courses
> Five elective courses
> Three thesis courses

CURRICULUM

The curriculum of the JHU Master of Arts in Global Security Studies is designed for working adult students who are looking to develop or expand their expertise in the challenges of security in the 21st century. Students confront the complexities of today'ssecurity environment with the latest policy and theoretical tools for analysis and action. Particular strengths of the program are in intelligence; terrorism, insurgency, and other forms of "small wars" and armed social movements; energy and environmentalsecurity; and the emerging cyber domain and its implications for warfighting, security, privacy, and the economy.

Courses draw from the best in academia and policymaking in order to offer students the cutting edge in intellectual preparednessfor career advancement. Classes are designed to maximize individual attention, encourage student contribution, build analytical skills, and provide the tools for engaging in original research.

In order to providethe flexibility needed by working professionals and to accommodate all learning styles, courses are offered on-ground in the Dupont Circle area of Washington, DC; online in an asynchronous format; and in a hybrid format. Every summer, one or more courses offers an overseas experience.

Sequence of Study

Students take 470.603 Introduction to Global Security Studies in their first semester. This course exposes students to the basic concepts that are important to the field of global security studies and allow them to apply these tools to selected security issues such as terrorism, the rise of China, and climate change. In the other core classes, which should be taken early on, students use these intellectual tools as they explore the three pillars of the degree: strategic studies, energy and environmental security, and economic security.

 In their second or third semester, students take 470.851 Introduction to Qualitative Methods, the first step in the research study process. After that, students take either 470.854 Fundamentals of Quantitative Methods or 470.853 Historical Methods. With this sound basis in methodology, students are prepared to write a journal article-length study in their final

PROGRAM ADVISING

Mark Stout, Ph.D.
Director of MA Global Security Studies
and Certificate in Intelligence

Sarah O'Byrne Ph.D.
Program Coordinator for Center for
Advanced Governmental Studies

semester when they take 470.855 Research Study Seminar. Students must successfully defend their research study in order to graduate.

Students may pursue an area of concentration in one of the fields listed below. An area of concentration requires that at least four of the elective courses be from the list approved for that concentration. All concentration courses also count as general electives for students not pursuing an area of concentration.

Research Study Process

This program does not require a thesis. However, it does require the completion of a rigorous research study of journal article length. The research study should make use of the qualitative and quantitative research methods that students learn in 470.851 Introduction to Qualitative Methods, and 470.854 Fundamentals of Quantitative Methods or 470.853 Historical Methods.

CORE COURSES

Students must complete four core courses. With the exception of 470.601 and 470.657 all of these courses are offered every semester.

> 470.603   Introduction to Global Security Studies —
          This class should be taken in your first semester.
> 470.605   Global Political Economy
> 470.692   Military Strategy and National Policy
> 470.773   Energy and Environmental Security OR
  470.601   Climate Change and National Security OR
  470.657   Energy, Security, and Defense.

RESEARCH STUDY COURSES

Students must complete a three course research study sequence.

> 470.851 Introduction to Qualitative Methods in Social Science - *This course should be taken in the second or third semester.*

> 470.854 Fundamentals of Quantitative Methods; OR 470.709 Quantitative Methods *(with permission from the instructor)*; OR 470.853 Historical Methods

> 470.855 Research Study Seminar - *This class must be taken as the final semester of study.* Prerequisite: Students must have passed all previous courses in the Research Study track

SAMPLE ELECTIVE COURSES FOR AREAS OF CONCENTRATION

Students may pursue an area of concentration in one of the fields listed below. A complete list of concentration courses is available on our website. A selected list of electives pursuant to the concentrations is below. Please consult with your adviser if in doubt about the applicability of a course to a particular concentration. All courses are three (3) graduate credits unless otherwise specified. Courses are offered in a variety of formats: on-ground, online, and hybrid. Please refer to our website for format information regarding each of these courses.

Strategic Studies Concentration

470.606	US Security in a Disordered World
470.607	Counterintelligence and National Security: 21st Century Challenges
470.611	Introduction to Terrorism Studies
470.620	Introduction to Intelligence in the Five Eyes Community
470.630	Congress and the Making of Foreign Policy
470.632	Security Issues in South Asia
470.640	Challenges of Transnational Security
470.644	Democracy and Its Modern Critics
470.648	European Security: Russian Challenge, Western Responses
470.650	Legal Issues in Intelligence and National Security
470.653	Russian National Security Policy
470.657	Energy, Security, and Defense
470.659	Radicalization and Deradicalization in Terror Networks
470.665	Covert Action and National Security
470.668	Politics and Process in American Foreign Policy
470.676	From al-Qaeda to Islamic State: Understanding the Roots of the Global Jihad Movement
470.679	Armed Social Movements: Terrorism Insurgency and Crime
470.680	The Rise and Fall of Intelligence
470.685	The Challenge of Change: Innovation in Military Affairs
470.693	Comparative Democracies
470.696	Ethics and Privacy in Intelligence Operations
470.697	Intelligence and Counterterrorism
470.704	Strategies in Insurgent and Asymmetric Warfare

470.707	International Security and Intelligence
470.711	Intelligence: From Secrets to Policy
470.713	Resisting Tyranny: Strategic Nonviolent Conflict
470.722	Defense Intelligence in War and Peace
470.724	Managing Dangerous Futures: Global Political Risk Analysis
470.725	China's Impact on Global Security
470.740	Cyber Policy, Strategy, Conflict and Deterrence
470.742	Politics of Cybersecurity
470.745	Terrorist Financing Analysis and Counterterrorist Finance Techniques
470.746	Iran: Security Policy of a Revolutionary State
470.751	Politics and Security in the Middle East
470.760	Comparative Intelligence Systems
470.766	Economic Growth: Politics of Development in Asia, Africa and Beyond
470.777	Technology and Terrorism
470.784	Technology of Weapons of Mass Destruction
470.785	Nuclear Proliferation and Non-Proliferation
470.786	Weapons of War: The Technology and Uses of Weapons
470.793	Social Science in National Security and Intelligence
470.797	Introduction to Homeland Security Intelligence
472.600	Introduction to Geospatial Intelligence

Energy and Environmental Security Concentration

420.614	Environmental Policymaking and Policy Analysis
425.602	Science of Climate Change and its Impact
420.650	International Environmental Policy
420.665	Climate Change on the Front Lines: The Study of Adaptation in Developing Countries
425.601	Principles and Applications of Energy Technology
425.603	Climate Change Policy Analysis
430.601	Geographic Information Systems
430.602	Remote Sensing: Earth Observing Systems and Applications
470.601	Climate Change and National Security
470.657	Energy, Security, and Defense

Other Electives

FURTHER ON ELECTIVES

This is not a comprehensive list of electives, merely rather a sampling. Courses with the 470 count for the GSS elective requirement. So, too, do many 420 courses offered by the Environmental Sciences and Policy program, 425 courses offered by the Energy Policy and Climate program, and some 430 courses offered by the Geographic Information Systems program and some 472 courses offered by the Geospatial Intelligence program.

After consultation with their adviser, students may also take up to two relevant courses offerings in the School of Public Health, the School of Advanced International Studies, and other graduate programs in the Krieger School of Arts and Sciences.

Governmental Studies

MA IN GLOBAL SECURITY STUDIES / CERTIFICATE IN INTELLIGENCE

Students pursuing a Master of Arts in Global Security Studies may obtain an additional credential by completing a sequence of courses offered by the Post-Baccalaureate Certificate in Intelligence. This combined credential will require students to complete 15 courses (in lieu of 17 to complete both degrees separately). Students are required to take the following courses:

MA in Global Security Studies Requirements:

470.603	Introduction to Global Security Studies *(3 credits)*	
470.605	Global Political Economy *(3 credits)*	
470.692	Military Strategy and National Security *(3 credits)*	
470.773	Energy and Environmental Security *(3 credits)* OR	
470.601	Climate Change and National Security *(3 credits)* OR	
470.657	Energy, Security, and Defense *(3 credits)*	
470.851	Introduction to Qualitative Methods in Social Science *(3 credits)* - *This course should be taken in the second or third semester.*	
470.854	Fundamentals of Quantitative Methods *(3 credits)* OR	
470.709	Quantitative Methods *(3 credits)-Must have permission from the instructor.* OR	
470.853	Historical Methods *(3 credits)*	
470.855	Research Study Seminar *(3 credits)* - *This class must be taken as the final semester of study.* Prerequisite: Students must have passed 470.851 Introduction to Qualitative Methods in Social Science as well as 470.854 Fundamentals of Quantitative Methods or Historical Methods.	

Three electives.

Five Intelligence Certificate Requirements:

Completion of five courses, one each from the following areas (See Certificate in Intelligence for specific course options):

> Introductory Courses
> Law and Ethics
> Theory, History, and Context
> Intelligence Operations
> Applications of Intelligence

For information on exact dates, times, locations, fees, and instructors for any particular term, students should consult the course schedule available at *globalsecurity.jhu.edu* typically two and a half months before each semester begins. Courses are held at the Johns Hopkins University Washington, DC Center at 1717 Massachusetts Avenue NW, close to Dupont Circle and also online and in hybrid formats. Please note that not all courses are available each semester.

Governmental Studies

Master of Arts in Public Management

publicmanagement.jhu.edu

COURSE REQUIREMENTS

> Five core courses
> Six elective courses
> Capstone Course

For more information about core and elective courses, please visit *publicmanagement.jhu.edu*. Please note that not all courses are available each semester.

Students can locate further information on exact dates, times, locations, fees, and instructors for any term by accessing the Advanced Academic Programs course schedule at advanced.jhu.edu. Each schedule is available for several months before the semester or term begins. Classes are held at the Johns Hopkins University Washington, D.C. Center at 1717 Massachusetts Ave. NW, close to Dupont Circle or online. The degree can now be completed on-campus or online (not all courses are offered online).

Students can also choose to complete the degree with a mix of on-campus and online courses. Please see the website for a comprehensive list of approved elective courses.

CURRICULUM

The MA in Public Management program (MPM) equips students with the strategic skills needed to meet today's challenges in the public sector. This is accomplished by a rigorous and demanding curriculum taught by leading academics and practitioners in the fields of public policy and administration.

This innovative degree recognizes the interdependence of governmental and nonprofit sectors and their common ground in mission-driven performance. Students will gain an appreciation for these issues through their core courses and their electives. Twelve courses, including a capstone project, are necessary to complete the degree.

The degree program encompasses both the analytical and administrative side of public policy and management. The MA in Public Management educates students in several key disciplines: financial management, policy analysis, tax and budget policy, quantitative methods, and public administration. Students learn to apply the latest theory, scientific findings, and new management methods to help solve real-world governance and policy issues.

The curriculum is designed for working professionals in government, the public policy sector (including think tanks and advocacy organizations), and nonprofits. Courses may be

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PROGRAM ADVISING

Paul Weinstein Jr.
Director, MA in Public Management

Sarah O'Byrne
Program Coordinator, Center for Advanced Governmental Studies

taken at a full or part time pace. All undergraduate majors are welcome. Students can take any combination of on-campus and online courses, or all on-campus or all online, to complete their degree.

The Public Management program is endorsed by the Maryland Higher Education Commission and is a member of the Network of Schools of Public Policy, Affairs, and Administration (NAS PAA).

Sequence of Study

Students should make every effort to take the core course Public Policy and the Policy Process in their first semester. Students are strongly encouraged to complete the other core course requirements as early in their program of study as possible. The final required course of the program is Capstone for Public Management, which students take in their final semester. Students expecting to graduate at the completion of the summer semester should take capstone during the prior spring semester.

Capstone

The capstone process is an essential component of the MA in Public Management. It is the culmination of graduate work in the program and the final product of the degree. The capstone process is an opportunity for students to examine an in-depth, important policy or management question, with the ultimate end of developing a real solution to a problem. In the semester prior to taking the capstone course and conducting the project, students identify a project topic. The final capstone report will consist of one paper on a topic agreed to by a capstone adviser. Papers are written in the form of a decision memorandum of 35 to 40 pages in length.

Governmental Studies

CORE COURSES AND CAPSTONE

All students must successfully complete five core courses:

470.608   Public Policy Evaluation and the Policy Process
(3 credits)

470.631   Economics for Public Decision-Making *(3 credits)*

470.854   Fundamentals of Quantitative Methods *(3 credits)*

(Choose 1 from the following 2 Courses)

470.627   Financial Management & Analysis in the Public
Sector *(3 credits)* OR

470.798   Financial Management and Analysis in Nonprofits
(3 credits)

(Choose 1 from the following 2 Courses)

470.695   Proseminar: Essentials of Public and Private
Management   *(3 credits)* OR

470.728   Fundamentals of Nonprofits and Nonprofit
Management *(3 credits)*

CAPSTONE

470.860   Capstone for Public Management *(3 credits)*

ELECTIVES

Electives need to be chosen in consultation with the student's adviser and should accommodate professional and/or personal goals. Students (with the permission of the program director) may take up to two relevant course offerings from other parts of Johns Hopkins University, including the School of Public Health, the School of Advanced International Studies, and other programs in the School of Arts and Sciences.

SAMPLE ELECTIVES

470.618   Congressional Policymaking *(3 credits)*

470.619   State Politics and Policymaking *(3 credits)*

470.621   Public Policy and Participatory Government
(3 credits)

470.629   The Politics of Health Care Policy *(3 credits)*

470.634   Contemporary Terrorism and the American Response
(3 credits)

470.638   Negotiating as a Leadership Skill *(3 credits)*

470.645   The Budgetary Process *(3 credits)*

470.646   Poverty Law and Social Policy in the U.S. *(3 credits)*

470.660   Program Evaluation *(3 credits)*

470.667   The Administrative State: How Washington
Regulates *(3 credits)*

470.670   The Practice & Politics of U.S. Tax Policy *(3 credits)*

470.674   Regulations: Law of Federal Agencies *(3 credits)*

470.684   Legislative Language and Policymaking *(3 credits)*

470.688   Political Institutions and the Policy Process *(3 credits)*

470.692   Military Strategy & National Policy *(3 credits)*

470.726   Education Policy and Federalism   *(3 credits)*

470.728   Influence and Impact of Nonprofits *(3 credits)*

470.730   Intellectual Property Law *(3 credits)*

470.742   Models of Public Policy Analysis *(3 credits)*

470.744   Trade and Security *(3 credits)*

470.754   Global Climate Change and U.S. Energy Security
(3 credits)

470.771   Climate Change Economics *(3 credits)*

470.773   Energy and Environmental Security *(3 credits)*

470.774   Nonprofit Governance and Executive Leadership
(3 credits)

470.778   Federal Contracting Law *(3 credits)*

MA IN PUBLIC MANAGEMENT/ CERTIFICATE IN NONPROFIT MANAGEMENT

Students pursuing an MA in Public Management may obtain an additional credential by completing a sequence of courses offered by the Post-Baccalaureate Certificate in Nonprofit Management. This combined credential recognizes the interdependence of the governmental and nonprofit sectors and their common ground in mission-driven performance. Students who complete it will be prepared to move among the public, private, and nonprofit sectors or work for agencies that span them. This combined credential will require students to complete 16 courses (in lieu of 18 to complete both degrees separately). In addition to five electives from the public management curriculum, students are required to take the following courses:

Six MA in Public Management Requirements:

470.608   Public Policy Evaluation and the Policy Process
(3 credits)

470.631   Economics for Public Decision-Making *(3 credits)*

470.728   Fundamentals of Nonprofits and Nonprofit
Management *(3 credits)*

470.798   Financial Management and Analysis in Nonprofits
(3 credits)

470.854   Fundamentals of Quantitative Methods *(3 credits)*

470.860   Capstone for Public Management *(3 credits)*

Four Nonprofit Certificate Requirements
(Choose four from the following list of courses):

470.623   Nonprofit Program Development and Evaluation
(3 credits)

470.625   Resource Development and Marketing in Nonprofits
(3 credits)

470.666   Institutional Fundraising: Raising Maximum Dollars
from Government Agencies, Corporations, and
Foundations *(3 credits)*

470.682   Mission Meets Profit: An Exploration and Building of
a Social Enterprise *(3 credits)*

470.689   Overview of Global Public and Nonprofit
Relationship *(3 credits)*

470.774   Nonprofit Governance and Executive Leadership
(3 credits)

470.789   INGO/NGOs and Civil Society in Conflict Zones
(3 credits)

Governmental Studies

Note: If students want to transfer from the Post-Baccalaureate Certificate in Nonprofit Management to the MA in Public Management, all four nonprofit courses would count toward their masters.

MA IN PUBLIC MANAGEMENT / CERTIFICATE IN INTELLIGENCE

Students pursuing an MA in Public Management may obtain an additional credential by completing a sequence of courses offered by the Post-Baccalaureate Certificate in Intelligence. This combined credential will require students to complete 15 courses (in lieu of 17 to complete both degrees separately). In addition to four electives from the public management curriculum, students are required to take the following courses:

Six MA in Public Management Requirements:

470.608	Public Policy Evaluation and the Policy Process	*(3 credits)*
470.631	Economics for Public Decision-Making	*(3 credits)*
470.854	Fundamentals of Quantitative Methods	*(3 credits)*
470.860	Capstone for Public Management	*(3 credits)*

(Choose 1 from the following 2 courses)

470.627   Financial Management and Analysis in the Public Sector *(3 credits)* OR
470.798   Financial Management and Analysis in Nonprofits *(3 credits)*

(Choose 1 from the following 2 courses)

470.695   Proseminar: Essentials of Public and Private Management *(3 credits)* OR
470.728   Fundamentals of Nonprofits and Nonprofit Management *(3 credits)*

Five Intelligence Certificate Requirements:
Completion of five courses, one each from the following areas (See Certificate in Intelligence for specific course options):

> Introductory Courses
> Law and Ethics
> Theory, History, and Context
> Intelligence Operations
> Applications of Intelligence

MA IN PUBLIC MANAGEMENT / CERTIFICATE IN GOVERNMENT ANALYTICS

Students pursuing a MA in Public Management may obtain an additional credential by completing a sequence of courses offered by the Post-Baccalaureate Certificate in Government Analytics. This combined credential will require students to complete 15 courses (in lieu of 17 to complete both degrees separately). In addition to four electives from the public management curriculum and three electives from the government analytics curriculum, students are required to take the following courses:

Six MA in Public Management Core Courses:

470.608   Public Policy Evaluation and the Policy Process
          (3 credits)
470.631   Economics for Public Decision-Making   *(3 credits)*
470.854   Fundamentals of Quantitative Methods *(3 credits)*
470.860   Capstone for Public Management   *(3 credits)*

(Choose 1 from the following 2 Courses)

470.627   Financial Management and Analysis in the Public Sector   *(3 credits)* OR
470.798   Financial Management and Analysis in Nonprofits *(3 credits)*

(Choose 1 from the following 2 Courses)

470.695   Proseminar: Essentials of Public and Private Management   *(3 credits)* OR
470.728   Fundamentals of Nonprofits and Nonprofit Management *(3 credits)*

Two Certificate in Government Analytics Core Courses:

470.681   Political Analysis and Statistics *(3 credits)*
470.709   Quantitative Methods *(3 credits)*

Master of Science in Government Analytics

advanced.jhu.edu/govanalytics

DEGREE REQUIREMENTS

Students complete 12 courses to earn their degree.

> Five core courses (includes capstone project)

> Seven elective courses

For more information about core and elective courses, please see the AAP website at *advanced.jhu.edu/govstudies*. Please note that not all courses are available each term.

Students can locate further information on exact dates, times, locations, fees, and instructors for any term by accessing the Advanced Academic Programs course schedule at advanced.jhu.edu. Each schedule is available for several months before the semester or term begins. Courses are primarily offered online, though a few on-site courses are offered each term. On-site courses are held at the Johns Hopkins University Washington, DC Center at 1717 Massachusetts Ave. NW, close to Dupont Circle.

CURRICULUM

The Johns Hopkins MS in Government Analytics prepares students to undertake sophisticated quantitative analyses to address political, policy, and governance challenges. No prior coursework in quantitative methods is required.

Students will develop broadly applicable, foundational skills in quantitative methods as well as expertise in statistical analysis, geospatial analysis, political behavior, and policy analysis or public management. Twelve courses, including a capstone project, are required to complete the degree.

The schedule for completing the degree is flexible. The degree can be completed fully online, and most courses are offered only online. All online courses are offered asynchronously, meaning students do not need to log in at a required time to take the course. Coursework is completed through weekly lesson modules that students log into at times that are convenient and within the course schedule. A few courses are offered on-site each term at our Washington, DC Center, which is located near Dupont Circle. Classes are held on weekday evenings. Students are welcome to take a combination of on-site courses and online courses if they wish.

Sequence of Study

Most students who work full-time take two courses per term. It is recommended that students begin the program by taking 470.681 Statistics and Political Analysis along with one elective

PROGRAM ADVISING

Jennifer Bachner, Ph.D.

Director, MS in Government Analytics and Certificate in Government Analytics

followed by 470.709 Quantitative Methods with one elective. Students should then work through the additional core and elective requirements. The final required course, Capstone for Government Analytics (470.862), should be completed during the student's final term.

Concentrations

There are four concentrations offered through the MS in Government Analytics. The concentration in Statistical Analysis focuses on the use of statistics to make government-related decisions. The concentration in Geospatial Analysis focuses on the applied use of spatially-distributed data. The concentration in Political Behavior and Policy Analysis prepares students to evaluate campaigns, elections, political institutions, and government programs using quantitative methods. Finally, the concentration in Public Management provides students with the tools and skills needed to solve management issues related to policy, finance, and administration. Pursuing a concentration is optional. To earn a concentration, four of the student's electives must be in the concentration area.

Capstone

In the Capstone for Government Analytics course (470.862), students will develop and execute an original data analysis project. The purpose of this project is to address a political, policy, or governance challenge through a thoughtful and rigorous data analysis. Students will present the results of their analysis in writing and offer actionable recommendations.

CORE COURSES

Students must take five core courses (including the Capstone Seminar):

1. 470.681   Statistics and Political Analysis *(3 credits)*

2. 470.709   Quantitative Methods *(3 credits)*

3. 470.710   Advanced Quantitative Methods *(3 credits)*

4.   One of the following:

   430.615   Big Data Analytics: Tools and Techniques *(4 credits)*
   470.660   Program Evaluation *(3 credits)*
   470.673   Data Visualization *(3 credits)*
   470.694   Big Data Management System *(3 credits)*
   470.699   Applied Performance Analytics *(3 credits)*
   470.738   Time Series Models and Forecasting *(3 credits)*

5.   470.862   Capstone Seminar: Development and Execution of a Data Analysis Project *(3 credits)*

ELECTIVES

With approval of the program director, students may also choose electives from selected degree programs within Advanced Academic Programs, including Government, Global Security Studies, Applied Economics, Communication and Energy Policy and Climate.

Sample Electives

430.601   Geographic Information Systems *(4 credits)*
430.617   Demographics Modeling with GIS *(4 credits)*
470.631   Economics for Public Decision Making *(3 credits)*
470.643   Text as Data *(3 credits)*
470.667   Machine Learning and Neural Networks *(3 credits)*
470.708   Unleashing Open Data with Python *(3 credits)*
470.731   Privacy in a Data-driven Society *(3 credits)*
470.743   Data Mining and Predictive Analytics *(3 credits)*
470.758   Data-Driven Campaigns and Elections *(3 credits)*
470.764   Survey Methodology *(3 credits)*
470.769   Data Science for Public Policy *(3 credits)*

MS IN GOVERNMENT ANALYTICS / CERTIFICATE IN INTELLIGENCE

Students pursuing an MS in Government Analytics may obtain an additional credential by completing a sequence of courses offered by the Post-Baccalaureate Certificate in Intelligence. This combined credential will require students to complete 15 courses (in lieu of 17 to complete both degrees separately). Students are required to take the following courses:

Five Intelligence Certificate Requirements:
Completion of five courses, one each from the following areas (See Certificate in Intelligence for specific course options).

> Introductory Courses
> Law and Ethics
> Theory, History, and Context
> Intelligence Operations
> Applications of Intelligence

Governmental Studies

Certificate in Government Analytics

advanced.jhu.edu/govanalytics/cert

COURSE REQUIREMENTS

Two core courses:

470.681   Statistics and Political Analysis
470.709   Quantitative Methods

Three elective courses in one or more of the following specialty areas:

> Statistical analysis

> Geospatial analysis

> Political behavior and policy analysis

> Public management

Students will work with the program director to determine which electives are appropriate for the student's selected specialty area(s). For more information about core and elective courses, please see *advanced.jhu.edu/govstudies*. Please note that not all courses are available each term.

Students can locate further information on exact dates, times, locations, fees, and instructors for any term by accessing the Advanced Academic Programs course schedule at *advanced.jhu.edu*. Each schedule is available for several months before the semester or term begins. Courses are primarily offered online, though a few on-site courses are offered each term. All on-site courses are held at the Johns Hopkins University Washington, DC Center at 1717 Massachusetts Ave. NW, close to Dupont Circle.

CURRICULUM

The Johns Hopkins Certificate in Government Analytics provides students with the knowledge and skill set needed to perform sophisticated analyses, draw substantive conclusions, and communicate results for the purpose of improving the function of government. No prior coursework in quantitative methods is required. Students will develop foundational skills and expertise in a specialty area of analysis. Five courses are required to complete the program.

The schedule for completing the program is flexible. The program can be completed fully online, and most courses are offered only online. All online courses are offered asynchronously, meaning students do not need to log in at a required time to take the course. Coursework is completed through weekly lesson modules that students log into at times that are convenient and within the course schedule. A few

PROGRAM ADVISING

Jennifer Bachner, Ph.D.

Director, MS in Government Analytics and Certificate in Government Analytics

courses are offered on-site each term at our Washington, DC Center, which is located near Dupont Circle. Classes are held on weekday evenings. Students are welcome to take a combination of on-site courses and online courses if they wish.

Sequence of Study

Most students who work full-time take two courses per term. It is recommended that students begin the program by taking 470.681 Statistics and Political Analysis along with one elective. In the following term, it is recommended that students take 470.709 Quantitative Methods along with one elective. Students can then complete the last elective in their final term of the program.

Certificate in Intelligence

advanced.jhu.edu/intelligence

The Johns Hopkins Post-Baccalaureate Certificate in Intelligence is designed for students who are interested in pursuing or advancing careers in intelligence, be it in analysis, human or technical collection, or counterintelligence. It is also useful for professionals in the policy and operational world whose careers involving consuming intelligence.

The certificate can stand on its own as a credential, or students can pair it with the MA in Global Security Studies, MA in Government, MS in Government Analytics, or MA in Public Management for a combined credential. (See the sections for those master's degrees for further details.) Students availing themselves of one of these options can count two of their intelligence studies courses toward their Master's degree elective requirements.

The Certificate in Intelligence also has a partnership with the Cambridge Security Initiative and the War Studies Department of King's College, London under which each summer five competitively chosen Johns Hopkins students can satisfy one of their Certificate requirements through summer study at Cambridge University in the United Kingdom. (See 470.707 International Security and Intelligence.)

ADMISSION REQUIREMENTS

> AAP application and fee

> Official undergraduate transcript indicating a minimum grade-point average of 3.0 on a 4.0 scale

> Official graduate transcripts, if any

> A current résumé

> Two letters of recommendation

> A statement of purpose outlining why you wish to study at JHU and how studying at JHU will help you realize your ambitions

COURSE REQUIREMENTS

Students must pass one course from each of five categories. All courses are three (3) credits unless otherwise noted.

Introduction

470.620	Introduction to Intelligence in the Five Eyes Community
470.711	Intelligence: From Secrets to Policy
470.748	The Art and Practice of Intelligence

PROGRAM ADVISING

Mark Stout
mstout4@jhu.edu
202.663.5978

Program Director, MA in Global Security Studies, Certificate in Intelligence, Certificate in Science, Technology, and International Security (STIS)

Theory/Context

470.620	Introduction to Intelligence in the Five Eyes Community *(If not used to satisfy "Introduction" requirement.)*
406.667	Social Science, National Security, and Intelligence
470.680	The Rise and Fall of Intelligence
470.760	Comparative Intelligence Systems
TBD	The Evolution of American Intelligence

Law and Ethics

470.650	Legal Issues in Intelligence and National Security
470.696	Ethics and Privacy in Intelligence Operations
470.731	Privacy in a Data-Driven Society
470.795	The Constitution and National Security

Operations

430.601	Geographic Information Systems *(4 credits)*
430.602	Remote Sensing: Earth Observing Systems and Applications *(4 credits)*
470.607	Counterintelligence and National Security: 21st Century Challenges
470.643	Text as Data *(with permission of instructor)*;
470.665	Covert Action and National Security
470.719	Technical Collection of Intelligence
470.740	Cyber Policy, Strategy, Conflict and Deterrence
470.743	Data Mining and Predictive Analytics *(with permission of instructor)*
470.752	Intelligence Analysis
472.600	Introduction to Geospatial Intelligence

Applications

470.668	The Politics and Process of American Foreign Policy
470.697	Intelligence and Counter-Terrorism
470.707	International Security and Intelligence *(if not used to satisfy "Theory/Context" requirement)*
470.722	Defense Intelligence in War and Peace
470.797	Introduction to Homeland Security Intelligence

Governmental Studies

For information on exact dates, times, locations, fees, and instructors for any particular term, students should consult the course schedule available at intelligence.jhu.edu typically two and a halfmonths before each semester begins. Courses are held at the Johns Hopkins University Washington, DC Center at 1717 Massachusetts Avenue NW, close to Dupont Circle,onlineand in hybrid formats. 470.707 is offered in the United Kingdom.

Certificate in Science, Technology, and International Security

national-security.jhu.edu

The Post-Baccalaureate Certificate in Science, Technology, and International Security (STIS) draws on academics and seasoned practitioners in cyber operations, environmental sciences, biological sciences, big data, energy policy, security studies, intelligence, and government in order to provide students with the tools to analyze the security threats and opportunities inherent in scientific and technological developments.

Cyberattacks, weapons proliferation, climate change, energy security, and drones are just a few of the science and technology-related security issues that affect the security of the United States and the world today. The Post-Baccalaureate Certificate in Science, Technology, and International Security brings together courses from many different disciplines into a highly customizable program. Our goal is to help students excel and advance in their careers by helping them gain an understanding of how science and technology issues play in the security realms of defense, diplomacy, and intelligence.

This program is useful for students who are interested in science and technology in a national security or international security context but who come from a social science or humanities background. This program is also useful for students with an established background in a science or technology field or in quantitative analysis who wish to make themselves more marketable in the national security or international security fields. Such students may be able to take advanced electives.

Students in the STIS program will be able to draw on courses from several programs around Johns Hopkins. These include courses offered by the Science, Technology and International Security program itself. They also include courses offered by our partner programs:

> Biotechnology

> Energy Policy and Climate

> Environmental Sciences and Policy

> Geographic Information Systems

> Global Security Studies

> Government

> Government Analytics

> Intelligence

Students in this program can study on the ground, online, or in any combination that suits their needs.

PROGRAM COMMITTEE

Benjamin Ginsberg
David Bernstein Professor of Political Science; Chair of the Center for Advanced Governmental Studies

Bertrand Garcia-Moreno
Professor of Biology, Program Chair; Advanced Biotechnology Studies

Mark Stout
Program Director, Science, Technology and International Security

ADMISSION REQUIREMENTS

Application Documents

Submit to Advanced Academic Programs Admissions Office (aapadmissions@jhu.edu or fax 202-452-1970):

> AAP application and fee

> Official undergraduate transcript indicating a minimum grade-point average of 3.0 on a 4.0 scale

> A current résumé

> Two letters of recommendation

> A statement of purpose outlining why you wish to study at JHU and how studying at JHU will help you realize your ambitions

COURSE REQUIREMENTS

Students take three core courses, one from each of the following areas.

> Security Studies

> Science and Technology

> Science and Technology Policy

In addition, students select two electives, for a total of five courses.

Governmental Studies

Courses that count toward the Certificate are offered by a number of partner programs.

> Biotechnology courses have a 410 prefix.

> Environmental Sciences and Policy courses have a 420 prefix.

> Energy Policy and Climate courses have a 425 prefix.

> Geographic Information Systems courses have a 430 prefix.

> Global Security Studies, Government, Government Analytics, and Intelligence courses have a 470 prefix.

> Geospatial Intelligence courses have a 472 prefix.

Please refer to the Advanced Academic Programs course schedule *(advanced.jhu.edu)* for exact dates, times, locations, fees, and instructors. Courses are open only to students who meet admission requirements.

CORE COURSES

The Certificate in Science, Technology, and International Security has three core requirements. Students must take one class from each of the following three areas. Courses on these lists not taken as core courses may be taken as electives. All courses are three graduate credits unless stated otherwise. Note that some courses have pre-requisites or assume certain knowledge. When in doubt, contact the director of the program offering the course.

Security Studies
470.603	Introduction to Global Security Studies
470.692	Military Strategy and National Policy

Science and Technology
410.692	Biological & Chemical Threat Response & Forensics *(4 credits)*
410.693	Science, Medicine, & Policy in Biodefense *(4 credits)*
420.608	Oceanic and Atmospheric Processes
425.601	Principles and Applications of Energy Technology
425.602	Science of Climate Change
430.601	Geographic Information Systems *(4 credits)*
430.602	Remote Sensing: Earth Observing Systems and Applications *(4 credits)*
470.667	Machine Learning and Neural Networks
470.673	Data Visualization
470.709	Quantitative Methods
470.719	Technical Collection of Intelligence
470.743	Data Mining and Predictive Analytics
470.750	Big Data Analytics: Tools and Techniques
470.777	Technology and Terrorism
470.784	Technology of Weapons of Mass Destruction
470.786	Weapons of War: The Technology and Uses of Weapons
470.790	Impact of Science on National Security
470.854	Fundamentals of Quantitative Methods
472.600	Introduction to Geospatial Intelligence

Other courses as they are developed.

Science and Technology Policy
470.601	Climate Change and National Security
470.654	Deterrence in the 21stCentury
470.657	Energy, Security, and Defense
470.685	The Challenge of Change: Innovation in Military Affairs
470.696	Ethics and Privacy in Intelligence Operations
470.731	Privacy in a Data-driven Society
470.740	Cyber Policy, Strategy, Conflict and Deterrence
470.742	The Politics of Cybersecurity
470.752	Intelligence Analysis
470.767	Defense Policy
470.773	Energy and Environmental Security
470.790	Impact of Science on National Security *(if not used to satisfy the above requirement).*
470.797	Introduction to Homeland Security Intelligence

Other courses as they are developed

ELECTIVE COURSES

STIS students must also complete two electives. Eligible electives include any of the above courses if not used to satisfy core requirements. In addition, students may satisfy their elective requirements with course from STIS' partner programs. Please refer tothe relevant sections in this catalog for lists of courses offered by those programs. Note that some courses have pre-requisites or assume certain knowledge. When in doubt, contact the director of the program offering the course.

Certificate in Science, Technology, and International Security (STIS) Pairings (OPTIONAL)

MS in Biotechnology/ Certificate in Science, Technology, and International Security

The Certificate in Science, Technology and International Security may also be taken with the MS in Biotechnology. Applicants interested in pursuing both degrees simultaneously should apply to the combined program. Current students enrolled in either the MS in Biotechnology or the STIS Certificate may apply for a change of program into the combined program prior to the completion of the initial degree or certificate.

Admission in either the certificate or the MS in Biotechnology neither confers nor implies admission to the other program. The decisions on admission to each program are made by their respective admission committees alone.

Enrolled students must complete all of thirteen courses. This entails completing the requirements of the MS in Biotechnology with a concentration in biodefense. This must include 410.692 Biological & Chemical Threat Response & Forensics and 410.693 Science, Medicine, & Policy in Biodefense. Students will take three additional courses:

1. 470.603 Introduction to Global Security Studies or 470.692 Military Strategy and National Policy

2. Science and Technology Policy Core Course

3. Elective from the Global Security Studies, or Intelligence programs (470 prefix courses).

MS in Energy Policy and Climate/Certificate in Science, Technology and International Security

The Certificate in Science, Technology and International Security may also be taken in combination with the MS in Energy Policy and Climate. Those with an interest in both programs should apply to the combined program.

Students choosing this option must meet the following course of study:

1. 425.601   Principles and Applications of Energy Technology *(3 credits)*

2. 425.602   Science of Climate Change and its Impact *(3 credits)*

3. 425.603   Climate Change Policy Analysis *(3 credits)*

4. 425.604   Energy and Climate Finance *(3 credits)*

5. 425.800   Capstone Project in Energy Policy and Climate *(3 credits)*

6. 470.610   Introduction to Global Security Studies *(3 credits)* OR
    470.692   Military Strategy and National Policy *(3 credits)*

7. 470.773   Energy and Environmental Security *(3 credits)* OR
    470.601   Climate Change and National Security *(3 credits)* OR
    470.657   Energy, Security and Defense *(3 credits)*

8. An additional elective from the Global Security Studies or Intelligence programs (470 prefix) or the Geospatial Intelligence program (472 prefix)..

9. Five elective courses from Energy Policy and Climate or other environmental program (Environmental Sciences and Policy or Geographic Information Systems.)

Certificate in Nonprofit Management

nonprofit.jhu.edu

The fully online Certificate in Nonprofit Management recognizes the substantial role nonprofits play in the formulation and delivery of public services, and as vehicles for citizen influence and expression. The course work focuses on building the specific analytical and management skills needed by those assuming leadership roles as executive staff or board members in a variety of nonprofit fields. All the courses feature a global perspective for relevance in today's world of interconnected economies and communication.

For students already working in nonprofit subspecialties, such as arts and culture, health, environmental conservation, or international development, the courses will show how their fields fit into the larger nonprofit sector and how the larger forces affect their own leadership and management challenges. The courses are also relevant for students pursuing careers in government agencies that require extensive interaction with nonprofits in the U.S. or other countries.

For students in other countries, the courses offer a greater understanding of the role and potential of nongovernmental organizations, and convey the best practices emerging from the American experience and from other countries with an advanced or growing nongovernmental sector.Students are able to take courses at a full-or part-time pace. The curriculum is designed for working professionals in the government and nonprofit sectors who are looking to expand their expertise in nonprofit management with the latest skills and approaches taught by faculty members at the forefront of their field.

COURSE REQUIREMENTS

Six online courses are necessary to complete the certificate. It is strongly recommended that students take 470.728 Fundamentals of Nonprofits and Nonprofit Management and 470.798 Financial Management and Analysis in Nonprofits before enrolling in the four remaining courses. These two courses are offered every semester. Students may complete the certificate on its own or in addition to designated combined degree programs at Johns Hopkins University.

Students may select six of the following nine courses:

470.623	Nonprofit Program Development and Evaluation *(3 credits)*
470.625	Resource Development and Marketing in Nonprofits *(3 credits)*
470.666	Institutional Fundraising: Raising Maximum Dollars from Government Agencies, Corporations, and Foundations *(3 credits)*

PROGRAM ADVISING

Karin Orr
Program Coordinator

470.682	Mission Meets Profit: An Exploration and Building of a Social Enterprise *(3 credits)*
470.689	NGOs in Development and Global Policy-Making *(formerly Overview of Global Public and Nonprofit Relationship) (3 credits)*
470.728	Fundamentals of Nonprofits and Nonprofit Management *(formerly Influence and Impact of Nonprofits) (3 credits)*
470.774	Nonprofit Governance & Executive Leadership *(3 credits)*
470.789	INGO/NGOs and Civil Society in Conflict Zones *(3 credits)*
470.798	Financial Management and Analysis in Nonprofits *(3 credits)*

Certificate In Nonprofit Management/ Masters Dual Degree

Students pursuing a Certificate in Nonprofit Management who are interested in furthering their education may enroll in the combined degree program offered with MA programs in Public Management, Museum Studies, or Communication. This enables students to earn both the MA degree and a graduate certificate. Those interested have the option to apply to the combined MA through Advanced Academic Programs. Current students can submit a Change of Program request. Please see page 13 for more information on that process.

For more information on specific dual degree programs, please see below:

Governmental Studies

ONLINE LEARNING

All online classes are offered as asynchronous learning experiences, allowing maximum flexibility in a student's schedule. Course content is delivered mainly via text notes, voice-over PowerPoints, streaming video, and threaded discussions to provide a connection between students and faculty. Classes are kept small (15 students on average) to encourage active community building among fellow students and students and faculty. Pre-arranged real-time online meetings allow for direct access to faculty members. A Blackboard orientation course introduces the students to the online learning tools and is required before taking the first online class.

Master of Liberal Arts

mla.jhu.edu

Established in 1962, the Johns Hopkins Master of Liberal Arts (MLA) Program has gained national recognition for the quality of its teaching and the breadth of its course offerings. The MLA thrives on the curiosity, passion, and diversity of its students. The MLA is a unique, non-traditional graduate degree. Whereas most graduate programs ask you to become more and more specialized, the MLA expects you to both broaden and deepen your educational experience. MLA students interact with professors and one another in a stimulating learning environment, both on the ground at the Homewood campus and online in an asynchronous format compatible with all work schedules andtime zones.

In consultation with their academic adviser, candidates for the Master of Liberal Arts degree enroll in interdisciplinary courses that draw from a wide range of subjects, including history, philosophy, religion, literature, music, art history, African-American studies, environmental studies, digital humanities, critical theory, psychology, and sociology. Given the breadth and flexibility of our program, the MLA is able to meet a range of different goals and expectations among our students. Ourstudents represent the full range of working professions and are at all stages of their careers.

The mission of JHU's MLA Program is to provide a rigorous, immersive interdisciplinary liberal arts education. The program is designed to serve independent thinkers from a variety of academic, professional, and personal backgrounds.

Core Values

> To develop a community of adult learners who think outside of their own experience and comfort levels

> To develop critical writing and thinking skills

> To encourage students to develop a unique "way of knowing"

> To transcend disciplinary boundaries and limitations

> To consider fundamental human values

ADMISSION REQUIREMENTS

In addition to the materials and credentials required for all programs, the Master of Liberal Arts requires:

Credentials

Bachelor's degree from a regionally accredited US college or university. The program requires a minimum cumulative GPA of 3.0 on a 4.0 scale in the latter half of undergraduate studies. Meeting the minimum GPA requirement does not guarantee

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PROGRAM CHAIR AND DIRECTOR

Pier M. Larson
Chair, MLA Program; Professor

Laura A. DeSisto
Program Director, MLA Program;
Senior Lecturer

Tristan Cabello
Assistant Director, MLA Program;
Senior Lecturer

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admission. Particular interests and work experience may also be considered. Applicants who received their bachelor's degree in a country outside of the United States are required to provide a course-by-course credential evaluation and TOEFL scores if English is not their first language.

If you are fewer than five years from completing of a bachelor's degree, the transcript is an important component in the admissions decision. Having a cumulative GPA that is under 3.0 is not automatic grounds for rejection. Students in that situation should explain relevant extenuating circumstances in their admissions essay. If your transcripts are ten or more years old, the life experience of the applicant becomes an important factor in the review of their admissions materials. The Admissions Committee reserves the right to request additional information from applicants to assess their candidacy for admission.

Application Documents

> AAP application and fee

> Current résumé

> Statement of purpose summarizing the applicant's personal, academic, and/or professional goals

> Official undergraduate transcripts and (if applicable) graduate transcripts

Advanced Standing

Advanced Standing allows students who have completed graduate-level courses in a comparable Master of Liberal Arts Program, MA Program or Certificate Program at an accredited institution to be exempt from taking up to two courses (six credit hours) towards degree completion. To be considered

for Advanced Standing, you must have received a grade of A or A+ in the course(s) for which you are requesting Advanced Standing, and the request for Advanced Standing must be made as part of your application to the MLA Program. In your application materials, please include the syllabi from the courses you would like to have evaluated for Advanced Standing status.You are welcome to contact the Program Director before submitting your application to determine whether courses for which you would like to request Advanced Standing meet the MLA Program's guidelines.

No Application deadline

Applications are accepted year-round and students may apply to enroll for summer, fall or spring semesters. Although there are no strict application deadlines, we recommend that all application materials be submitted at least 6 weeks prior to the start of the semester (international students should apply at least 3 months before the semester starts). For more information about our application process, click here.

Applicants who have questions regarding admissibility should contact the MLA Program Director.

Limited Fellowships Available for MLA Students

After successfully completing two courses, fully-admitted students may apply for limited semester-longtuition fellowships. Application forms are available from the MLA Program Director.

COURSE REQUIREMENTS

Ten three-credit hour courses, including:

> One interdisciplinary core within the first three courses, to be approved on a student-by-student basis by the academic adviser, plus either:

- Eight electives and a three-credit Thesis or Internship for the Capstone

- Nine electives and a zero-credit Graduate Portfolio for the Capstone.

For information on MLA course offerings, as well as exact dates, times, fees, and instructors, students should consult the course schedule available at *mla.jhu.edu.*

UNIVERSITY OF CAMBRIDGE SUMMER PROGRAMME

Since 1992, students in the MLA program have had the option of taking one summer course at the University of Cambridge in England to transfer as an MLA elective. For details about registration, which is not done through the MLA program, please review the website at the link below and contact the MLA program director for further details: *https://www.ice.cam.ac.uk/ courses/international-summer-programmes/how-apply.*

Credit for one successfully completed course will be applied to your degree once we receive your transcript.

CERTIFICATE OF ADVANCED GRADUATE STUDY IN LIBERAL ARTS

The Certificate of Advanced Graduate Study in Liberal Arts is open to students who have earned a Master of Liberal Arts degree from JHU or an equivalent degree from another institution. It consists of 10 courses. Applicants must submit the standard application, though JHU MLA graduates need not send any additional materials beyond the application or pay an application fee.

Liberal Arts

Master of Arts in Museum Studies

An Online Master's Degree Program

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museum-studies.jhu.edu

To prepare current and future museum professionals to be the visionary leaders of museums in contemporary society, Johns Hopkins University offers an innovative Master of Arts in Museum Studies. The format of the program itself—an almost fully online program—looks to the future. As an online program, we are able to offer the expertise of highly regarded professors and museum professionals from around the world, innovative virtual field trips, and global resources from a wide array of museums brought together in new and exciting ways. An international student body provides diverse perspectives and experiences in a dynamic online learning environment.

Museums of the 21st century are in the midst of a tremendous period of growth and change. New demands and challenges are emerging in every aspect of the museum landscape. Innovations in information and communication technologies are being integrated into the core strategies of the museum. Museums are increasing in number, expanding in size, and attracting more diverse audiences every day. The museums of the 21st century need leaders with the knowledge and skills to face these challenges and who possess a vision for the future.

The aim of this program is to provide a perspective on the theory and practice of museums in a changing technological, social, and political environment for current and future museum professionals. It emphasizes the role of technology as a pervasive aspect in today's museum; examines new models of education, exhibition, and business strategies; and explores the role of the museum in a global society and as an agent of social change.

We welcome students interested in all types of museums, including history, technology, science, art, special topic or themed museums, historic sites, national parks, and zoos, and those interested in collections and exhibitions for corporations, government agencies, and private organizations.

DEGREE REQUIREMENTS

All students earn a Master of Arts (MA) in Museum Studies. Nine online classes and one on-site seminar are required to complete the degree. These 10 courses are made up of two required courses, three core courses, and five electives, which must be completed within five years of beginning the graduate program.

Online Classes

All online classes are offered as asynchronous learning experiences, allowing maximum flexibility in a student's schedule. Students can log on to an easy-to-use course management system at any time, from anywhere, 24 hours a day

PROGRAM COMMITTEE

Rebecca M. Brown
Associate Professor, History of Art; and Program Chair

Phyllis Hecht
Program Director

Sarah Chicone
Associate Director and Cultural Heritage Management

Karen Wizevich
Program Coordinator and Full-Time Faculty

Judith Landau
Internship Coordinator and Faculty

Joyce Ray
Program Coordinator and Faculty, Digital Curation

and 7 days a week. Courses are structured around weekly course content, and students log on multiple times a week at their convenience to access course materials, participate in discussion, submit assignments, or take exams. Course content is delivered mainly via text, multimedia presentations, and threaded discussions. As an online program, we use the Internet to its full potential, and learning is enhanced through the most up-to-date Web-based tools for design, collaboration, conferencing, and community building. Classes are kept small (15 to 17 students) to encourage active engagement and community among students and faculty. Students have direct access to faculty in their courses and can arrange one-on-one student/ faculty member online meetings in real time.

To address student concerns or questions about an online learning environment, an orientation course, offered by the university, introduces the student to the online learning tools, and is required before taking the first online class.

Onsite Seminar

A two-week intensive period of on-ground museum study in a location organized by the MA in Museum Studies program is a required component of the program. The seminar includes practicum opportunities in a variety of museum settings, conversations with local museum professionals, observation of and interaction with museum visitors, and class sessions to integrate the daily experiences. Using the rich diversity of museums, this course provides students with the chance to use what they have learned in their prior courses, develop networks with fellow students and museum experts, and explore the latest in museum practice, including exhibition design and development, public programming, collections management, conservation, and the uses of technology in the museum. Seminars have taken place in locations as diverse as Washington, DC, New York, Philadelphia, Atlanta, Chicago, San Diego, London, Berlin, and Barcelona. Students work in teams on directed activities during the two-week period. Note: Students must have completed a minimum of two courses in the program, although four or more courses are encouraged, to register for this course. One of these courses must be 460.601 or 460.602 and some seminars may have other specific requirements. Students are responsible for travel to and from the location, accommodations, and meals, as well as any specified field trip fees.

Waiver option: Students who are unable to travel to a seminar location due to accommodation needs, financial hardship, or family challenges may apply to the program director for an exemption to the two-week seminar.

If a waiver is granted, the student must enroll in the internship option (460.750) to fulfill the on-site component of the degree requirement.

COMMUNITY

Students

Students in the MA in Museum Studies program include current and aspiring museum professionals from around the world. We have students from a variety of academic and professional backgrounds, including those with degrees in areas such as art history, anthropology, history, economics, business administration, historic preservation, biology, archeology, music, philosophy, and film and media arts.

Faculty

The MA in Museum Studies faculty is made up of highly regarded experts in the museum field and academia from diverse geographic locations. The faculty is primarily full-time museum practitioners who are active members of the museum community. They are passionate about training the next generation of museum professionals and enthusiastic about the online course format.

Advisers

All MA in Museum Studies students are assigned an adviser who will help determine which courses are best for their career goals.

Alumni

Alumni from the program hold positions such as museum director, curator of collections, exhibition coordinator, registrar, director of education and public programs, visitor services manager, and social media coordinator. The program maintains close ties with our alumni, and they serve as ambassadors to new students.

Network

As an online program, we offer students valuable opportunities to meet museum professionals from around the world. We build a community within the program through social media tools and a virtual museum café, where students meet others in the program, find internship and job announcements, and learn about relevant conferences and events.

ADMISSION REQUIREMENTS

> A bachelor's degree from an accredited college or university

> A grade-point average of at least 3.0 on a 4.0 scale
   For students who have been out of school for some time, museum work experience—employee, intern, or volunteer— may also be considered.

> Strong writing skills

Application Documents

> AAP application and fee

> A current résumé or CV

> Two letters of recommendation that verify professional and/or academic accomplishments

> A statement of purpose (approximately 750 words). This statement should describe how your academic and professional experiences have led to your decision to pursue a career in the museum field and how this museum studies degree will help you succeed in your goals in the museum profession. If you have worked for a museum in any capacity, please incorporate your experience into your statement. Your statement will be reviewed for content, organization, and writing style.

> Official undergraduate and graduate transcripts from all institutions attended

> International students must submit TOEFL scores and a "course-by-course" credential evaluation of their undergraduate and graduate (if applicable) transcripts performed by an outside evaluation service.

All students who earned their postsecondary degree(s) in a country other than the United States must submit a "course-by-course" credential evaluation performed by an outside evaluation service.

International students, see *advanced.jhu.edu/prospective-students/ international-applicants/* for more information.

Museum Studies

Advanced Standing

Advanced Standing allows consideration for those who have graduate-level coursework from an accredited college or university to be exempt from taking up to two courses towards degree completion. To be considered for advanced standing, you must meet the following criteria:

> Completed graduate-level courses from a Museum Studies degree or certificate program of an accredited university; OR

> Graduated from the Johns Hopkins University Museums and Society undergraduate program; AND

> Earned an A or A+ in the course being considered for an advanced standing waiver within the past three years

The following materials are required and will need to be uploaded to your online application for each course:

> Syllabi for the course(s) being submitted for advanced standing, including name of University and program attended

> Course number(s) of JHU elective course(s) considered for exemption

CURRICULUM

The MA in Museum Studies offers a structured curriculum of required and core courses augmented with electives. This curriculum provides opportunities for students to gain the knowledge and skills necessary for current professional museum practice with an eye to the future and an integration of past philosophies. The program encompasses both theory and practice, focusing on providing real-world skills and training that enable students to move into the museum field or advance into jobs with more responsibility.

Students must take a total of 10 courses

> Exploring Museum Professions (460.601) OR Museums in the Digital Age (460.602)

> Three core courses

> On-site two-week seminar (460.610)

> Five elective courses

An internship at a student's local museum, approved by the internship coordinator, may be substituted for one elective course. Students may take courses offered in the MA in Cultural Heritage Management program or up to two courses in other JHU programs as electives, subject to the approval of the director of each program. Note: Students may not earn a C in a core course or required course. If you earn a C in a core or required course, you must either repeat the course or take another core or required course to count toward your degree. Degree candidates who receive a second C or below in either a repeated core course or any course taken in the program will be dismissed from the program.

REQUIRED COURSES

Students are required to take either 460.601 or 460.602; and 460.610

460.601	**Exploring Museum Professions**	*(3 credits)*
460.602	**Museums in the Digital Age**	*(3 credits)*
460.610	**Two-Week On-site Seminar**	*(3 credits)*

CORE COURSES

Choose three out of five.

460.604	**Introduction to Museum Education**	*(3 credits)*
460.606	**Exhibition Strategies**	*(3 credits)*
460.608	**The Business of Museums**	*(3 credits)*
460.611	**History & Philosophy of Museums**	*(3 credits)*
460.666	**Collection Management**	*(3 credits)*

ELECTIVES

Choose five of the following.

460.609	Museums in a Global Perspective
460.612	Multimedia History, Theory, and Practice
460.615	Museums and Community Engagement
460.616	Museums, Law, and Policy
460.618	Museum Controversies: Ethical Issues in Museums
460.619	Museums, Race, and Inclusion
460.620	Accessibility in the Museum
460.621	Evaluation Theory & Techniques for Museums
460.628	Architecture of Museums
460.630	Exhibition Design, Construction, and Documentation
460.632	The Practice of Public History
460.633	Core Aspects of Conservation: A 21st-Century Approach
460.634	Museums, Libraries, and Archives: Issues of Convergence for Collecting Institutions
460.635	Curatorship: Principles and Practices
460.636	Living Collections
460.637	Curating Online Exhibitions and Experiences
460.638	Preservation of Analog and Digital Photographs
460.639	Material Culture and the Modern Museum
460.640	Educational Programming for Museum Audiences
460.641	Digital Media in the Museum
460.645	Museums and Mobile: Adapting to Change
460.652	The Practice of Museum Publishing
460.655	Expanding Roles of Museum Marketing and Communications
460.657	Fundamentals of Museum Fundraising
460.660	Culture and Management of Technology in Museums
460.662	Developing Museum Web Projects
460.663	Social Media Strategies for Museums
460.665	Introduction to Archives
460.667	Collection Management Systems
460.668	Cataloging Museum Collections: History, Standards, and Applications
460.670	Digital Preservation

Museum Studies

460.671   Foundations of Digital Curation
460.672   Managing Digital Information in Museums
460.673   Digital Curation Certificate Internship
460.674   Digital Curation Research Paper
460.675   Leadership of Museums
460.682   Museum Procurement and Contracting
460.683   Project Management in Museums
460.684   Museums, Finance, and the Economy
460.685   Private Collections and Museums: The New Frontier
460.686   Culturally Specific Museums
460.690   Science, Society, and the Museum
460.691   Innovation and the Modern Museum
460.695   Museums of the Americas: Facing Challenges in the 21st Century
460.750   Museum Internship
460.755   Museum Projects

MA IN MUSEUM STUDIES/ CERTIFICATE IN NONPROFIT MANAGEMENT

Students pursuing an MA in Museum Studies who are interested in furthering their management education may enroll in the combined degree program offered with the Certificate in Nonprofit Management. Museum studies students may earn the Certificate in Nonprofit Management by taking an additional four of the six online courses necessary to complete the certificate, provided they have taken 460.608 The Business of Museums as a core course and have had at least one of the museum studies electives listed below. This enables students to earn both the MA degree and a graduate certificate for a total of 14 courses, 10 in museum studies and four in nonprofit management. Those interested should apply to the combined MA in Museum Studies/Certificate Nonprofit Management through Advanced Academic Programs. Current students can submit a Change of Program request. Please see page 13 for more information on that process.

MA in Museum Studies students pursuing the Nonprofit Management Certificate must meet the following course requirements:

Courses from the MA in Museum Studies

Ten courses from the MA in Museum Studies program are required. Of those 10 courses, the following criteria apply:

Choose 2 of the following courses from Museum Studies

460.608   Business of Museums
460.621   Evaluation Theory and Techniques for Museums
460.655   Expanding Roles of Museum Marketing and Communications
460.657   Fundamentals of Museum Fundraising
460.675   Leadership of Museums
460.682   Museum Procurement and Contracting
460.683   Project Management in Museums
460.684   Museums, Finance, and the Economy

Courses from the Nonprofit Management Certificate

Choose four of the following from the Nonprofit Management Certificate

470.623   Nonprofit Program Development and Evaluation
470.625   Resource Development and Marketing in Nonprofits
470.666   Institutional Fundraising: Raising Maximum Dollars from Government Agencies, Corporations & Foundations
470.682   Mission Meets Profit: An Exploration and Building of a Social Enterprise
470.689   NGOs in Development and Global Policy-Making (Formerly Overview of Global Public and Nonprofit Relationship)
470.728   Influence and Impact of Nonprofits
470.774   Nonprofit Governance and Executive Leadership
470.789   INGO/NGOs and Civil Society in Conflict Zones
470.798   Financial Management and Analysis in Nonprofits

Note: Students are encouraged to enroll in courses 470.728 and 470.798 at the start of the Certificate when possible. Descriptions of the Nonprofit Management Certificate courses can be found online at *nonprofit.jhu.edu.*

MA IN MUSEUM STUDIES/ CERTIFICATE IN DIGITAL CURATION

Students who are interested in pursuing an MA in Museum Studies and are also interested in the preservation and management of cultural heritage digital assets may enroll in this combined program. Museum Studies students may earn the Certificate in Digital Curation by taking two of the required six courses as electives in the MA program plus the additional four courses required to complete the certificate. This enables students to earn both the MA degree and the certificate for a total of 14 courses, 10 in museum studies and four in digital curation. Students may also enroll directly in the Certificate in Digital Curation alone. If they later choose to pursue the MA in Museum Studies, they may count two courses from the digital curation certificate program toward the MA.

Applicants to the combined program should follow the admissions requirements for the MA in Museum Studies and submit a statement of purpose that describes in detail your academic and professional experiences that have led to your decision to pursue a master's degree in museum studies with a focus on digital curation. To learn more about the Certificate in Digital Curation, see page 115.

Master of Arts in Cultural Heritage Management

An Online Master's Degree Program

heritage.jhu.edu

The challenges of the 21st century and the expansion of heritage tourism worldwide have increased the need for forward thinking management and preservation strategies. With a focus on emergent technology and its impact on conservation, preservation, and engagement; together with integrated approaches to management, and community and stakeholder partnerships, Johns Hopkins University offers an innovative, online graduate degree in Cultural Heritage Management. This degree program immerses students in a broadcontext of cultural heritage issues, including social, environmental, and economic trends, and provides them with the qualifications needed to assume leadership and management roles in the cultural heritage sector.

We train leaders in the field that embrace our shared humanity and heritage in order to advance its interpretation, documentation, preservation, and management for the betterment of a global society.

Core Principles:

Our program is built around several guiding principles.

> We embrace an inclusive definition of heritage beyond sites, monuments, and artifacts, to include full landscapes, environments, and intangible heritage.

> We recognize grassroots efforts and community buy-in as critical to successful management strategies.

> We support an integrated approach to management and a wide understanding of its ties to sustainability, development, and community.

> We take full advantage of our online medium by focusing on emergent technologies related to the field and their impact on preservation, engagement, documentation, and asset management.

> In addition to a sustained focus on digital technologies, the program is framed through a global lens, situating the local, regional, and national within a global context.

We welcome students from around the world interested in Cultural Heritage Management. The interdisciplinary nature and international focus and concern of Cultural Heritage is supported well in the online format where domestic and international students have the opportunity to learn together.

PROGRAM COMMITTEE

Rebecca M. Brown
Associate Professor, History of Art; and Program Chair

Sarah J. Chicone
Associate Director, Cultural Heritage Management and Museum Studies

Phyllis Hecht
Director, Museum Studies

DEGREE REQUIREMENTS

All students earn a Master of Arts (MA) in Cultural Heritage Management. Nine online classes and one on-site seminar are required to complete the degree. These 10 courses are made up of three required courses, three core courses, and four electives, which must be completed within five years of beginning the graduate program.

Online Classes

All online classes are offered as asynchronous learning experiences, allowing maximum flexibility in a student's schedule. Students can log on to an easy-to-use course management system at any time, from anywhere, 24 hours a day and 7 days a week. Courses arestructured around weekly course content, and students log on multiple times a week at their convenience to access course materials, participate in discussion, submit assignments, or take exams. Course content is delivered mainly via text, multimedia presentations, and threaded discussions. As an online program, we use the Internet to its full potential, and learning is enhanced through the most up-to-date Web-based tools for design, collaboration, conferencing, and community building. Classes are kept small (15 to 17 students) to encourage active engagement and community among students and faculty. Students have direct access to faculty in their courses and can arrange one-on-one student/faculty member online meetings in real time.

Museum Studies

To address student concerns or questions about an online learning environment, a Blackboard orientation course, offered by the university, introduces the student to the online learning tools, and is required before taking the first online class.

Onsite Seminar

A two-week intensive period of on-ground heritage management study in a location organized by the MA in Cultural Heritage Management program is a required component of the degree. The seminar includes practicum opportunities related to site management, heritage tourism, and conservation, alongside classroom sessions that integrate the daily experiences. Using the rich diversity of the designated location, the seminar provides students with the chance to use what they have learned in their prior courses, develop networks with fellow students and heritage experts, and explore the latest in cultural heritage practice. Students work on directed activities during the two-week period, coupled with multiple site visits focused on the academic work being accomplished.

Note: In order to register for this course, students must have completed a minimum of two courses in the program, although four or more courses are encouraged. One of these courses must be 460.704, students are also strongly encouraged to take 460.707 and some seminars may have other specific requirements. Students are responsible for travel to and from the location, accommodations, and meals, as well as any specified field trip fees.

Waiver option: Students who are unable to travel to a seminar location due to accommodation needs, financial hardship, or family challenges may apply to the program director for an exemption to the two-week seminar. If a waiver is granted, the student must enroll in the internship option (460.780) to fulfill the on-site component of the degree requirement.

COMMUNITY

Students
Students in the MA in Cultural Heritage Management program include current and aspiring heritage professionals from around the world with baccalaureate degrees in study areas relevant to the curriculum (Anthropology, Archaeology, Architecture, Preservation, Art History, Conservation, Environmental Sciences, Geography, Preservation, Cultural Management or Tourism, Public History, or related field).

Faculty
The MA in Cultural Heritage Management faculty is made up of highly regarded experts in the heritagefield and academia from diverse geographic locations. The faculty is primarily full-time heritage practitioners who are active members of the global heritage community. They are passionate about training the next generation of heritage leaders and professionals and enthusiastic about the online course format.

Advisers
All MA in Cultural Heritage Management students are assigned an academic adviser who will help determine which courses are best for their career goals.

Network
As an online program, we offer students valuable opportunities to meet heritage professionals from around the world. We build a community within the program through social media tools and a virtual café, where students meet others in the program, find internship and job announcements, and learn about relevant conferences and events.

ADMISSION REQUIREMENTS

> Applicants must hold a baccalaureate degree in study areas relevant to the curriculum (Anthropology, Archaeology, Architecture, Preservation, Art History, Conservation, Environmental Sciences, Geography, Preservation, Cultural Management or Tourism, Public History, or related field).

> Applicants are accepted to the program on the understanding that they have sufficient background in a relevant field, either through their previous degree, or through relevant professional experience, to be able to successfully complete the program.

> A grade point average of at least 3.0 on a 4.0 scale. A minimum GPA of 3.0 does not guarantee admission. For students who have been out of school for some time, work experience—employee, intern, or volunteer—may also be considered.

Application Documents

> AAP application and fee

> A current résumé or CV

> Two letters of recommendation that verify professional and/or academic accomplishments

> A statement of purpose (approximately 750 words) This statement should address how your academic and professional experiences have led to your decision, to apply to this program. it should demonstrate an understanding of the cultural heritage sector and describe your academic and career goals, highlighting how this program will serve those goals. If you have worked in the heritage sector in any capacity, please incorporate your experience into your statement. Your statement will be reviewed for content, organization, and writing style.

> Official undergraduate and graduate transcripts from all institutions attended

> International students must submit TOEFL scores and a "course-by-course" credential evaluation of their undergraduate and graduate (if applicable) transcripts performed by an outside evaluation service.

Museum Studies

> All students who earned their postsecondary degree(s) in a country other than the United States must submit a "course-by-course" credential evaluation performed by an outside evaluation service.

> International students, see *http://advanced.jhu.edu/ prospective-students/international-applicants/* for more information.

CURRICULUM

The MA in Cultural Heritage Management offers a structured curriculum of required and core courses augmented with electives. This curriculum provides opportunities for students to gain the knowledge and skills necessary for current professional heritage practice with an eye to the future and an integration of past philosophies. We emphasize the interdisciplinarity of the field, and as a result the curriculum allows each student to customize his or her studies to their unique career goals and trajectory. The program encompasses both theory and practice, focusing on providing real-world skills and training that enable students to move into the heritage field or advance into jobs with more responsibility.

Students must take a total of 10 courses

> Three required courses

> Three core courses

> Four elective courses

An internship, approved by the Program Director, may be substituted for one elective course. Students may take courses offered in the MA in Museum Studies program or up to two courses in other JHU programs as electives, subject to the approval of the director of each program. Note: Students may not earn a C in a core course or required course. If you earn a C in a core or required course, you must either repeat the course or take another core or required course to count toward your degree. Degree candidates who receive a second C or below in either a repeated core course or any course taken in the program will be dismissed from the program.

REQUIRED COURSES

Students complete three required courses.

465.702   Studies in World Heritage *(3 credits)*

465.704   Cultural Heritage Management/Leadership *(3 credits)*

465.708   (Onsite Seminar) Reading the City: A Case Study in Urban Heritage *(3 credits)*

CORE COURSES

Choose three out of five.

* Once core course requirements are satisfied, any additional core courses may count toward elective course requirements.

465.707   Reading the Landscape: Cultural Heritage at Scale *(3 credits)*

465.710   The Protection of Global Cultural Heritage: Laws, Policies, Politics, and Advocacy *(3 credits)*

465.730   Heritage and Representation: Approaches to Interpretation and Outreach *(3 credits)*

465.732   Engaging Communities in Heritage: Ownership, Stewardship, Sustainability, and Creative Cultural Expression *(3 credits)*

465.740   Cultural Heritage in the Digital Age *(3 credits)*

ELECTIVES

Choose four of the following.

465.706   Research Methods in Cultural Heritage *(3 credits)*

465.712   Cultural Resource Management and Methods *(3 credits)*

465.714   Culture as Catalyst for Sustainable Economic Development *(3 credits)*

465.716   Cultural Heritage Risk Management and Security *(3 credits)*

465.734   Heritage Tourism *(3 credits)*

465.780   Internship *(3 credits)*

Elective courses from the Museum Studies Program

For more information, see the Master of Arts in Museum Studies. For full course descriptions, please visit *advanced.jhu.edu.*

460.611   History and Philosophy of Museums

460.609   Museums in Global Perspective

460.621   Evaluation Theory & Techniques for Museums

460.628   Architecture of Museums

460.633   Core aspects of Conservation: A 21st Century Approach

460.638   Management of Analog and Digital Images

460.639   Material Culture and the Modern Museum

460.645   Museums and Mobile: Adapting to Change

460.665   Introduction to Archives

460.666   Collection Management

460.670   Digital Preservation

460.671   Foundations of Digital Curation

460.675   Leadership in Museums

460.683   Project Management in Museums

Museum Studies

Certificate in Digital Curation

advanced.jhu.edu/digitalcuration

Digital curation is an emerging field that encompasses the planning and management of digital assets over their full lifetime, from conceptualization through active use and presentation to long-term preservation in a repository for future reuse.

Museums worldwide are now routinely digitizing all collection objects as they are acquired and loaned, not only for access but as documentation in the event of loss, damage, or theft. They are also digitizing significant portions or even all of their holdings in order to create the robust websites that the public now expects. In addition, museums are acquiring and creating born-digital content, such as digital media art, historical data in digital formats, administrative records and scientific research data. The creation and acquisition of valuable digital assets continues at a rapid pace, and cultural heritage institutions now have a critical need for professionals in the field to manage and preserve all types of digital assets to ensure their long-term availabilityfor researchers, educators, internal users and the public, and to participate in the development and promotion of standards and best practices for digital curation in the scientific and cultural heritagesector.

The Johns Hopkins University Certificate in Digital Curation, offered through the graduate program in museum studies, advances the education and training of museum and other cultural heritage professionals worldwide in this emerging field. The certificate program offers a specialized curriculum that prepares current and aspiring cultural heritage professionals to work with digital collections, exhibitions, and research data to ensure the effective stewardship of our global cultural heritage in all types of museums, from art museums to zoos, and related scientific and cultural heritage organizations. Students in this program will also contribute to the critically needed professional literature in the field.

The program prepares students to:

> Identify and describe the principles of digital preservation and digital curation.

> Create and assess digital preservation plans and strategies.

> Demonstrate understanding of archival principles of appraisal and the management of digital content in trustworthy repositories.

> Demonstrate awareness of legal issues that impact museums' abilities to preserve digital content and make it accessible.

> Identify and describe workflows for the creation and management of digital content in museum environments.

> Connect with digital curation experts in the field through supervised internships.

PROGRAM COMMITTEE

Phyllis Hecht
Program Director

Joyce Ray
Program Coordinator

> Demonstrate understanding of research methods and critical thinking skills through the supervised research paper.

ADMISSION REQUIREMENTS

Prerequisites:

Applications to the Certificate in Digital Curation will be accepted from:

> Individuals with a bachelor's degree and at least five years of experience working in a museum, library, or archive, or related cultural heritage organization

> Individuals with a master's degree in museum studies or other relevant field

> Students currently enrolled in the JHU museum studies master's program. (A separate Change of Program application to the certificate program is required; no more than two courses, from a list of designated courses, may be applied to both the master's degree and the certificate.)

> A grade-point average of at least 3.0 GPA on a 4.0 scale (work experience will also be considered)

> Individuals who have a bachelor's degree and meet the GPA requirement but lack the necessary work experience may apply to the dual MA in Museum Studies/Certificate in Digital Curation program. Prospective students are encouraged to discuss their academic and career goals with the digital curation program coordinator prior to applying.

Application Requirements:

> AAP application

> Application fee

> A current résumé

Museum Studies

> A statement of purpose (approx. 750 words) that describes in detail your academic and professional experiences that have led to your decision to pursue a certificate in digital curation

> Two letters of recommendation that verify professional and/or academic accomplishment

> Official undergraduate and graduate transcripts from all institutions attended

> International students must submit TOEFL scores and a "course-by-course" credential evaluation of their undergraduate and graduate (if applicable) transcripts performed by an outside evaluation service.

All students who earned their postsecondary degree(s) in a country other than the United States must submit a "course-by-course" credential evaluation performed by an outside evaluation service.

International students, see *advanced.jhu.edu/prospective-students/international-applicants/* for more information.

CURRICULUM

Students must take a total of six courses to complete the certificate requirements: five requiredcourses and one elective. Two of thethree courses marked with asterisks should be taken before enrolling in the internship or research paper requirements; any exceptions must be approved by the digital curation program coordinator. The elective may be taken at any time, but students in the dual MA in Museum Studies/Certificate in Digital Curation program should normally take some of the core museum studies courses, including Collection Management, before starting the digital curation courses. Collection Management can count as the digital curation elective.

Up to two courses completed in the JHU museum studies master's degree program may be applied toward the certificate upon admission to the certificate program. This includes two courses marked with asterisks below, or one of these courses plus an elective. Also, up to two courses from the Digital Curation Certificate program marked with asterisks may be applied to the JHU museum studies master's degree program as electives.

Students must take a total of 6 courses for the Graduate Certificate in Digital Curation. All courses are 3 credits.

*460.670   Digital Preservation

*460.671   Foundations of Digital Curation

*460.672   Managing Digital Information in Museums
  (Digital Preservation OR Foundations of Digital Curation is a prerequisite for this course)

460.673   Digital Curation Internship (460.673)

460.674   Digital Curation Research Paper (460.674)

One elective chosen from the museum studies curriculum; courses relevant to digital curation include but are not limited to:

460.666   Collection Management

460.637   Curating Online Exhibitions and Experiences

460.638   Preservation of Analog and Digital Photographs

460.665   Introduction to Archives

Note: Students may not earn a C in a required course. If you earna C in a required course, you must repeat the course. Studentswho receive a second C orbelow in either a repeated course or another coursewill be dismissed from the program.

Museum Studies

Master of Science in Research Administration

advanced.jhu.edu/researchadmin

The MS in Research Administration is designed to accommodate both career practitioners and those who seek a career in research administration. The program requires that students complete a core curriculum of four courses, and a minimum of two specialized tracks. As part of the core curriculum, students must either write a thesis or engage in an approved capstone project. In all, the total number of courses taken must be 12 courses or higher, regardless if it a three credit or four credit course. Courses within tracks are grouped in areas of interest to benefit students who work or want to work in various areas of research administration, or who may have varying levels of experience or special needs. Two tracks must be completed (four courses in each) in order for students to meet degree requirements.

Non-degree-seeking students may enroll in track courses with special student status. Such students are required to obtain the approval of the MS in Research Administration program director before enrolling as a non-degree-seeking student. Non-degree-seeking students are restricted to taking a maximum of four courses overall. If non-degree-seeking students want to take more than four courses overall, they must formally apply to the degree program and be accepted, if they decide to seek a degree.

COURSE REQUIREMENTS

>   Four core courses
>   Two Track required elective courses
>   Six elective courses

Core Courses (Required of all students)

475.601   Introduction to Research Administration* *(3 credits)*
475.602   Organization and Leadership for Research Administration* *(3 credits)*
475.604   Introduction to Legal, Ethical, Regulatory, and Compliance Issues* *(3 credits)*
475.800   Capstone Project in Research Administration
            OR
470.801   Research and Thesis
            And if needed
475.802   Thesis and Capstone Continuation *(non-credit)*

CURRICULUM TRACK 1
Program Administration and Facilitation
(One required course and choose any 3 courses)

475.603   Assistive Technologies for Research Administration *(3 credits) (Offered as an elective in all three curriculum tracks but may only be taken once)*

475.605   Program Development and Evaluation *(3 credits)*
475.606   Project Management of Sponsored Programs (Required) *(3 credits)*
475.607   Grantsmanship, Grant Writing, and Evaluation of Grant Proposals *(3 credits)*
475.608   Procurement and Award Processes *(3 credits)*
475.623   University-Corporate Relations: Principles and Best Practices *(3 credits)*

Interdisciplinary Courses
470.709   Quantitative Methods *(3 credits)*
470.728.81 The Influence and Impact of Nonprofits *(3 credits)*

CURRICULUM TRACK 2
Financial Management of Sponsored Programs
(One required course and choose three courses.)

475.603   Assistive Technologies for Research Administration *(3 credits) (Offered as an elective in all three curriculum tracks but may only be taken once)*
475.609   Financial Management of Sponsored Programs (required) *(3 credits)*
475.610   Financial Accounting and Compliance Auditing *(3 credits)*
475.611   Reporting and Statistical Analysis for Sponsored Programs *(3 credits)*
475.617   The Federal Acquisition Regulations and Defense Contracting *(3 credits)*

Interdisciplinary Courses
470.798   Financial Management and Analysis in Nonprofits *(3 credits)*

Research Administration

CURRICULUM TRACK 3
Compliance, Legal, and Regulatory Issues
(One required course and choose three courses.)

475.603   Assistive Technologies for Research Administration *(3 credits) (Offered as an elective in all three curriculum tracks but may only be taken once)*

475.612   Intellectual Property, Technology Development, and Technology Transfer *(3 credits)*

475.613   Advanced Topics in Compliance, Legal, and Regulatory Issues (required) *(3 credits)*

475.614   Managing Compliance, Legal and Regulatory Issues in Research Hospitals and Health Care *(3 credits)*

475.615   Research Contracts and Industrial Agreements: Domestic and International *(3 credits)*

475.616   Domestic and International Special Issues in Research, Legal, and Regulatory Affairs *(3 credits)*

Interdisciplinary Courses

410.649   Introduction to Regulatory Affairs (Prerequisites in biotechnology apply. Contact the Director of the MS in Research Administration) *(4 credits)*

410.687   Ethical, Legal, & Regulatory Aspects of the Biotechnology Enterprise (Prerequisites in biotechnology apply. Contact the Director of the MS in Research Administrationy) *(4 credits)*

CURRICULUM TRACK 4
Concentration in International Research Administration Management
(One required course and choose three courses.)

475.615   Research Contracts and Industrial Agreements: Domestic and International *(3 credits)*

475.616   Domestic and International Special Issues in Research, Legal and Regulatory Affairs *(3 credits)*

475.617   The Role and Importance of Culture and Communication in International Research Collaborations *(3 credits)*

475.618   International Research Infrastructure and Management for Higher Education (Required) *(3 credits)*

475.619   International Funding and Grantsmanship: Proposal Development, Submission and Management *(3 credits)*

475.620   Building, Executing and Managing International Research and Collaboration Agreements *(3 credits)*

475.621   International Research Regulatory, Ethical and Compliance Issues in Research Management *(3 credits)*

475.622   Building International Innovation, Intellectual Property, and Technology Transfer Centers *(3 credits)*

CURRICULUM

Students in the MS in Research Administration program will receive a firm foundation, through the core curriculum, for understanding how the research enterprise is organized worldwide and within the United States, how university and college research offices are organized and led, how the federal government and nonprofit sectors facilitate research and how they are organized, funded, and led. Through the core curriculum, students will be introduced to the basics of the management for sponsored programs, including finances and information technology, as well as legal, ethical, regulatory, and compliance issues. As part of the core curriculum, students will be required to elect either a thesis or capstone project, which will be initiated within the core curriculum sequence and completed while the students take elective courses or, through continuous enrollment, within five years.

In addition to the corecourses, students may elect two additional tracks. The program's tracks allow students to choose from several groupings in: Program Administration and Facilitation; Financial Management of Sponsored Programs; Compliance, Legal, and Regulatory Issues; and, International Research Administration Management. The curriculum has been developed to prepare students with skills identified by the research community including several national and international research administration associations.

The program prepares emerging leaders in research administration to face complex management challenges of today. Students will gain an appreciation for these issues through their core courses and their electives. Twelve courses, including a capstone project, are necessary to complete the degree.

Sequence of Study
Students should make every effort to take the core courses, other than the capstone, in their first two semesters. The final required course of the program is the Capstone Project in Research Administration or the Research and Thesis in Research Administration, which students can only take in their final semester.

Capstone Project
The Capstone Project Course is one of two courses that a student may select after having successfully completed 10 courses in the MS in Research Administration Program. This course is the culmination of the Master's in Research Administration where students will integrate and build on their previous coursework in the program to apply it to practical settings. During the semester students will identify and analyze an issue or problem and propose a solution during this semester long course. Those electing the Capstone Project may explore issues related to a current research administration project in a "real world" setting. This original work can be for the organization or agency for which the student works or for a hypothetical organization, but

it should result in the student conducting original research and applying strategies, testing solutions, and using tools to meet the particular needs of chosen work environment. To complete the course students must write a 25-35 page capstone project paper. If the project is not completed by the end of the semester, students will need to enroll in AS.475.802 Thesis and Capstone Continuation (non-credit).

Thesis

The Research and Thesis Course is also one of two courses that a student may select after having successfully completed 10 courses in the MS in Research administration Program. This course is the culmination of the Master's in Research Administration where students embark on a designing and conducting research in the field of research administration. The purpose of this core course is for students to refine their thesis topic, develop their research design and conduct and complete the research. Students will conduct research and write their thesis during this class in earnest. The course format is working sessions focused on specific research-oriented tasks. Emphasis will be placed on completing the literature review and methodology sections of the thesis. Students will also complete by semester end their thesis paper. To complete the course students must write a 25-35 page thesis. If the thesis is incomplete students will then need to enroll in AS.475.802 Thesis and Capstone Continuation (non-credit).

MS in Research Administration/Certificate in International Research Administration Management

advanced.jhu.edu/academics/certificate-programs/international-research-administration-management/

Students pursuing an MS in Research Administration may obtain an additional credential by completing courses that lead to the Certificate in International Research Administration Management. This combined credential will prepare graduates for careers in the managing international sponsored projects and international contracting. Students can complete this program with only five additional courses, for a total of 17 courses to complete the Degree and the Certificate.

CERTIFICATE IN INTERNATIONAL RESEARCH ADMINISTRATION MANAGEMENT

Students interested in enrolling in the Certificate in International Research Administration Management are required to submit an application for the MS in Research Administration Degree and be admitted into the program. Students must specify in their application that they are only seeking the Certificate in International Research Administration Management. The certificate requires one required course and four elective courses for a total of five courses in order to complete the certificate. If the student is in good standing and decides to pursue the MS in Research Administration, they may transition into the degree program by notifying the Director of the MS program and submitting a Change of Program application to the registrar.

Choose five courses

475.615   Research Contracts and Industrial Agreements: Domestic and International *(3 credits)*

475.616   Domestic and International Special Issues in Research, Legal and Regulatory Affairs *(3 credits)*

475.617   The Role and Importance of Culture and Communication in International Research Collaborations *(3 credits)*

475.618   International Research Infrastructure and Management for Higher Education (Required) *(3 credits)*

475.619   International Funding and Grantsmanship: Proposal Development, Submission and Management *(3 credits)*

475.620   Building, Executing and Managing International Research and Collaboration Agreements *(3 credits)*

475.621   International Research Regulatory, Ethical and Compliance Issues in Research Management *(3 credits)*

475.622   Building International Innovation, Intellectual Property, and Technology Transfer Centers *(3 credits)*

Master of Arts in Writing

Fiction and Nonfiction Concentrations offered onsite at the Washington, DC Center and at the Homewood campus in Baltimore.

writing.jhu.edu

The MA in Writing Program offers students the option of a fiction or nonfiction concentration and combines the study of literature with the practice of writing in a series of workshops and reading courses. Students on the fiction track work on short stories, novellas, or novels in a variety of genres. Students on the nonfiction track pursue long-form, literary journalism or personal essays and memoir. Classes are small--workshops are capped at 12--and students hone their craft through the line-level scrutiny of their work by our faculty of working, professional writers.

The successful applicant is an already skilled writer looking to refine their craft, flex their creative muscles, explore new forms, and grow as a writer through concrete and specific feedback from our faculty. Courses range from core classes in "Contemporary American Literature"and "Techniques"to electives like"Travel Writing,""Novel Writing," and "Screenwriting."

Students in the MA in Writing program learn primarily through the practice of writing and study literature, as writers, who are clarifying approaches to craft. Depending on student goals, the program offers a broad foundation in fine arts/creative writing, in journalism or in both fields. Some students cultivate skills to prepare for a career; others are seasoned writers who want to change focus; still others favor artistic exploration over professional ambition. Within the realm of literary writing, students have the flexibility to develop individual styles and pursue specialized subjects. The program's goal is to create a nurturing yet demanding environment where writers work toward publication at the highest artistic and professional levels.Our alumni regularly publish books, essays, and articles. Follow us on Facebook to see some of students' recent successes: *https://www.facebook.com/Writing-Program-at-Johns-Hopkins-University-195785284287/.*

Students interested in writing about science, medicine, or technology should consider our Master of Arts in Science Writing program, which is online/low-residency and also offers a graduate certificate. See page 126.

Prospective students may apply to the MA in Writing program year-round; accepted students may begin study in the fall, spring, or summer terms. Admission to the program is based on a competitive review of writing samples and other materials. The program strongly urges applicants to submit all application materials two to three months before the desired term; later applications are considered as time and course openings allow. Financial aid is provided for qualified students through student loans; many students receive employer assistance for tuition.

PROGRAM COMMITTEE

Brad Leithauser
Chair, MA in Writing Program; Professor, The Writing Seminars

Mark Farrington
Director, MA in Writing & Teaching Writing Program

Karen Houppert
Associate Director, MA in Writing Program

Students complete the program part time at their own pace— usually in two to four years. The program is not designed for full-time study, although exceptions are considered for military veterans and international students. Most students take only one or two courses per term, but some acceleration is allowed. Students also may take a term off, as needed. The nine required courses include two core courses, three workshops, three electives, and a final thesis course.

The full degree program in Fiction and Nonfiction is available in on-site classes at Dupont Circle in Washington, D.C., and at the main Homewood campus in Baltimore. Students may take courses at either or both campuses. Our Washington/Baltimore courses are taught on weekday evenings or Saturdays; fully online courses are not available in Fiction and Nonfiction. To increase student choice of courses, we sometimes use innovative live video links to combine students from both campuses into a single course. On-site courses are also sometimes combined by alternating classes between D.C. and Baltimore each week, and/or they meet on Saturdays to ease commuting.

The MA in Writing program's previous Science-Medical Writing concentration has been replaced by a separate master's degree and graduate certificate that can be completed mostly online; only a brief on-site residency is required. See page 126.

Some applicants to the MA in Writing Program may be granted provisional status, with permission to take one or two courses to determine if full acceptance is merited. Provisional acceptance is granted to applicants the admissions committee believes will develop enough for degree candidacy. Applicants

not interested in a degree may seek permission to take individual courses as a special student; such applicants must follow the usual application process and obtain adviser approval for any course desired.

The MA in Writing Program sponsors readings, seminars, and conferences. The program's popular summer experience, the Hopkins Conference on Craft, offers students full-course credit in an intensive, concentrated format at an off-site location. Conferences have been held in Washington; Baltimore; Florence, Italy; Bar Harbor, Maine; and Shenandoah National Park. The 2018 conference is set for Dublin, Ireland. MA in Writing program alumni may attend the conference at a discounted tuition rate, with applications also accepted from outside writers and editors. For details, see *http://writing.jhu.edu/ craftconference* or email *craftconference@jhu.edu*.

APPLICATION AND ADMISSION REQUIREMENTS

Credentials and Experience

Applicants to the MA in Writing program should possess some familiarity with writing in their chosen concentration, although they need not be published or professional writers. Fiction students should have read in their area of interest and explored their writing voice. Nonfiction writers should have read in their field. For Nonfiction writers, some exposure to journalistic fundamentals is helpful but not necessary.

Graduate writing students are expected to be proficient in grammar, punctuation, spelling, and usage. Applications lacking this proficiency will be rejected. The program does not require a graduate entrance examination. The MA in Writing program is not designed for students who need help with issues relating to English for Speakers of Other Languages.

Application Documents

Application materials are submitted online. See writing.jhu.edu "Apply Now" for more information. On the application form, applicants must indicate the concentration in which they wish to specialize. Admission is based on a competitive evaluation of the Advanced Academic Programs standard application materials (including an application and application fee) and the following MA in Writing program materials, which each applicant must submit: *(Applicants should closely examine all the information below; improper or incomplete applications are major reasons for delay or rejection.)*

> A statement of purpose, explaining the applicant's aspirations as a writer and describing the applicant's recent reading (required; see below)

> Recent writing samples in the chosen concentration, demonstrating the applicant's current development as a writer in that field (required; see below)

> Official undergraduate and graduate transcripts (required)

> Résumé or CV (required)

Statement of Purpose

The statement of purpose should describe the applicant's education, experience, and interest in the chosen writing area, and share the applicant's aspirations as a graduate student and as a writer. Statements of purpose are reviewed for content, creativity, and interest in literary or journalistic creative writing. The statement also must describe the applicant's recent reading. The statement should not exceed three typewritten pages. The statement of purpose should specify whether the applicant seeks degree status or permission to take only a specific course or two, with the desired courses cited.

Writing Samples

The most important part of an application is the writing sample, which should be the applicant's best attempt at creative or journalistic writing in the concentration of interest. The samples should total 20 to 40 typewritten, double-spaced pages, or about 5,000 to 10,000 words, in the concentration of interest. Samples do NOT have to be a single, lengthy piece of writing. In fact, a combination of several shorter pieces is recommended as long as the combined length of all pieces equals the requirements. For more suggestions on writing samples in each concentration, see below. Applicants may submit copies of the published equivalent (print or digital) of the above lengths, although submittedsamples do not have to be published.Academic papers, internal business reports, speeches, or government documents are not recommended as writing samples; the samples should be creative writing, blogging, or journalism in the chosen concentration. Applicants may submit uncompleted work as part of their sample as long as incomplete work is labeled. Applicants should not submit the only copy of their work; samples cannot be returned.

The program's admissions committees offer the following additional suggestions for writing samples for each concentration:

Fiction: Up to four short stories or novel chapters in prose fiction, or any combination of the two forms, demonstrating literary content or themes. Any style, vision, or approach is permitted—traditional, experimental, hybrid, etc.

Nonfiction: Up to five separate works of prose nonfiction about any subject. Any nonfiction form or combination of forms, including feature article, commentary/blogs, memoir, travel, essay, profile, biography, book chapters and creative nonfiction, is permitted. Academic assignments, term papers, government reports, or scholarly criticism generally are not acceptable nonfiction writing samples.

Dual-Concentration Applicants

Applicants may seek formal degree candidacy in both Fiction and Nonfiction by submitting full writing samples in each proposed area. Such applicants should explain their multiple interest and reading in a single statement of purpose. The program makes individual admission decisions for each concentration in a dual-concentration application. Dual-concentration students must complete two to four more courses than the nine required for a single-concentration degree.

The Writing Seminars

Applicants are reminded that Johns Hopkins University has two graduate creative writing programs. Students interested in the MA in Writing program should follow the application process above. Students interested in the full-time MFA program, The Writing Seminars, should follow that program's separate application procedures. Applying to one program does not count as an application to the other. The MA in Writing program accepts applications year-round; the seminars accepts applications until a January deadline for a cohort class the following fall. The part-time MA program offers courses year-round in Washington and Baltimore; the full-time MFA program offers courses only in the fall and spring in Baltimore. For more information about the seminars, call 410-516-6286 in Baltimore or visit *writingseminars.jhu.edu*.

Admission Status

Applicants to the MA in Writing program are either rejected or accepted as a degree candidate, provisional student, or special student. (See "Student Status" in the front section of this catalog.) The MA in Writing program differs from other AAP graduate programs in how it handles provisional and special students: (1) Provisional students who want degree candidacy in the program must complete the provisional course or courses with a grade of A-or higher to request degree candidacy. Other AAP programs require a grade of B or higher in the provisional course(s). Provisional students should consult the program website at *writing.jhu.edu* for more information. (2) Special students in the program must get adviser permission for every course they take. (3) Unlike other AAP graduate programs, the program does not allow applicants to enroll in a program course without some type of review of writing samples and a statement of purpose, even if those applicants request special student or provisional status. The requirements and standards of the desired course will determine the admissions review for a request to register for that course as a special student; some courses require greater writing experience than others. Courses completed as a provisional or special studentwill count toward the MA degree if the student later earns degree status.

COURSE REQUIREMENTS

To earn a Master of Arts in Writing in Fiction or Nonfiction, students must complete the following nine on-site courses:

> **Two core courses:** Contemporary American Writers and the appropriate Techniques course

> **Three writing workshop**s in the chosen concentration (core courses usually must be completed before enrolling in a workshop)

> **Three electives**, approved by an adviser (at least one elective must focus on reading or other work in the student's concentration)

> **The thesis course** (all eight earlier courses must be completed before starting the thesis course)

For the MA in Writing program thesis, students submit highly revised versions of writing selected from their work in earlier courses. Core courses, workshops, and electives are described below.

COURSES

Writing courses are open only to program students who have submitted appropriate writing samples and received a formal admissions decision from the MA in Writing program. Please refer to each semester's course schedule (*writing.jhu.edu* or in the SIS registration system) for exact dates, times, locations, fees, and instructors for that term's courses. Only a selection of courses from the curriculum is offered each term, although core and required courses are offered more often than electives and specialized workshops. Some electives are offered only every year or two. Students may enroll in one or two courses per term; more than that requires special permission. Those who take two courses per term usually pair two core courses, or a workshop and an elective, until reaching thesis. *Students may enroll in only one workshop course per term*. Students usually have five years to complete their degree and should consult the policies and guidelines in the front of this catalog concerning continuation of enrollment, time limitation, and leave of absence.

Note to students from outside the MA in Writing program:
The program encourages enrollment from students in other Johns Hopkins University graduate programs. However, non-program applicants should be aware that all writing workshops and some other courses require the completion or waiver of certain prerequisite core courses, or they require an evaluation of the student's writing skills to determine whether he or she qualifies for the desired course. Non-MA in Writing Program students may be asked to submit writing samples and/or a full description of their writing experience before being allowed to register for certain courses.

CORE COURSES

Core courses provide foundation skills and theory in each concentration. Fiction and Nonfiction students should complete both of their concentration's core courses before enrolling in a workshop, although they may take an elective at any time. The core courses for Fiction students are 490.652 Contemporary American Writers and 490.654 Fiction Techniques. The Nonfiction core courses are 490.656 Nonfiction Techniques and 490.652 Contemporary American Writers. To improve foundation skills, Nonfiction students should consider 490.703 Principles of Journalism as an additional core course or elective. (In some cases, Fiction and Nonfiction students may seek permission to enroll in a workshop after completing the appropriate Techniques course; adviser approval is required.)

490.652	Contemporary American Writers	*(3 credits)*
490.654	Fiction Techniques	*(3 credits)*
490.656	Nonfiction Techniques	*(3 credits)*
490.703	Principles of Journalism	*(3 credits)*
	(optional core course)	

Waiver of a Core Course

Some accomplished writers may seek a waiver of the Techniques course requirement in their concentration. Such students must submit a written request to the program director or assistant director explaining how they have previously acquired the appropriate foundation skills. For example, applicants with numerous publication credits, extensive professional experience, or an undergraduate degree in their concentration may decide to request a Techniques waiver. If a waiver is granted, the student must replace the waived course with an additional workshop or elective. Waivers are rarely granted in Fiction; waiver requests are more common from practicing journalists who apply in Nonfiction. Waiver requests should be submitted at least a month before the term starts, if possible.

WORKSHOPS

Workshops are the most important courses in the MA in Writing program curriculum. They allow students to create and revise their ownwriting in an intensive group critique process. All courses that count as a workshop for degree requirements include the word "workshop" in their title unless special permission is given; courses without the word "workshop" in their title cannot count as a workshop toward degree requirements. Some workshops are general workshops, in which students may submit writing of any form or style within the specified concentration: Fiction Workshop or Nonfiction Workshop. Other workshops are specialized, meaning students must submit writing in a certain form or style within the concentration: Writing the Novel Workshop, Writing the Memoir & Personal Essay Workshop, Experimental Fiction Workshop, Profile & Biography Workshop, Travel Writing Workshop, etc. Any workshop counts toward the requirement of three workshops for a degree. To meet the requirement of three workshops, students may take the same workshop multiple times, or they may take any combination of general or specialized workshops.

Unless a core course waiver has been granted or special permission is received, students in Fiction and Nonfiction should complete the appropriate core courses before enrolling in any writing workshop. Students are encouraged but not required to take each of their three writing workshops from a different instructor.

Special Note: Students should not take more than one workshop per semester, and no student may take a writing workshop or other intensive writing course outside the chosen concentration without the permission of the program director or associate director. Additional writing samples or the completion of core courses may be required before such permission is granted; the non-concentration workshop will count as an elective.

Please note the university uses three course numbers for general workshops in a given concentration. These numbers distinguish between the offerings in the three terms of an academic year; they do not indicate that workshops are sequential or that students need to take workshops with a

different number to meet degree requirements. Because the numbering scheme is repeated every year, it is conceivable that a student's three completed general workshops will have the same course number.

490.660-1-2	Fiction Workshop	*(3 credits)*
490.670-1-2	Nonfiction Workshop	*(3 credits)*
490.679	Experimental Fiction Workshop	*(3 credits)*
490.682	Writing the Novel Workshop	*(3 credits)*
490.690	Travel Writing Workshop	*(3 credits)*
490.692	Profile & Biography Workshop	*(3 credits)*
490.693	Writing Memoir & Personal Essay Workshop *(3 credits)*	
490.695	Viewpoint Journalism Workshop	*(3 credits)*
490.698	Writing the Review Workshop	*(3 credits)*
490.701	Advanced Workshop	*(3 credits)*
490.746	Workshop in Review & Opinion	*(3 credits)*

The MA in Writing Program sometimes offers special courses that offer either workshop or reading elective credit to students enrolled in a single, combined course. See Course Descriptions. The program is also developing workshops that enroll both concentrations in the same course.

490.667	Combined Workshop & Readings in Fiction *(3 credits)*	
490.668	Combined Workshop & Readings in Nonfiction *(3 credits)*	
490.669	Combined Workshop in Fiction & Nonfiction *(3 credits)*	

ELECTIVE COURSES

The MA in Writing program offers three types of electives: reading electives, craft electives and cross-concentration electives. Reading electives, are literature courses that involve craft-based analysis and discussion of intensive reading assignments, with few writing requirements. Craft electives focus on special issues of technique, such as voice, revision or structure, and may involve extensive reading plus some writing exercises and assignments. Cross-concentration electives are courses that are open to students of both concentrations and require comparative reading, exercises, and analysis.

Students usually can take electives at any time, even if they have not completed the required core courses. However, students are strongly urged to complete both core courses as soon as possible so they have the option of taking a workshop and/or elective in subsequent terms. MA in Writing program students usually must complete three electives to earn their degrees, although additional workshops may count as electives. At least one of those electives should be specifically within the student's concentration. Students should consult the course descriptions below for information on electives designed for their chosen concentration. With an adviser's approval, students may take electives outside their chosen concentration. Depending on their background, students may be asked to submit appropriate writing samples for the new concentration before they are allowed to register.

Students should carefully plan their studies to include their top choices for elective courses. Electives are offered on a rotating basis; some are scheduled only every two or three years. While students generally register on a first-come, first-served basis, students within a concentration may, at the program's discretion, be granted enrollment priority when registering for required or elective courses within that concentration. New electives may be offered at any time.

490.676	Sentence Power: From Craft to Art	*(3 credits)*
490.677	Shakespeare: From Art to Audience	*(3 credits)*
490.678	Novel Form, Style, and Structure	*(3 credits)*
490.680	20th Century World Literature	*(3 credits)*
490.681	The Craft of Poetry: An Introduction for Fiction & Nonfiction Writers	*(3 credits)*
490.683	Voice in Modern Fiction	*(3 credits)*
490.684	The Heritage of Fiction I or II	*(3 credits)*
490.686	Identity in Contemporary Writing	*(3 credits)*
490.687	The Short Story: Past & Present	*(3 credits)*
490.688	The Evolution of Fiction Forms	*(3 credits)*
490.689	Masters of Nonfiction	*(3 credits)*
490.699	Magazine Style and Substance	*(3 credits)*
490.700	Readings in Creative Nonfiction	*(3 credits)*
490.702	Readings in Global Fact & Fiction	*(3 credits)*
490.703	Principles of Journalism *(also optional core)*	*(3 credits)*
490.704	Readings in Essay & Memoir	*(3 credits)*
490.705	Crafting Nonfiction Voice	*(3 credits)*
490.711	Masterworks: Examining the Boundaries	*(3 credits)*
490.712	Teaching Writing: Theory, Practice, & Craft	*(3 credits)*
490.713	Fiction for Young Readers	*(3 credits)*
490.714	Essence of Place: Description, Detail, & Setting	*(3 credits)*
490.715	Hybrid Forms: Innovative Writing Across Genres	*(3 credits)*
490.717	The Novel in the 21st Century	*(3 credits)*
490.718	Studies in Digital, Intermedia, and Multimedia Forms	*(3 credits)*
490.719	Technology Tools, Multimedia, and Digital Publication	*(3 credits)*
490.721	Drama & Playwriting	*(3 credits)*
490.731	Film & Screenwriting	*(3 credits)*
490.742	Readings in Poetry	*(3 credits)*
490.745	Voice in Modern Fiction & Nonfiction	*(3 credits)*
490.747	Advanced Revision Techniques in Fiction	*(3 credits)*

SUMMER CONFERENCE COURSES

These courses are offered through the summer Hopkins Conference on Craft. The course depends on the conference location, which has included Maine, Italy, Baltimore, Washington, Shenandoah National Park, Ireland and elsewhere. The conference often is held in conjunction with the on-site residency for the Science Writing Programs. These courses require special admission procedures and fees, plus additional travel and housing costs.

490.716	Reading Washington	*(3 credits)*
490.721	Drama & Playwriting	*(3 credits)*
490.731	Film & Screenwriting	*(3 credits)*

490.742	Readings in Poetry	*(3 credits)*
490.784	Reading and Writing New England	*(3 credits)*
490.785	Reading and Writing Baltimore	*(3 credits)*

INTERNSHIP, INDEPENDENT STUDY

Advanced students should propose independent study or internships months in advance of the desired term. Review and approval of such proposals are competitive. Independent study and internships are considered only rarely and usually only for students who have completed five or more courses. Either may count as an elective or workshop, as approved. More information can be found on the program website.

490.800	Independent Study in Writing	*(3 credits)*
490.805	Internship in Writing	*(3 credits)*

THESIS

Students enroll in the program's final thesis course only after completion of all core courses, workshops, and electives required for the MA in Writing. All thesis students should submit a thesis planning form at least one month before taking the course. For more information about the thesis course and thesis process, see Program Resources at the MA in Writing program website at *writing.jhu.edu*. In most cases, a program thesis is based on work created and revised in previous courses.

490.801	Thesis and Publication (Prerequisites: All other courses, including cores, workshops, and electives.)	*(6 credits)*
490.888	Thesis Continuation	

SCIENCE WRITING COURSES FOR MA IN WRITING STUDENTS

Students in the MA in Writing program also can consider earning electives through the online MA in Science Writing program. For instance, Nonfiction students might consider a Science Writing Workshop or a Science Writing reading course. All regular Science Writing courses are offered fully online; the MA in Writing program does not offer online courses in Fiction or Nonfiction. For more information about Science Writing, see page 126. The following Science Writing courses may be of interest to MA in Writing Program students:

491.658	Techniques of Science-Medical Writing	*(4 credits)*
491.750	Contemporary Science Writing: Creative and Professional Forms	*(4 credits)*
491.673, 4, 5	Science-Medical Writing Workshop	*(4 credits)*
491.696	The Nature of Nature	*(4 credits)*
491.697	The Literature of Science	*(4 credits)*

Writing

Master of Arts and Graduate Certificate in Science Writing

MA online with one on-site residency; certificate fully online (Also see Writing, page 121).

advanced.jhu.edu/sciencewriting

From a flower's delicate petal to the mysteries of a distant galaxy, science writing explores and explains how our world works. The best science writing inspires a deeper understanding, a sense of wonder or a need to act. The online /low-residency Science Writing program at Johns Hopkins strives to guide the next generation of writers and editors who will help the public comprehend the increasingly complex issues of science, medicine, and technology that affect their lives. Students choose from a nine-course Master of Arts or a five-course graduate certificate. Eligible applicants may take only a course or two of special interest as non-degree students. A brief residency course, required for the degree and optional for the certificate, provides intensive face-to-face study to complement the group and personal interaction of online courses.

The program recognizes that contemporary science writing involves journalism, communication, multimedia, and the literary arts. Our typical student hones journalistic andcreative writing techniques to craft enticing, understandable prose for digital or print venues, from magazines and books to social media and websites for companies, associations, agencies, or others. Along the way, students acquire communication skills to promote viewpoints and develop expertise to thrive in the digital universe. Our writers and editors are also challenged to monitor science itself, to disclose how research can falter or be misused.

Johns Hopkins Science Writing students have visited a research island in Maine, control rooms at NASA, historic museums in Italy, and world-famous genetics and biotech labs in Washington and Baltimore. They have observed surgeons in the operating room, sailed with biologists on the Chesapeake Bay, heard from Nobel and Pulitzer winners, and met with science writers from The Washington Post, The New York Times, National Public Radio, National Geographic, Discover, Science, Nature, and other institutions. From space and the oceans to nanotechnology and climate change, from cellphones and robots to fitness and genetics, the ever-changing topics chosen by our science writers are essential to an enlightened citizenry of the 21st century.

Students in the Science Writing program do not focus on creating scientific research reports, journal articles for peer review, or other scholarly/academic constructs, nor do we teach technical writing for instruction manuals or complicated textbooks. Our curriculum also is not designed to help scientists or others who need remedial help or instruction in English as a

second language. Our Science Writing students aim to translate the complicated information and trends of science, medicine, and technology into meaningful, perceptive prose for a broad audience.

Johns Hopkins Science Writing: A Long History — While Johns Hopkins has discontinued its full-time graduate program in science writing at The Writing Seminars, our program remains open and is thriving. After two decades of on-site courses in Washington and Baltimore, in 2014the program expanded to reach a national and international audience through an online/low-residency format.The Hopkins Science Writing Program is now one of the most popular graduate science writing programs in the country.

PROGRAM COMMITTEE

Brad Leithauser
Chair, MA and Graduate Certificate in Science Writing; Professor, The Writing Seminars

Melissa Hendricks Joyce
Associate Director, MA and Graduate Certificate in Science Writing Faculty

Ruth Levy Guyer
Author, Science Writer, Faculty Member, MA in Writing Program

Kay Redfield Jamison
Author; Professor of Psychiatry and Behavioral Science, Johns Hopkins University School of Medicine

Diana Sugg
Enterprise Editor, The Baltimore Sun

APPLICATION AND ADMISSION REQUIREMENTS

Credentials and Experience

Applicants to the Science Writing program should possess some familiarity with reading and writing in the field, although they need not be published or professional writers. A background in science is useful but not required. Some applicants might receive permission to take a program core course or two as a provisional student. (See Admission Status below.)

Graduate writing students are expected to be proficient in grammar, punctuation, spelling, and usage. Applications lacking this proficiency will be rejected. The program does not require a graduate entrance examination or proficiency in a foreign language.

Application Documents

Application materials are submitted online. See http://advanced.jhu.edu/sciencewriting. "Apply Now" for more information. Admission is based on a competitive evaluation of Advanced Academic Programs (AAP) standard application materials, including an application and application fee, and the following materials, which each applicant must submit: *(Applicants should closely examine the information below; improper or incomplete applications are major reasons for delay or rejection.)*

> A statement of purpose explaining the applicant's aspirations as a writer and describing the applicant's recent reading (required; see below)

> Recent writing samples, including some works of science writing, demonstrating the applicant's current development as a writer (required; see below)

> Official undergraduate and graduate transcripts (required)

> Résumé or CV (required)

> Up to three recommendation letters directly relating to the applicant's experience or promise as a writer (optional)

Statement of Purpose

The statement of purpose should describe the applicant's education, experience, and interest in writing and share the applicant's aspirations as a graduate student and as a writer about science, medicine, or technology. Statements of purpose are reviewed for content, creativity, and interest. The statement also must describe the applicant's recent reading. The statement should not exceed three typewritten pages. The statement should specify whether the applicant seeks the degree or certificate, or permission to take only a specific course or two. The desired course(s) should be listed.

Writing Samples

The most important part of an application is the writing sample, which should be the applicant's best attempt at creative or journalistic writing. The samples should total 20 to 40 typewritten, double-spaced pages, or about 5,000 to 10,000 words, but samples do NOT have to be a single, lengthy piece of writing. A combination of several shorter pieces is recommended if the combined length of all pieces equals the requirements. Applicants lacking samples about science, medicine, or technology may submit writing about other topics; explanatory writing is especially appreciated. The samples themselves should be up to five separate works of prose. Any factual form or combination of forms, including news or feature article, commentary/blogs, memoir, travel, essay, review, profile, book chapters, and creative nonfiction, is permitted. Applicants may submit copies of the published equivalent (print or digital) of the above lengths, although submitted samples do not have to be published. Applicants with digital writing samples should submit a copy of the entire sample, not just a link. The samples usually should be no more than five years old. Academic papers, peer-reviewed research reports, technical writing, or government documents are not recommended as writing samples; the samples should be journalism, communication writing, creative writing, blogging, etc. Applicants may submit uncompleted work if they label it as such.

Admission Status

Applications to the Science Writing program are reviewed by an Admissions Committee of program leadership and faculty members. Applicants are either rejected or accepted as an MA or certificate candidate, provisional student, or special student. (See "Student Status" in the front section of this catalog.) Earning provisional student and special student status in the Science Writing program does not eliminate the need to undergo a full admissions review when requesting MA or certificate candidacy. Additionally, the Science Writing program differs from other AAP graduate programs in the handling of provisional and special students: (1) Provisional students who want MA or certificate candidacy in science writing must complete the provisional course or courses with a grade of A-or higher to request degree candidacy. Other AAP programs require a grade of B or higher in provisional course(s). Provisional students should consult the program website at http://advanced.jhu.edu/sciencewriting for more information. (2) Special students in science writing must get adviser permission for every course they take. (3) Unlike other AAP graduate programs, Science Writing does not allow applicants to enroll in a course without some type of review of writing samples and a statement of purpose, even if those applicants request special student status. Therequirements and standards of the desired course will determine the admissions review; some courses require greater writing experience than others. Courses completed as a provisional or special student will count toward the MA or graduate certificate if the student later earns formal candidacy.

COURSE REQUIREMENTS

Our curriculum starts with core courses that focus on fundamental skills in reporting, writing, and broad understanding of contemporary science writing forms. Students then enroll in workshops and electives, with internships and independent studies available under certain circumstances. In writing workshops, students submit their own writing and revisions for peer review and editing. Electives usually focus on reading-as-a-writer skills or specific forms or topics, such as nature writing or literary science writing. Certificate and MA students take the same courses. The MA in Science Writing requires an on-site residency course; a residency course is optional for certificate students. The degree program concludes with a capstone thesis course in which students revise a portfolio of their best, most publishable work produced in earlier courses and prepare a formal career plan for success in the field.

Master of Arts in Science Writing

(Nine courses, including a residency and thesis.)

1.   Techniques of Science-Medical Writing (online core course)

2.   Contemporary Science-Medical Writing: Creative and Professional Forms (online core course

3.   Two science writing workshops (online; can be any course with workshop in title.

4.   Two science writing electives, approved by adviser (online)

5.   One residency course (on-site; location and topics TBA)

6.   One student choice: Another workshop, elective, residency, course in another AAP Program*, or an internship or independent study

7.   Thesis and Careers in Science Writing (online; final course)

Graduate Certificate in Science Writing

(Five courses, residency optional)

1.   Techniques of Science Writing (online core course)

2.   One science writing workshop (online)

3.   One science writing elective, approved by adviser (online)

4.   Two student choice courses: The second core course, a residency, another workshop or elective, an internship or independent study, or, if approved, a course in another AAP program*

Select courses available from AAP programs in Communication, Biotechnology, Environmental Sciences and Policy, and Government. With special permission, students also may consider other Johns Hopkins courses in science, medicine, or public health. Science Writing students pay the tuition charged by the offering program.

Degree and certificate students should take Techniques of Science-MedicalWriting first, if possible, and should complete that course before enrolling in a workshop or residency. Exceptions can be granted to this guideline with adviser approval. Some experienced journalists or writers will be allowed to replace one or both corecourses with other courses, as approved. Students usually take one or two courses per term, and they may take one or two terms off as personal schedules require. Thesis and Careers in Science Writing should be taken in the last term of studies, although exceptions can be made for students who need to complete a residency following Thesis. Degree students have five years to finish the nine courses; extensions and leaves of absence are possible.

Note: Under AAP guidelines, only three certificate courses can count toward the MA in Science Writing. Certificate students who become interested in the MA degree should declare their interest early to avoid the need to complete extra courses.

RESIDENCIES

Degree candidates in science writing must complete at least one course through an on-site residency; a residency is optional for graduate certificate students. Master's degree students who want more face-to-face interaction can take a second residency with adviser approval. The program offers one to two residency courses per year. While new residencies are being developed, they so far include:

Medicine in Action at Johns Hopkins Hospital: A week inside the world-famous hospital in Baltimore to experience the front lines of contemporary medical care and research. This residency usually includes sessions with winners of the Nobel and Pulitzer prizes.

Science Policy, Politics, and Funding in Washington, D.C.: A week focusing on federal research, policy, and regulation, plus the interaction of the scientific community with government. Students meet with science writers and visit Capitol Hill, federal agencies, and association offices in and around Washington.

Science in Action: This Washington, D.C., and Baltimore course spotlights active research at government organizations such as NASA, the National Institutes of Health, National Institute of Standards and Technology, the EPA, Department of Energy, and Department of Homeland Security—as well as Johns Hopkins labs in robotics, nanotechnology, and the famed Applied Physics Laboratory.

Nature, Place and the Environment: A Mountain Immersion in Shenandoah National Park: Writers explore the nature, conservation, and land use and other environmental issues of Virginia's Blue Ridge Mountains. Nature walks, field excursions, visits with naturalists, and participatory reporting provide inspiration for student writing.

On the Bay: Exploring the Chesapeake This Annapolis, Maryland-based course focuses on the shimmering beauty, complex ecology, and environmental pressures of the nation's largest estuary. Field excursions on and around the bay introduce students to scientists, policymakers, and authors who specialize in bay issues, with time allotted for students to report and receive coaching on their own stories.

In the Field: Science Writing in the Woods, Coasts, & Labs of Mt. Desert Island: With thriving environmental science centers and a world-class genetics laboratory, Maine's Mt. Desert Island is a hub of cutting-edge research as well as exquisite natural beauty. Field excursions allow students to immerse themselves in the region's stimulating natural and intellectual environments, gather story ideas, and hone reporting skills, while craft exercises and discussions provide opportunities to refine writing artistry.

For residencies, science-medical writing students pay a regular course tuition, plus a residency academic fee and costs for travel and lodging; discount housing usually is available. A residency course tuition is the same as any other course in the MA in Science Writing program; the academic fee ranges from $200 to $500, depending on location and activities.

Online Learning

Our online courses combine one-on-one feedback and group interaction. Students are trained in online learning and benefit from 24/7 technical help. The primary platform for digital courses is a special, customized version of Blackboard, one of the nation's major online education systems. However, instructors use a range of other tools in and outside each Blackboard course, including Adobe Connect, Skype, video, audio, email, wikis, Twitter, and Facebook.

Asynchronous Units: Most work in an online course is completed through a series of units that students complete on their own time and convenience, without the need to show up at a certain time and day each week. Students log in to their course, complete assignments or do other work, and engage with others over several days, a week, or more—whatever period the instructor has assigned. Each unit involves specific assignments and goals reached through a range of learning tools, including readings, exercises, video lectures, writing or reporting assignments, demonstrations, or asynchronous discussions with other students. The instructor is available for questions and feedback as students finish the unit on their own schedules and across multiple time zones.

Individual Help: The instructor provides one-on-one feedback and communication with students. This feedback may include assessment of a student's work, especially for writing assignments and revision. The communication can occur by email, direct messages, private journaling, phone calls, and written comments and editing directly on a student's writing. Online instructors also schedule individual or group appointments and hold email or video office hours.

Synchronous Discussion and Meetings: At times, students join live, synchronous discussions with fellow students and their instructor. Such synchronous discussions can occur in the course's Blackboard site or using Skype, Adobe Connect, or other methods, audio or video. These opportunities occur less often than asynchronous unit work and are announced well in advance so students can arrange to attend. Students who cannot attend will be able to monitor recordings of the sessions.

A Program Community: In addition to each course's digital features, science writing students join a broader, program-wide networkingcommunity. A program Facebook page and listserv provides job postings, information exchanges, and news about science and science writing.

COURSES

Please refer to each semester's course schedule for exact dates, times, locations, fees, and instructors for that term's courses. Only a selection of courses from the curriculum is offered each term, although core and required courses are offered more often than electives and specialized workshops. Some electives are offered only every year or two. Students usually have five years to complete their degree and should consult the policies and guidelines in the front of this catalog concerning continuation of enrollment, time limitation, and leave of absence.

Note to Students From Outside the Science Writing Program: The program encourages enrollment from students in other Johns Hopkins University graduate programs. However, non-program applicants should be aware that all writing workshops and some other courses require the completion or waiver of certain prerequisite core courses, or they require an evaluation of the student's writing skills to determine whether he or she qualifies for the desired course. Non-science writing students may be asked to submit writing samples and/or a full description of their writing experience before being allowed to register for certain courses.

Core Courses

Core courses provide foundation skills and theory in each concentration. The 491.658 Techniques course should be taken before a writing workshop, if possible. Exceptions can be made only with adviser approval.

491.658   Techniques of Science-Medical Writing *(4 credits)*
491.750   Contemporary Science Writing: Creative and Professional Forms *(4 credits)*

Workshops

Workshop requirements for the degree or certificate can be satisfied by taking any of these workshops once or more, or in any combination.

491.673-674-675   Science-Medical Writing Workshop
            (4 credits)
491.754   Science Narratives Workshop *(4 credits)*
491.755   Science Personal Essay & Memoir Workshop
            (4 credits)
491.756   Advanced Science Writing Workshop *(4 credits)*
491.757   Science Profiles Workshop *(4 credits)*

Residencies (on-site)

491.691   Science Policy, Funding, and Politics in
            Washington, D.C.   *(4 credits)*
491.708   Medicine in Action at Johns Hopkins
            Hospital   *(4 credits)*
491.709   Science in Action   *(4 credits)*
491.710   In the Field: Science Writing in the Woods,
            Coasts, and Labs of Mt. Desert Island   *(4 credits)*
491.753   Nature, Place, and the Environment: A Mountain
            Immersion in Shenandoah National Park *(4 credits)*
491.781   On the Bay : Exploring the Chesapeake   *(4 credits)*

Electives

491.696   The Nature of Nature   *(4 credits)*
491.697   The Literature of Science   *(4 credits)*
491.707   Prize Winners: The Best Writing About Science,
            Technology, Environment, & Health   *(4 credits)*
491.719   Technology Tools, Multimedia, and Digital
            Publications for Writers   *(4 credits)*
491.752   Advanced Reporting & Writing in Science *(4 credits)*
491.758   Current Issues in Science Writing   *(4 credits)*

Other Electives: With adviser approval, science writing students may consider electives from the MA in Writing program, the MA in Communication program, or other AAP or Johns Hopkins programs. Science writers may especially want to consider online Communication courses in speechwriting, op-ed writing, and other applied skills that would broaden their career options. Some courses from other programs may be online, while others may be offered only on-site in Washington or Baltimore.

INTERNSHIP, INDEPENDENT STUDY

Students should propose independent study or internships well in advance of the desired term. Review and approval of such proposals are competitive. Independent study and internships are usually only for students who have completed five or more courses. Either may count as an elective or workshop, as approved. More information can be found on the MA in Science Writing program website.

490.807   Internship in Science Writing   *(4 credits)*
490.808   Independent Study in Science Writing   *(4 credits)*

THESIS

(Required course for all MA in Science Writing students.)

490.802   Thesis and Careers in Science Writing   *(6 credits)*
490.888   Thesis Continuation

Master of Arts and Graduate Certificate in Teaching Writing

MA: Primarily online, with brief on-site residency required. Certificate: Fully online, with optional residency.

The Master of Arts and Graduate Certificate in Teaching Writing Program help teachers at all levels, K-University, in all disciplines, learn to become master teachers of writing, acquiring new and innovative ways to teach writing to their students, studying theories and best practices on the teaching of writing that they can share with their colleagues, and pursuing their own writing in an exciting and supportive online community of teachers and writers. The Teaching Writing Program allows participants to address individual situations, needs, and interests while learning within a diverse community. By offering flexible, interactive, and customized learning, the program provides a model for teaching writing and a forum where all teachers can learn and grow together as teachers of writing, and as writers too.

While we are not a teacher certification program, our courses support writing requirements in Common Core and other state or national standards. Our curriculum is nearly entirely online, with a brief residency required only for the MA; the residency is optional for the certificate. Students apply for and take courses in any of three annual terms, including fall, spring, and summer. Financial aid is available in the form of student loans, with many students expected to receive tuition assistance from employers. The program should satisfy continuing education requirements for most K-12 teachers.

The Program is built around five core principles:

1. Teachers of writing must write. Every course devotes some time and attention to having teachers explore their own writing, in whatever form or forms that course is built around.

2. Teachers can learn from studying theories and best practices in the teaching of writing. Some readings and discussions about both accepted practices and the theories behind those practices are included in every course.

3. Teachers can learn from and share with each other. Participants in the program will have experience and expertise in teaching and writing. Every course provides opportunities for participants to share that knowledge with their classmates, and to learn from each other.

4. Teachers must have the freedom and encouragement to apply what they learn to meet their own specific needs and situations. The makeup of every class includes teachers teaching at different grade levels and in different disciplines. Every course encourages teachers to reflect on what they are learning and adapt that material to suit their individual needs.

PROGRAM COMMITTEE

Brad Leithauser
Chair, MA in Writing Program; Professor, The Writing Seminars

Mark Farrington
Director, MA in Teaching Writing and Writing Program; Senior Lecturer

5. Teachers learn best in an interactive classroom (even a virtual one). Every course seeks to establish a sense of community.

Degree Requirements

The MA in Teaching Writing requires the successful completion of nine courses (36-credit hour equivalency), including the core Teaching Writing course, one course from the genre writing group, one from the reading group, one on-site residency, the thesis course, and four additional courses of the student's choice. The program offers a full slate of courses in fall, spring, and summer, with the 7-10-day residency taking place in July. Students have five years to finish their degree; extensions of up to two additional years are possible.

The Graduate Certificate in Teaching Writing requires the successful completion of five courses, including the core Teaching Writing course, one course from the genre writing group and one from the reading group, along with two additional courses of the student's choice. Certificate students enroll in the same courses as MA degree seeking students. The on-site residency is optional for certificate students and there is no thesis. Students have three years to finish their certificate; extensions of up to two additional years are possible.

All courses except the residency are fully online. We recommend, but do not require students to take the Teaching Writing core course first; however, all eight previous courses must be completed before students can take the Thesis course. Otherwise, courses may be taken in any order the student chooses. With permission, students may take as electives one or two courses in another AAP program.

Writing

Applications are considered year-round, and an accepted student may start in any of the three semesters following acceptance. Certain highly qualified applicants may be eligible for Advanced Standing. Some applicants may be granted provisional status, with permission to take one or two courses and then be re-considered for the degree. Applicants not interested in a degree or certificate may seek permission to take individual courses as a special student; such applicants must follow the usual application process and obtain adviser approval for any course desired.

TEACHING WRITING APPLICATION REQUIREMENTS

> Completed Application
> Résumé or Curriculum Vitae
> Transcripts from all college studies and latest degree.
> 750-1000 word Statement of Purpose, describing your professional goals and interests in using writing in your teaching and in exploring your writing.
> Up to ten pages (2500 words) of a writing sample or samples of any genre or type.
> Optional: Up to three letters of recommendation directly related to teaching skill, writing, or teaching promise.

APPLICANT REVIEW PROCESS

> Once an application is complete, the Admissions Department will submit a request for review by the Program Admissions Committee.
> The Program Admissions Committee consists of the Program Director and faculty members.
> Applications are reviewed as they are received by the committee so that review times may vary depending on the number of completed applications submitted.
> The committee reserves the right to contact the applicant for additional evidence of qualifications or to clarify provided materials.
> Once admitted to the program, the student will be allowed to register, after speaking to a faculty adviser.

Statement of Purpose

The Statement of Purpose should describe the applicant's education, experience and interest in both teaching writing and exploring the applicant's own writing. The statement should not exceed three double-spaced typewritten pages, and should specify whether the applicant is seeking the M.A. degree, the Graduate Certificate, or individual courses as a special student.

Writing Samples

The writing sample may be in any form or genre, on any subject, and should not exceed ten typed, double-spaced pages.

Faculty

The Teaching Writing Program's faculty features long-time, award-winning teachers who are also practicing writers. Our faculty members have taught at all levels, from kindergarten through graduate school, including colleges and community colleges and public and private K-12 schools. Our approach combines principles about teaching writing learned from the National Writing Project with an approach to writing developed over our more than twenty years' experience with the Johns Hopkins M.A. in Writing Program.

The program is chaired by Brad Leithauser, a novelist, poet, essayist, journalist, and professor at The Writing Seminars at Johns Hopkins. The program director is Mark Farrington. Among our senior faculty are Ed Perlman, Susan Muaddi Darraj, Heidi Vornbrock Roosa, and Joanne Cavanaugh Simpson. Other visiting and adjunct instructors include Evan Balkan, Nick Maneno, Kim Sloan, Mary Tedrow, and Catherine Hailey.

PROGRAM CHAIR
Brad Leithauser, a novelist, poet, essayist, journalist, and professor at The Writing Seminars at Johns Hopkins, is the chair of the MA in Teaching Writing Program, the MA in Writing Program and the Science Writing Program in the Advanced Academic Programs at Johns Hopkins. As chair, Leithauser advises the programs and their leadership on academic issues and serves as liaison with the Writing Seminars, the full-time Hopkins faculty, and with university leadership.

PROGRAM DIRECTOR
Mark Farrington is the Program Director for the new Teaching Writing Program. He has also taught creative writing, composition, technical writing and literature at George Mason University and first-year writing at Mary Washington College. He taught High School English and Dramatics at Abington Friends School, and also taught creative writing to students in grades 4 through 6 during a one-year appointment as writer-in-the-schools, a program funded by the Massachusetts Arts Council. For more than twenty years, he has been a Teacher/ Consultant with the Northern Virginia Writing Project and is a member of their advisery board. Three times he received the M.A. in Writing Program's Outstanding Teaching Award, and has also received the Outstanding Faculty Award from the Advanced Academic Programs. Farrington has an MFA in fiction writing. He has published several articles on writing and the teaching of writing, and his fiction has appeared in *CARVE, The Valparaiso Fiction Review, The Louisville Review, The New Virginia Review, The Potomac Review, Union Street Review*, and other journals, and has been anthologized in *Confessions: Fact or Fiction, in Stress City: A Big Book of Fiction by 51 DC Area Guys, in October Mountain: An Anthology of Berkshire Writers*, and in *The Third Berkshire Anthology*. Farrington has also won a Virginia Commission on the Arts Individual Artists Fellowship, the Dan Rudy Fiction Prize, and the Metroversity Fiction Award. His short story, "*Motherlove*" won an Editor's Choice Award in the Raymond Carver Short Story Contest and was nominated for a Pushcart Prize.

SENIOR FACULTY

Joanne Cavanaugh-Simpson is a writer and lecturer in the Writing and Teaching Writing Programs. She is a former staff writer for The *Miami Herald* and *Johns Hopkins Magazine*, and she has written feature articles and foreign correspondence for such venues as the *Baltimore Sun, USA Weekend, Style Magazine, Atlanta Journal-Constitution*, and *The American Journalism Review*, including a series of articles reported from Cuba and China. Her literary essays have appeared in the journal *Creative Nonfiction* and the essay collection, *Letters to J.D. Salinger*. Cavanaugh- Simpson earned her bachelor's degree in journalism from the University of Maryland and her MA from Johns Hopkins' Writing Seminars. Her master's thesis, on Cuba's dissident journalists, was funded by Harvard University's Goldsmith Research Award.

Susan Muaddi-Darraj earned her MA in English Literature from Rutgers University, where she also taught classes in fiction. Her recent collection of short fiction, *A Curious Land,* won the 2016 American Book Award, the AWP Grace Paley Award for Fiction and the Arab American Book Award. Her collection of short stories, *The Inheritance of Exile*, was named a finalist in the 2003 AWP Book Awards Series and published in 2007 by University of Notre Dame Press. She previously edited *Scheherazade's Legacy: Arab and Arab American Women on Writing* (Greenwood/Praeger Press 2004) and co-edited *Approaches to Teaching the Work of Naguib Mahfouz* (Modern Language Association 2012). Susan's fiction has appeared or is forthcoming in *New York Stories, The Orchid Literary Review*, Mizna, and elsewhere. Her articles, essays, and reviews have appeared in *City Paper, Full Circle, The Philadelphia Inquirer, Pages Magazine, Sojourner, Calyx, The Christian Science Monitor, Jouvert*, and in many other publications. She has contributed book chapters to several anthologies and collections, and she has authored several nonfiction titles for children and young adults for Chelsea House and Rosen Publishers. She has spoken about fiction writing and publishing at the Rutgers Summer and Spring Writer's Conferences, the Baltimore Writer's Conference, and the Saint Joseph's University Reading Series; she's also been a featured speaker at the University of Miami, Fairfield University, Stanford University, University of Richmond, University of Hartford, and elsewhere. She co-founded Conversations and Connections, an annual Washington DC-area conference aimed at helping writers improve their craft. In addition to her teaching duties in the Hopkins Writing Program, she is currently associate professor of English at Harford Community College.

Ed Perlman is the publisher and senior editor of Entasis Press, an independent literary press publishing poetry, fiction, and creative nonfiction. His poetry, essays, and reviews have appeared in numerous journals including *Tin House, The Sewanee Theological Review, Passages, Outside In, and The Living Church*, and in various anthologies. He has received an artist fellowship grant from The Washington DC Commission on the Arts and Humanities and the NEA, and has been an associate artist at the Atlantic Center for the Arts. He teaches in both the M.A. in Teaching Writing and the M.A. in Writing programs at Johns Hopkins University, where he was the program's poetry adviser. He has a BA in philosophy from William and Mary, an MA in Education from Virginia Tech, and an MA in Writing from Johns Hopkins University. He has more

than thirty years of classroom teaching experience, including high school English and humanities, community college English, and both undergraduate and graduate level writing.

Heidi Vornbrock Roosa has taught composition and creative writing at both the undergraduate and graduate levels. The Johns Hopkins M.A. in Writing program granted her the student-nominated 2015-2016 Award for Teaching Excellence. Vornbrock Roosa also provides critiques for private creative writing clients. Additionally, she teaches undergraduate fine arts and humanities and formerly acted as the Gallery editor at *The Doctor T. J. Eckleburg Review*. Her creative short work has appeared or is forthcoming in *The Normal School, Pear Noir!, 3QR, Literary Mama, The South Dakota Review*, and was chosen by Madison Smartt Bell for inclusion in the *Sampler*. As well, her pseudonymous genre and crime fiction has been published by CUSP Books, Shots (UK); has received the Malice Domestic Grant; and has been awarded a place on the British CWA's Debut Dagger shortlist.

Johns Hopkins Summer Programs

The Johns Hopkins Summer Programs offers many different types of credit and non-credit courses to Hopkins undergraduates, visiting undergraduates, and qualified high school students. The Krieger School of Arts and Sciences and the Whiting School of Engineering sponsor the summer session courses, providing the same academic rigor as required in their spring and fall terms. In addition, to earning college credit, students experience life at Hopkins while living on campus and engaging in academic and social activities with their peers.

We offer four exciting summer options for students: Discover Hopkins, Summer University, Mini Term, and EducationUSA Academy.

The **Discover Hopkins Program** is an intensive program designed to expose selected students (ages 15-18) to various programs such as *The Hospital, MedicalSchool Intensive, Miracles of Modern Medicine, Physiology and Disease, Application of Abnormal Psychology to Forensic Cases, The Psychology of Police Deadly Force Encounters* and more. The Discover Hopkins program runs for two-weeks and is available to both residential and commuter students during three different terms. Students may enroll for one, two, or all three terms.

The Johns Hopkins **Summer University Program** offers Hopkins undergraduates, visiting undergraduates, and pre-college students the opportunity to take freshman and sophomore JHU credit classes in arts and sciences and engineering with many of the same faculty that would teach the course during fall and spring terms.

Mini-Terms offer benefits of the Summer University program, but the courses are condensed into two intensive weeks. The one-credit courses offered during Mini-Term focus on a specific topic and offer a great opportunity for academic exploration.

EducationUSA Academy provides a world-class academic and cultural immersion experience for international high school students ages 15-17. Students will improve their academic English, and learn about the U.S. education system with visits to historic colleges and universities. The educational and cultural activities immerse you in the American experience. Must be non-US citizens only.

Commuter Program offers students who live within a reasonable distance from the Homewood campus a chance to take JHU Summer Courses.

For more information on the programs, please visit our website at www.jhu.edu/summer. If you have any further questions about our application and admissions process, please contact the Office of Summer Programs at 410-516-4548 or summer@jhu.edu.

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President, Johns Hopkins University

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Fred Bronstein
Dean of the Peabody Institute

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Ralph D. Semmel
Director of the Applied Physics Laboratory

Winston Tabb
Sheridan Dean of University Libraries and Museums

Beverly Wendland
James B. Knapp Dean of the Zanvyl Krieger School of Arts and Sciences

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Stephen M. Ruckman
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Fritz W. Schroeder
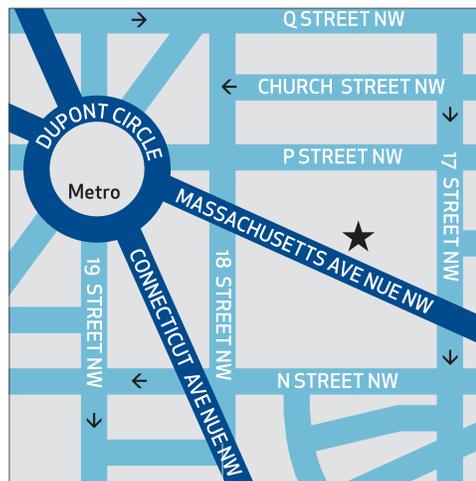Vice President for Development and Alumni Relations

Christy Wyskiel
Senior Adviser to the President for Enterprise Development

Campus Locations

The Advanced Academic Programs holds classes at three locations:
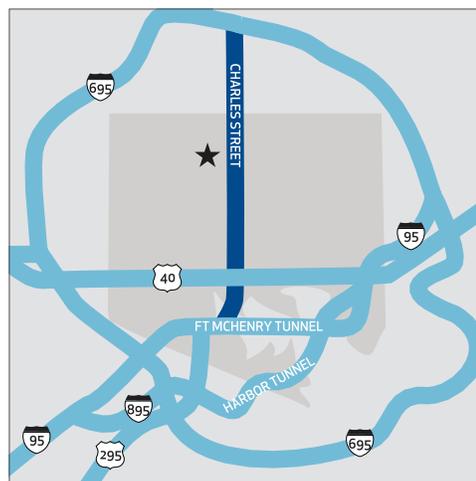
THE WASHINGTON, DC CENTER

1717 Massachusetts Ave. NW, Suite 104
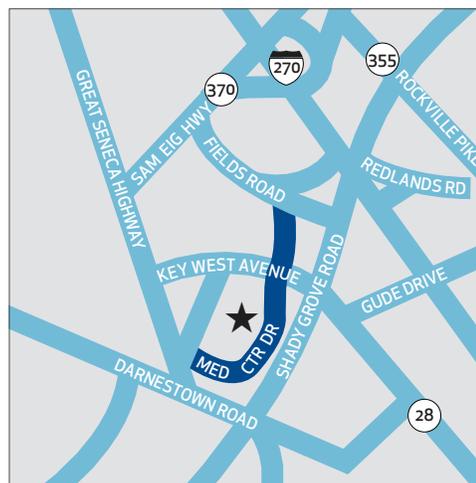Washington, DC 20036
202-452-1280

HOMEWOOD CAMPUS

Wyman Park Building, Suite S740
3400 N. Charles St.
Baltimore, MD 21218
410-516-6749

MONTGOMERY COUNTY CAMPUS

9601 Medical Center Drive
Rockville, MD 20850
301-294-7000

ABOUT
JOHNS HOPKINS
UNIVERSITY

Johns Hopkins University, founded in Baltimore, Maryland, in 1876, was the first research university in the Western Hemisphere that integrally linked teaching and research for the advancement of knowledge. Its establishment engendered a revolution in U.S. higher education.

Over the course of nearly 20 years, Advanced Academic Programs has worked diligently to add new degree programs that fit within the academic structure of the School of Arts and Sciences and satisfy the demands of the marketplace. This approach to growing AAP has quickly become its hallmark, allowing it to be nimble and forward-thinking while staying true to its core academic disciplines.