

A reading list before starting the M.S. in Geospatial Intelligence

Geospatial intelligence, a new profession, combines history, mathematics, science and art. As the Geospatial Intelligence program at Johns Hopkins, is interdisciplinary, students have asked about what should they read before starting the program. To accelerate thinking about the profession and the curriculum, here are some preliminary readings. None of these books specifically cover Geospatial Intelligence as it is being practiced and defined today, but they communicate very well the foundational ideas and practices essential for career success.

For a historical perspective,

Air Spy 1985 (published in the UK as *Evidence in Camera*, 1957) by Constance Babington-Smith.

Babington-Smith was one of the pioneer women photo-interpreters in the Royal Air Force in World War II. She recounts her discoveries of the German V-1 and V-2 missiles at Peenemunde, but her description of the analytic processes of searching images, comparing images, finding other sources, and building target knowledge remains very worthwhile.

For seeing what others may not:

Amy E. Berman. *Visual Intelligence: Sharpen Your Perception, Change Your Life.* (2016) Berman, an art historian, now teaches intelligence, diplomatic, military, commercial, medical, and law enforcement professionals to improve their visual intelligence and be more perceptive. Her thesis is that seeing better is learnable, and her book illustrates her thesis.

For the mathematics of risk management:

Peter Bernstein. *Against the Gods: The Remarkable Story of Risk*. (1996) Bernstein, who spent his professional career as a Wall Street market trader, traces the history of how humans brought risk under control. His book traces the context and creation of statistical concepts, and how they have been used to manage risk.

For the new science of data analytics:

Hannah Fry, *Hello World: Being Human in an Age of Algorithms*. Fry, an associate professor at the Centre for Advanced Spatial Analysis at University College, London, explains the increasing use of algorithms in artificial intelligence and big data in different sectors of modern life. She also raises ethical questions about the right and wrong usage of algorithms in different sectors of society.

For the logic (and illogic) of analysis:

Daniel Kahneman. *Thinking Fast and Slow*, (2011) Kahneman, winner of the Nobel Prize in economics for his work on the psychology of judgement, bias, and decision making, summarized his life's work in this book, which shows how bias and emotion modify how we think and how well we think.

For the challenges of changing intelligence organizations and cultures:

Leo Marks. *Between Silk and Cyanide: A Codemakers War: 1941-1945*. (1998) Marks' book is the best historical work on the difficulty of influencing an intelligence organization from the bottom to change its culture, even when that culture was causing many of its agents to be captured and killed. He wrote his book shortly after World War II, but the British government did not let him publish until 1998, because of his skill at code making. The book alternates between the hilarious and the tragic.

On the art of the possible in designing maps and information

Richard Saul Wurman, *Understanding Understanding*, (2017) Wurman trained as an architect under Louis Kahn. After success in designing structures, he began to study information structures and invented

the term Information Architect. He spent his long career developing that concept. Along the way, he developed the Access City guides, invented the TED Talk, and focused on thematic and conceptual maps. This book, inspired by Jack Dangermond of ESRI, summarizes Wurman's thinking about designing geospatial products.

A bonus for those who pay attention:

Richard A. Lanham. *The Economics of Attention: Style and Substance in the Age of Information (2006)*.

Lanham taught writing and literature at Dartmouth and UCLA. After starting as a renaissance scholar, he wrote about style and rhetoric throughout his career. He was a pioneer in his focus on the effects of computer technology and the Internet on communications. In his most recent work, he considers how the volume of information forces us, if we wish to be effective, to pay attention to style if we want to gain attention for our content. (In his Army service, Lanham was assigned to communications intelligence)