specialization in socio-technical data analytics (SODA)

“One of the exciting aspects about the program is the dual emphasis on social and technical aspects of data analytics. That combination makes students uniquely prepared to fill the growing workforce gap in people who can effectively manage and analyze big data.”

Dr. Catherine Blake, Associate Professor
Associate Director of the Center for Informatics Research in Science and Scholarship
Principal Investigator of the IMLS Socio-technical Data Analytics Grant
specialization in socio-technical data analytics (SODA)

What is Socio-technical Data Analytics?
Massive changes in how data are created, disseminated, and used have increased the role that information plays in industry, science, scholarship, government, and our everyday lives. Socio-technical data analytics combines both the technical (databases, social networking, data mining, and text mining) and social (economic, ethical, policy, and political) aspects of data analytics. The term “socio-technical” reflects the complex interplay between the decisions made during the collection, curation, and transformation steps in the information lifecycle, and their impact on the analytical methods that should be employed.

What is the Socio-technical Data Analytics specialization?
The SODA specialization was specifically designed to provide students with the theoretical foundations and hands-on experience necessary to fill the shortage of data management and analytic experts that has been estimated at 1.5 million in the U.S. alone. The program ensures that students understand the entire information lifecycle from the initial data creation, dissemination, analysis, use, reuse, and new data collection. Students who complete the program will understand the strengths and limitations of analytical methods, which is critical for both master’s students as they fill immediate roles as information professionals, and to inform doctoral students as they develop new methods to mitigate such limitations.

What courses will I take?
The SODA specialization is a collection of five graduate level courses (18-26 credit hours) that together uniquely prepare students to manage and analyze data. All students will take Evidence-based Discovery and Foundations of Information Processing in LIS, as well as Evidence-based Discovery or Data, Statistical Models, and Information. Students must also complete at least one technology development and one advanced analytical methods course. The course-level instruction culminates with a hands-on practicum where students work closely with faculty and industry partners to obtain first-hand experience with complex socio-technical data ecologies.

Faculty and industry partners currently affiliated with SODA have expertise in agriculture, public health, and the environment. The SODA specialization is typically taken in conjunction with a GSLIS graduate degree at the MS, CAS, or PhD levels, which each have different admissions and additional course requirements (see www.lis.illinois.edu/academics/degrees/specializations/soda for details).

Who teaches SODA courses?
GSLIS SODA faculty conduct research on how to design, develop, and evaluate new technologies in order to better understand the dynamic interplay between people, information, and technology. The SODA educational program mirrors their research effort and ensures that the current research is embedded into the curricula.

Faculty currently affiliated with SODA include Drs. Masooda Bashir, Catherine Blake, Peter Darch, Jana Diesner, Stephen Downie, David Dubin, Miles Efron, Jon Gant, Brant Houston, Bertram Ludäscher, Jerome McDonough, Victoria Stodden, Vetle Torvik, and Michael Twidale. Their research interests include data analytics, information retrieval, information and communication technologies, text and data mining, infometrics, natural language processing, network analysis, and knowledge discovery and how such methods can be applied in the sciences, humanities, government, industry, and society.

What funding opportunities are available?
Assistantships at both the master’s and doctoral levels are available through a grant from the Institute of Museum and Library Services. SODA faculty also work on grants funded by the National Science Foundation, The Andrew W. Mellon Foundation, The Robert R. McCormick Foundation, The Alfred P. Sloan Foundation, the National Endowment for the Humanities, and Google. Student support may be available from these or other sources. Please check the website for details.

Why study at the Graduate School of Library and Information Science (GSLIS)?
Consistently named the top library and information science school in the nation, GSLIS has been training leaders in information and library science for more than 120 years. The SODA specialization is situated within the Center for Informatics Research in Science and Scholarship or CIRSS (http://cirss.lis.illinois.edu), which also houses the first LIS data curation specialization (www.lis.illinois.edu/academics/degrees/specializations/data_curation) and runs weekly eResearch Roundtable and CIRSS seminars. Students from historically underrepresented groups are particularly encouraged to apply.