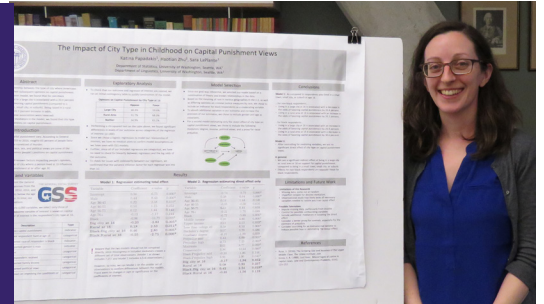


CENTER FOR STATISTICS AND THE SOCIAL SCIENCES

Data from the social and behavioral sciences have always presented particular challenges for statistical analysis, with observations often dependent on one another, key variables frequently missing, and other inconsistencies. The Center for Statistics and the Social Sciences brings together faculty and students to develop, use, and disseminate appropriate statistical methodologies for social science research.



Graduate student Sara LaPlante presents research at a CSSS poster session.

About CSSS

Founded in 1999, the Center for Statistics and the Social Sciences (CSSS) is the nation's preeminent center dedicated to the interface between statistics and the social sciences. CSSS supports interdisciplinary research that advances significant questions in social science and statistical methodology, and offers a range of courses at the graduate and undergraduate levels.

To highlight advances at the intersection of statistics and the social sciences, CSSS sponsors a weekly seminar that allows local and visiting scholars to present current research results. This seminar attracts roughly 50 students and faculty members from across campus each week, and is a crucial venue for intellectual exchange among members of the CSSS community. Research by CSSS affiliated scholars is also publicly available in our working paper series. This series currently contains over 150 papers; many have been downloaded thousands of times by scholars around the world.

CSSS invests in innovative faculty research through a seed grant program, and supports students' travel to conferences, workshops, and training programs through a competitive travel grant program. Each year we award up to five Blalock fellowships to promising incoming graduate students from affiliated departments. On an ongoing basis, CSSS provides general research and administrative support for a portfolio of about \$3.9 million in externally funded grants.

Research and Scholarship

CSSS faculty and graduate students collaborate to develop cutting-edge statistical methodologies for the social sciences, and to advance social science research more generally. Particular areas of research strength include statistical analysis of social networks, population projections, spatial statistics, and the statistical analysis of data generated by social media and other electronic data sources. Many faculty members adopt a Bayesian approach, which allows for quantification of uncertainty in statistical estimates. Another feature of CSSS research is its attention to the visual presentation of quantitative results.

Notable current projects include developing statistical methods for: population research in developing nations and other data-constrained environments, in large-scale social networks and collaborative organizations, and for the analysis of large spatiotemporal datasets in threat detection systems; development of fully probabilistic projection methods that are based on earlier CSSS-supported work that is currently used by the UN for its official population projections; and using hierarchical linear models and Bayesian regression trees to model the distribution of criteria scores to develop a methodology of detecting bias during the grant application review process.



AREAS OF SPECIALIZATION

Bayesian Statistics

Clustered Data

Social Networks

Spatial Models

Statistical Analysis of Big Data

Data Visualization



Statistics and social work professor Elena Erosheva (right), CSSS associate director, earned first place in the creativity category of a National Institutes of Health competition in collaboration with philosophy professor Carole Lee (left). Photo by Isaiah Brookshire.

Faculty

CSSS has four core faculty members and over 90 faculty affiliates. Core faculty are hired to contribute directly to the CSSS research and teaching mission, and hold appointments in at least one affiliated department. Other faculty who engage in research at the intersection of statistics and the social sciences are invited to become affiliates of CSSS and join in the intellectual life of the Center. Core faculty hold appointments in Statistics, Sociology, Political Science, the School of Nursing, and the School of Social Work, while affiliates are associated with nine departments in the College of Arts and Sciences and twenty other schools and colleges on campus.

Education

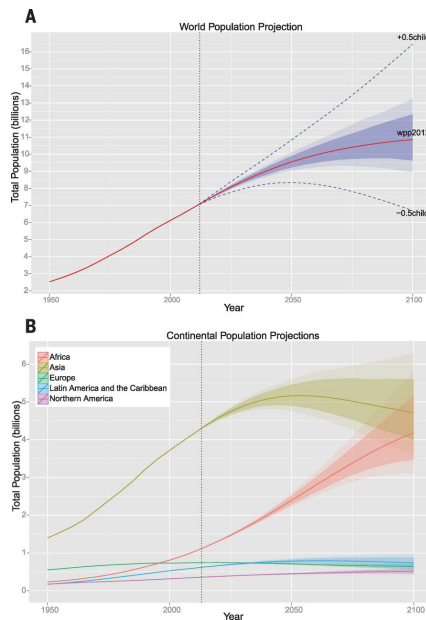
CSSS offers a diverse selection of courses in statistical methods for the social sciences at the graduate and undergraduate levels, with an average of 25 CSSS courses taught each year. These range from a first course in elementary statistics for undergraduates majoring in the social sciences to advanced graduate courses including Hierarchical Models, Event History Analysis, Social Network Analysis, Bayesian Statistics for the Social Sciences, Multivariate Analysis, and Causal Modeling. Many graduate courses provide students with opportunities to conduct their own research projects; frequently these projects result in posters, conference presentations, and publications.

To help graduate students in affiliated social science departments prepare for advanced courses in social statistics, CSSS offers an annual summer Math Camp, as well as preparatory courses in mathematics and computer programming during the year.

CSSS has partnered with PhD programs in the social sciences to formally recognize students who acquire substantial expertise in statistical methodology through CSSS courses. Currently eleven PhD programs at the UW offer this PhD specialization in social statistics, including Anthropology, Communication, the Evans School of Public Affairs, Geography, the Jackson School of International Studies, the School of Nursing, Political Science, the School of Social Work, Sociology, Statistics, and Urban Design and Planning. In addition, an individualized concentration in social statistics allows students in unaffiliated departments to gain recognition for their CSSS training. More than 240 PhD students have completed PhD-level specialization in social statistics since 2010.

Outreach

The CSSS Consulting Service offers assistance with research design and statistical analysis for faculty, graduate students, administrators, and others engaged in social science research, broadly defined. CSSS Consulting serves approximately 100 clients a year; since 2012, consultants have worked with researchers affiliated with over 50 departments on campus, as well as various centers and administrative units. A recent consulting project developed into a prize-winning collaboration.



New Bayesian Projections of World and Continental Populations. Building on methodology developed by CSSS Founding Director Adrian Raftery and his collaborators, the United Nations has recently modernized its approach to population projections so that they better account for uncertainty. Figure published in *Science* (346:234-237 (2014).)

SELECTED FACULTY AWARDS, HONORS, AND SERVICE (SINCE 2010)

Member, National Academy of Sciences

Member, American Academy of Arts and Sciences

Member, Washington State Academy of Arts and Sciences

Emmanuel and Carol Parzen Prize for Statistical Innovation

First Prize, Most Creative Idea for Detection of Bias in Peer Review, NIH

Mitchell Prize in Bayesian Statistics

Charles H. Levine Memorial Book Prize

Robert Wood Johnson Scholar

American Statistical Association Award for Outstanding Statistical Application

Science Foundation Ireland, St. Patrick's Day Medal

National Science Foundation Advisory Panel for Methodology, Measurement, and Statistics Program (multiple)

Editor, *Journal of Computational and Graphical Statistics*

Editor, *Bayesian Analysis*

STUDENTS

COURSE ENROLLMENTS (2017-2018)

510 Undergraduate students

527 Graduate students

PHD SPECIALIZATIONS COMPLETED (2010-2018)

242 PhDs from 13 different PhD programs

last update: December 2018