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.

CSSS Math Camp is offered during summer quarter to social sciences graduate students.

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 over $1.3 million in externally funded grants.

CENTER *for* STATISTICS *and the* SOCIAL SCIENCES

AREAS OF SPECIALIZATION

Bayesian Statistics

Clustered Data

Social Networks

Spatial Models

Statistical Analysis of 'Big' Data

Data Visualization

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: the development of latent space and latent class models for social network analysis, which help us understand the structure and dynamics of phenomenon such as the spread of disease, social influence among students, and international trade and conflict; the development of probabilistic population projections for all countries in the world; extension of Bayesian hierarchical registration curve methods to analyze life-course trajectories of deviant behavior, including marijuana use; and multiple projects utilizing data from mobile phones and Twitter to recover population characteristics, communication patterns, and migration flows.

Statistics and social work professor Elena Erosheva (right), CSSS director of consulting, 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 six core faculty members and close to 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, Biostatistics, 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 ten other schools and colleges on campus.
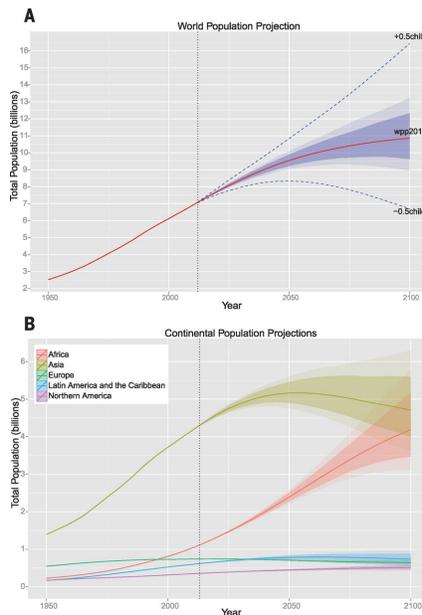
Education

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 pre-paratory 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 ten PhD programs at the UW offer this PhD specialization in social statistics, including Anthropology, 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. Over 100 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).)

STUDENTS

COURSE ENROLLMENTS (2013-2014)

462 Undergraduate students

420 Graduate students

PHD SPECIALIZATIONS COMPLETED (2010-2014)

100 PhDs from 10 different PhD programs

last update: January 2015