



# DEPARTMENT OF STATISTICS

We study the science of data. This includes tools for designing experiments, modeling and analyzing data to answer scientific questions, and displaying complex relationships. Interesting methodological questions are mostly derived from scientific problems, and the department is highly multi-disciplinary.



## Research

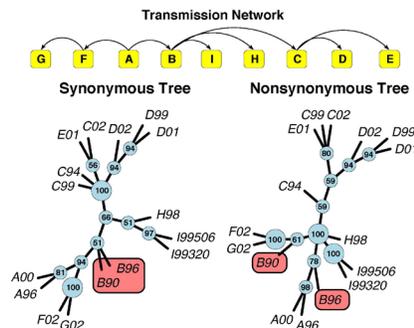
Much of the current research in the Department of Statistics emanates from scientific problems in other fields. For example, statistical tools developed for image analysis have found use in genetics and epidemiology, and models developed for speech recognition have found important uses in hematology and hydrology. Most faculty members have at least one scientific specialty outside of statistics. The department is internationally recognized as a leader in both research and industry. For example, the department was ranked 3rd to 6th (out of 61) among United States Statistics departments in 2010 by *US News and World Report* and by the National Research Council rankings.

Department of Statistics faculty have joint appointments with Biostatistics, Mathematics, Sociology, Social Work and Nursing. The Center for Statistics and the Social Sciences (CSSS) is a multi-disciplinary center focusing on developing statistical methodology relevant to social scientists. CSSS also teaches many joint courses with the Statistics Department, mostly at the graduate level. In addition to joint appointments, statistics faculty have on-going collaborations with colleagues in Astronomy, Computer Science and Engineering, Epidemiology, Genome Sciences, Global Health, Occupational and Environmental Health, Political Science, Psychology, among others. The Department is a member of the multi-disciplinary Center for Studies in Demography and Ecology, participates in the interdisciplinary graduate program in Quantitative Ecology and Resource Management, and has a variety of cross- or multi-disciplinary research programs.

The departments of Statistics and Biostatistics are close partners both in research and in graduate education. For example, together with colleagues in Genome Sciences, the two departments offer exciting opportunities for graduate study in statistical genetics—the development of models and methods for the analysis and interpretation of genetic data observed at any level from the cell nucleus to the species.

## AREAS OF RESEARCH INCLUDE:

- Bioethics of Reproductive and Bayesian Inference
- Causal Inference
- Empirical Processes
- Environmental Statistics
- Graphical Models
- Image Analysis
- Markov Chain Monte Carlo Methods
- Network Models
- Nonparametric Bayesian Inference
- Semiparametric Models
- Spatial Statistics
- Statistical Machine Learning
- Statistical Genetics
- Stochastic Models



Above: The Department of Statistics identity reflects statistical research in the Pacific Northwest.

Left: Phylogenetic analysis of HIV sequences from a transmission network.

## Faculty

Department of Statistics faculty honors include:

- 3 National Academy of Science members\*
- 1 Institute of Medicine member
- 3 American Academy of Arts and Sciences members\*
- 2 American Association for the Advancement of Science Fellows\*
- 1 Distinguished Teaching Award
- 1 Royal Irish Academy member
- 1 Bronze Guy medal from the Royal Statistical Society

Executive editor of *Statistical Science*, and numerous co-editors and associate editors across both statistical and subject-matter journals.

Awards from the American Statistical Association (ASA) and other academic societies since 2009 include ASA Founders Medal, ASA Noether Award, ASA Outstanding Statistical Application award, AAPA Rohlf Medal.

Many faculty receive grant support from a variety of agencies including NSF and NIH, the latter including an R37 MERIT Award.

*\*includes adjunct faculty*

## Education

In addition to offering its own major and minor degrees, the Department of Statistics is a participant in the Applied and Computational Mathematical Sciences (ACMS) major. There are many opportunities for undergraduate research in Statistics. Undergraduates have been involved in research in data mining, spatial statistics, mathematics education, and visualization.

While continuing its previous MS program for part-time and concurrent students, the Department has also initiated a new full-time MS program in Advanced Methods and Data Analysis, and has strengthened its PhD curriculum. Together, the MS and PhD graduate programs offer a broad range of courses, many taught in close collaboration with the Department of Biostatistics.

## Outreach

The Department of Statistics has a strong educational outreach program that includes:

- Middle and high school tutoring, with graduate and undergraduate students providing regular tutoring hours at two local schools;
- In-service teaching, through which faculty and graduate students help K-12 teachers develop teaching materials for statistics and probability;
- Network of AP statistics high school teachers;
- Leading workshops at the Northwest Mathematics Conference (the regional conference for mathematics teachers); and
- Classroom outreach, involving faculty members and graduate students teaching hands-on statistics in local schools.

## FACULTY

- 16 Professors
- 1 Research Professor
- 4 Associate Professors
- 3 Assistant Professors
- 1 Principal Lecturer
- 1 Emeritus Professor
- 11 Adjunct Faculty from other campus departments
- 13 Affiliate Professors from local industry and other universities

## STUDENTS (Autumn 2013)

- 126 Undergraduate majors, Statistics
- 5 Undergraduate majors, ACMS (Statistics)
- 25 Master of Science students, full-time program
- 8 Master of Science students, part-time or concurrent
- 47 PhD students

## DEGREES AWARDED (2012-2013)

- 31 Bachelor of Science (Statistics) degrees
- 3 Bachelor of Science (ACMS-STAT) degrees
- 7 Master of Science degrees
- 7 PhD degrees

## MAJOR STUDENT AWARDS (Since 2012)

- 1 NSF Graduate Fellowship
- 1 NDSEG Fellowship

last update: November 2013