INSTITUTE FOR RESEARCH ON STATISTICS AND ITS APPLICATIONS (IRSA)

The *Institute for Research on Statistics and its Applications* (IRSA) was founded in 2016 by the School of Statistics and the College of Liberal Arts. The Institute will promote research in all aspects of statistics and data science, foster the growth of collaborative and interdisciplinary research involving statistics and data science, and advance the use of statistical and data science methodology in activities directed at the critical challenges facing humanity.

In May 2017 IRSA will host its inaugural interdisciplinary spring research conference on *Neurostatistics: The Interface Between Statistics and Neuroscience*. Topics for the conference will change every year. The participants will be split between statisticians and domain scientists.

Some current projects include:

- Big data and networks, focusing on social, behavioral, political, media, business, transportation, sustainability, and ecosystems.
- Analysis methods and software for neuroimaging, analysis of neuroscience information on emotions, vision, and degenerative diseases.
- Climate data analysis.
- Precision medicine, genomics, biomechanics, and evolutionary models

HISTORY OF THE SCHOOL

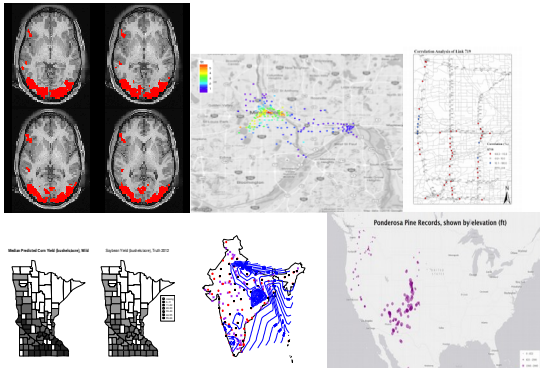
In 1943 a Statistics PhD program was established at the University of Minnesota and in 1947 a Statistics Master's program was introduced. These programs remained under the Graduate School until the 1958 when the Department of Theoretical Statistics was established in the College of Liberal Arts. In 1969 the Department of Applied Statistics was formed on the St. Paul campus. The School of Statistics was founded in 1971 to combine the two groups with Seymour Geisser as the first Director of the School. The School offers a BA in Statistical Practice, a BS in Statistical Science and MS and PhD degrees.

RANKING

The School consistently ranks between 10 and 15 among all statistics departments and between 5 and 10 among those in public universities. Recently the School was ranked as the 14th best value for undergraduates.

School of Statistics

Update for Fall 2016



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UNIVERSITY OF MINNESOTA
Driven to Discover℠

UNDERGRADUATE PROGRAMS

In January of 2016, students could start declaring our new undergraduate degree programs. The following enrollment numbers were calculated on November 1, 2016. There are 247 students currently majoring in one of our undergraduate degree programs: the new Statistical Practice B.A. program has 51 students, the new Statistical Science B.S. program has 75 students, the old Statistics B.A. program has 80 students, and the old Statistics B.S. program has 41 students. There are also 81 students currently minoring in statistics. Full implementation of the new courses and degree programs will be complete in 2017.

GRADUATE PROGRAMS

The School currently has 47 PhD students, 58 MS students, and 17 graduate minors. CLA has made funding commitments that will allow us to increase this to 55 PhD and 65 MS students by Fall 2019. PhD students are financially supported for 5 years. MS students are not guaranteed any financial support. Approximately 45% of PhD students go to academe. The others find employment in industry. MS students typically work in industry but a few join the PhD program every year.

University of Minnesota
Academic Health Center
Office of Education

College of Science & Engineering

The School joined with the Academic Health Center and the College of Science and Engineering to create an MS program in Data Science. We are in the 2nd year of the program and it currently has approximately 45 students. The first cohort will graduate in spring 2017.

EXPERIENTIAL LEARNING

Both undergraduate and graduate students gain experience by participating in internships, working on projects for *Lynn Y. S. Lin Statistical Consulting Center*, *Statistics in the Community*, and joining *StatClub* to compete in the Midwest Undergraduate Data Analytics Competition.

Project for Pride in Living
Hennepin County Library
Minnesota Pollution Control Agency
tcf
SEAGATE

We continue to expand the School's internship program. In this past year alone we had 15 undergraduate students at 13 different locations. All 2nd year PhD students are required to do an internship. MS students are encouraged to do so.

Students were employed at non-profit agencies such as the Hennepin County Library, Data Science for the Social Good, Project for Pride in Living, and the Minnesota Pollution Control Agency. These were unpaid internships that were made possible by donors. Students also worked at many for-profit companies including Ativa, Seagate, Travelers, Syngenta, Eli Lilly, Alexion, Google, Apple, Parsimony, and TCF Bank.

FACULTY IN TRANSITION

The School's faculty continues its transition. Doug Hawkins and Sandy Weisberg are retiring in 2016 but the School has been authorized to hire five assistant professors over the next three years.

LOOKING FORWARD

The School is continuing to seek opportunities for collaboration. Some of the opportunities we are currently working are.

- University Data Science Initiative.
- Undergraduate degree in Data Science
- National Science Foundation application in the foundations of data science jointly with Computer Science and Math.
- MS degree in Actuarial Mathematics and Statistics administered jointly with the School of Mathematics.
- Training workshops and short courses.
- Experiential learning opportunities for students.
- Fellowship support for students.
- Faculty engagement with industry.

SCHOOL IN TRANSITION

The School aspires to increase engagement across the university, with industry, and the community while providing first-rate training for students at all levels and producing fundamental research advances in statistical and data science methodology.