

May 1, 1986-April 30, 1987

Department of Statistics - Dr. Dean L. Isaacson, Department Head

Statistics at ISU is made up of three interlocking and complementary parts: The Department of Statistics in the College of Sciences and Humanities; the Statistical Laboratory, an institute under the Office of the Vice President for Research; and the Statistics Department of the Agriculture and Home Economics Experiment Station. Faculty of the S&H department typically also hold appointments in one or both of the other components of the statistical center. Some of them hold joint appointments with other academic departments in recognition of applied statistics subject-matter expertise. Such joint appointments and similar arrangements made for support of statistics graduate students are one source of our vitality in applied statistics and strength in providing consulting service to the rest of the university.

Our goals:

- a. To be a world leader in a broadly based program of research and teaching of statistics at the graduate level, with special emphasis on applied statistics.
- b. To offer useful and challenging graduate level service courses designed, through sectioning and appropriate staffing, to meet the needs of different groups of students; and to provide superior statistical consulting services throughout the University for faculty and students engaged in research.
- c. To teach a broad spectrum of courses at the undergraduate level, recognizing the differing requirements of students in the biological, physical, or social sciences, in the humanities, and in business and engineering; at the same time to offer a wide choice of courses to undergraduate statistics and biometry majors.
- d. To extend superior statistical consulting and research services beyond the University to researchers in local, state, and federal agencies and industry as time and resources permit.

1986-87 highlights:

- a-1. The Department of Statistics has decided to undertake the revision of the Snedecor-Cochran book on Statistical Methods for the Iowa State University Press. This will be the eighth edition of George W. Snedecor's pioneering book, which has been translated into a number of languages and has had a world-wide influence on the use of statistics in agricultural research and development. A contract was signed with the press in January 1987.
- a-2. Our strong national and international role in the field of statistics was recognized in several ways.

Noel Cressie and Glen Meeden were honored as fellows of the American Statistical Association. William Q. Meeker, Jr., editor-elect, became editor of Technometrics for 1987-89. William Kennedy continued as editor of The American Statistician.

The faculty and graduate students gave 21 papers at the 1986 joint statistical meetings of the American Statistical Association, Biometric Society (ENAR and WNAR), and Institute of Mathematical Statistics. They gave over 60 talks, invited lectures, and seminars at other conferences and other universities during the period May 1, 1986-April 30, 1987. These included presentation of papers by K. Athreya, David Harville, Noel Cressie and William Q. Meeker, and Wayne Fuller, respectively, at international conferences held in the U.S.S.R., Australia, Canada, and Norway. In addition, Noel Cressie gave a course of twelve lectures on spatial statistics in Lausanne, Switzerland, in May and June 1986 for the Troisième Cycle Statistique et Probabilités Appliquées offered jointly by the Universities of Geneva and Lausanne.

- a-3. The preprint series initiated by the Statistical Laboratory in 1986 contains 60 technical reports. Articles may be placed in the series if not yet published. This series seems to be successful in advertising and making available current research being carried out in the department. About one fifth of the articles have now been published; others are accepted for publication; some are still under consideration.
- a-4. A Master of Science program in operations research was approved by the Board of Regents as a joint offering in the Department of Statistics and the Department of Industrial Engineering.
- a-5. H. A. David prepared a second revised and expanded edition of his 1963 Griffin monograph The Method of Paired Comparisons. He also presented a special 1-credit seminar course on this subject.
- b-1. David Cox received the Margaret E. White Award on May 13, 1986, "in recognition of an outstanding commitment to excellence in graduate education and for distinguished service as a member of the Graduate Faculty at Iowa State University."
- b-2. A Handbook of Introductory Statistical Methods, by C. Philip Cox, was published by Wiley in 1987. This was developed to complement instruction in a first course on statistical methods (such as Stat 401) for graduate students expecting to use such methods in their own research. It is also a reference source for scientists working in quantitative research areas.
- c-1. W. Robert Stephenson was selected as the Outstanding Academic Advisor in the College of Sciences & Humanities for 1986-87.
- c-2. Within the university, services to the College of Business Administration through consulting and teaching continued and led to development of Stat 201, Applied Regression Analysis for Business, offered initially fall semester 1986 as an experimental course and approved for the 1987-89 catalog. Enrollment in Stat 231, Probability and Statistics for Engineers, has roughly tripled since 1981.
- d-1. The continued emphasis placed on activities related to engineering and industrial statistics bore fruit this year. Bandag, Inc., Muscatine, Iowa, became the sixth company to join Iowa State University in the university/industry affiliate program sponsored by the Department of

Statistics and the Department of Industrial Engineering. Statistics faculty cooperated in presentation of short courses, a conference on quality and productivity, and a special seminar for affiliates and other companies. Three of these (two through the Engineering Extension Service and one sponsored by the American Meat Institute) were offered on campus; others were given on location in industry.

Other 1986-87 activities and accomplishments

a-6. Dean Isaacson, acting head of the Department of Statistics and acting director of the Statistical Laboratory and the AHEES Statistics Department, became head and director July 1, 1986.

a-7. Krishna Athreya was on faculty improvement leave during the academic year to engage in research in India, primarily at the Indian Statistical Institute Bangalore Centre, through December and then in California at the Mathematical Sciences Research Institute-Berkeley on a mid-career sabbatical for the spring semester. Edward Pollak was granted leave without pay fall semester 1986 to be a visiting professor in the Department of Animal Sciences, University of Illinois, Champagne-Urbana.

a-8. B. K. Kale, professor of statistics from the University of Poona, India, was visiting professor through mid-summer 1986; George Battese, from the Department of Econometrics, University of New England, Australia, became visiting professor January 12, 1987, on a one-year appointment. Fetih Yildirim, chair of the Department of Statistics, Middle East Technical University, Ankara, Turkey, is here as Fulbright senior scholar and, from January 1, 1987 on, also visiting associate professor. Ishay Weissman, Technion--Israel Institute of Technology, was visiting professor for two months for research under H. A. David's U.S. Army Research Office grant. Jingyu Liu was a visiting scholar through December, from Inner Mongolia Forestry College, China.

a-9. With support from alumni contributions, a newsletter is being developed for statistics alumni, former faculty, and friends. It will include discussions of new developments in the department, faculty profiles, student profiles, alumni news, and, when possible, short semi-technical articles to keep readers in touch with statistical advances.

a-10. The National Science Foundation, Office of Naval Research, Army Research Office, U.S. Department of Health and Human Services, Soil Conservation Service, Bureau of the Census, American Statistical Association, USDA Agricultural Research Service, USDA Statistical Reporting Service, and Boeing, in addition to SHRI, supported faculty and graduate student participation in research.

b-3. Contacts between statistics faculty and biotechnology faculty increased. Assistantship support for a statistics graduate student has been arranged for next year to help give data processing and statistical consulting services to the biotechnology program.