



IOWA SECTION MAA NEWSLETTER

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Edited by A. M. Fink

October 1987

Iowa Section Meeting

The spring meeting of the MAA jointly with the Iowa Section of ASA and SIAM is scheduled for April 15 and 16, 1988, at Grinnell College. The tentative schedule is as follows:

Friday, April 15	1-3 p.m.	Student papers
	3-5 p.m.	Demonstrations of classroom computer usage
	7 p.m.	Invited lecture
Saturday, April 16	8:30-10 p.m.	Informal mixer
	8 a.m.-12 noon	Registration, lectures, business meeting
	1-5 p.m.	Concurrent sessions

There will be an official call for papers sent out in February. Charles Jepsen of Grinnell is the program chair. If you have something you'd like to do, contact him.

News from the Departments (This is edited and may not resemble the form in which these items were submitted.)

Wartburg College: Lynn Olson and Bill Waltmann attended the Sixth Biennial Summer Service Seminar at Duluth. The topic was Linear Algebra and Graph theory. Glenn Fenneman attended the Math. Leadership Workshop at UNF. August Waltmann attended a seminar on Communicating Disney Style held in Orlando, Florida (Do you suppose this has something to do with Mickey Mouse courses?) (Augie will probably give a paper in the spring about this.)

Drake University: Joe Hoffert retired at the end of the 1985-86 academic year. (This is olds not news). He has served as an officer in our section in the past. Milan Randic returned after a year sabbatical. He was named Ellis and Nelle Levit Professor of Mathematics. Stuart Klugman is visiting Drake this fall helping with the Actuarial Program.

Grinnell College: The department has a weekly seminar studying the book "The Banach-Tarski Paradox," by Stan Wagon. Chuck Jepsen and Gene Herman finished a work text and software package entitled, "The Matrix Algebra Calculator: Linear Algebra Problems for Computer Solution." This will be published shortly by Brooks/Cole. Henry Walker is working on a 2nd semester computer science book. He is also continuing his consulting for the College Board AP program. He would be happy to talk to people about the AP Computer Science Program. Anita Solow is continuing as an Associate Editor of the American Mathematical Monthly. Gene Herman is on leave at Carnegie Mellon University. Henry Walker was promoted to professor.

Coe College: Calvin Van Niewaal is on sabbatical at University of Iowa working on an MS in Computer Science. Lloyd Lewis is the director of academic computing.

Iowa Central Community College: Melvin Fischer has retired and Martin E. Nass has assumed the duties of the Mathematics Department Head.

Luther College: Joyce Becker has been appointed to a new three year term on the subcommittee on contests of the MAA. She also continues to serve on the Board of Governors of Mu Alpha Theta, and was a speaker at the summer meeting of Mu Alpha Theta in Seattle. George Trytten is on sabbatical leave, and plans to write lecture notes for a multi-variable calculus course with a linear algebra prerequisite. We have a new faculty member - Steve Schlicker. Steve is an algebraist, with his Ph.D. from Northwestern University.

Maharishi International University: Eric Hart is on leave at the University of Iowa. Tom Boerkoel will teach for one month at MIU - Norway in Oslo this fall. Visiting faculty this year include John Price, University of New South Wales; Franz Harpain, Vancouver Community College; and Jim Denton, Amherst College. MIU began a Master of Science program in mathematics this year. It is a two year program with thesis.

Central College: Professor Reza Hamedí spent the summer working on some problems concerning routing and interconnection in very large scaled integrated circuits (VLSI) using complementary metal oxide semiconductor technology, as a possible topic for his Ph.D. thesis.

Professor Thomas Iverson participated in the Summer Faculty Research Program sponsored by the American Society for Engineering Education. He was a fellow at the Naval Underwater Systems Center in New London, CT, for 10 weeks. His work entailed an analysis and comparison of beam patterns generated by a parabolic equation model and a vertical virtual array experiment. (A computer simulation model).

Professor Donald Meyer taught two courses for the Department of Statistics at the University of Iowa, during the 1987 summer session.

Mr. Steve Ratering joined the Mathematics & Computer Science Department this fall to replace Professor Thomas Whaley who moved to Lexington, VA, to teach at Washington and Lee University. Mr. Ratering completed a Master's degree in Computer and Information Science from the University of Minnesota this summer. The title of his project was "A Low Level Image Segmentation Production System".

Last May, Reza Hamedí was promoted from the rank of Instructor to Assistant Professor and Professor Agnes Andreassian received an Outstanding Faculty Performance Award in the category of Professional Growth and Development.

Professors Agnes Andreassian, David Ewing, and Leland Graber participated in the Meredith Communication Arts summer workshop, June 1 through June 19. The main objective of the workshop was to help teachers make writing, speaking, and reading assignments in all their courses, with the premise that all teachers are language teachers.

Southeastern Community College: Professor Eloise Olson reports an interest in robotics. She has an equipment order for a new robot with robot manipulators.

University of Northern Iowa: David R. Duncan is on the Advisory Board for the University of Chicago - School of Mathematics Project - Secondary component. The project is constructing curricular materials for grades 7-12 and the Board oversees the project.

Michael H. Millar attended the XII International Congress of the Caribbean Studies Association in Belize City, Belize May 27-29, 1987. The theme of the conference was The Challenge of Change: Leadership in the Caribbean. He also attended the VII Inter-American Conference on Mathematics Education in Santo Domingo, The Dominican Republic, July 12-16, 1987. There he presented a paper on the topic "Geometric Transformations: A Powerful Tool for Understanding and Applying School Geometry."

University of Northern Iowa (Cont'd): Hyo Chul Myung attended the Daewoo Mathematics Workshop July 13-17, 1987 and also the Mathematics Colloquium at Mathematics Research center. Korea Institute of Technology July of 1987.
Edward C. Rathmell was on the K-4 working group for the NCTM Commission on Standards for School Mathematics.
Bonnie H. Litwiller was on the Board of Directors for the NCTM.
Mahmoud Pegah is on leave to Michigan State University to pursue a Ph.D. in computer science.
Jack D. Wilkinson is on leave to the Peoples Republic of China and Japan visiting education insitutions.
Mary Ann Wayne is a new instructor of computer science.

Iowa State University, Mathematics Department: Richard Miller is a Program Director for AFOSR in Washington, D.C.
Jonathan Smith will be at the Institute for Mathematics & its Applications in Minnesota during Spring, 1988.

Faculty Improvement Leaves were granted to:
Roger Maddux to work on his book on Universal Algebras;
Karen Ames, who is at the Center for Applied Mathematics at Cornell University for the 1987-88 academic year; and
Gary Lieberman, who is at the Centre for Mathematical Analysis at the Australian National University during Fall, 1987.

Faculty on Leave without pay are:
Tsu Fen Chen, at the University of Texas at Arlington, 1987-88.
Don Pigozzi, at the University of Illinois at Chicago, Fall 1987

George Peglar retired after 35 years of service. He is now living in San Francisco, CA.

Cliff Bergman, Wolfgang Kliemann, and Jonathan Smith were promoted to Associate Professor.

University of Iowa, Department of Statistics: Joe Sedransk is the Coordinating and Applications Editor for the Journal of the American Statistical Association and is a member of the American Statistical Association Publicatons Committee.

Richard Dykstra is on Developmental leave at Cornell University in Ithaca, New York. Richard was elected Fellow of the American Statistical Association at the meetings in San Francisco in August. (Congratulations from the editor.)

Our visitors include Tim Wright, University of Missouri at Rolla; Bridge Zimmerman a recent graduate of Iowa State University; Tom Ryan; Aryeh Reiter, Hebrew University of Jerusalem.

University of Iowa (Statistics) cont'd: Richard Dykstra, Tim Robertson, and Tim Wright have completed their book entitled Statistical inference Under Inequality Constraints to be published by John Wiley and Sons.

Stuart Klugman has received a Huebner Foundation Grant to prepare a monograph on Bayesian credibility. Stuart is on leave during the first semester. He is Visiting Professor of Actuarial Science at Drake Rniversity.

Robert V. Hogg is now President-Elect of the American Statistical Association and will become President on January 1, 1988. (Again congratulations from the editor.)

The University of Iowa has started an innovative MS program in Quality Management and Productivity. It is sponsored by three departments: the Department of Statistics and Actuarial Science in the College of Liberal Arts, the Department of Industrial and Management Engineering in the College of Engineering, and the Department of Management Sciences in the College of Business Administration. This program involves three programs that are intimately connected with quality and productivity. Efforts are being made to attract outstanding engineering, business, and mathematics students. Graduate Assistantships are available.

For further information and for application forms to this program contact:

Professor Robert V. Hogg (Chair)
Program in Quality Management and Productivity
The University of Iowa
Iowa City, Iowa 52242

Some scheduled talks in the Colloquium series include:

- Nov. 5, Ron Gallant, North Carolina State (Joint with Economics)
"Seminonparametric Estimation of Conditionally Constrained Heterogeneous Processes";
- Nov. 13, Kevin Little, Joiner Associates, Madison;
- Nov. 19, Tim Wright, University of Missouri at Rolla and University of Iowa;
- Dec. 3, Russ Lenth, University of Iowa; and
- Dec. 10, Robert Groves, University of Michigan.

Coming Attractions for Spring 1988 are:

- March 31 Paul Holland, ETS, Princeton (Joint with Iowa Testing Program)
- April 7 Dennis Cook, University of Minnesota.

University of Iowa, Mathematics Department: Visitors for the year are: Oguz Durumeric, Differential Geometry; Hang Chin Lai, Functional Analysis; Richard Litherland, Topology and Chi-yi Ying, Algebra & Logic.

New faculty are: Zoltan Magayar, Operator Theory; David Mandersheid, Representation Theory; George Paulik, Partial Differential Equations; Ezio Venturino, Numerical Analysis.

Professors William Arveson, David Vogan, and William Ziemer will each spend one week in residence at Iowa as part of our Distinguished Lecturer Series.

Thomas Branson has been granted a three-year Faculty Scholar Award. He is spending 1987-88 at the University of Copenhagen. Keith Stroyan has been awarded a one-semester Development Assignment for Spring 1988. Ken Atkinson will spend Spring 88 and Fall 88 in Australia. Walter Seaman was the recipient of a James Van Allen Natural Science Fellowship for the summer of 1987. Paul Curto and Richard Randell have been promoted to the rank of Professor.

Iowa State University, Statistics: William Q. Meeker, Jr., is serving a three-year term as editor of Technometrics. William J. Kennedy continues as editor of The American Statistician. Nine faculty members are associate editors on seven different journals.

The preprint series initiated by the Statistical Laboratory in 1986 now contains 60 titles. The next list with abstracts (beginning with #87-1) is scheduled for distribution early in the 1987 fall semester.

A Handbook of Introductory Statistical Methods by C. Philip Cox and Measurement Error Models by Wayne A. Fuller have been published by John Wiley & Sons (New York) this year.

The first issue of Stat Lab News, a newsletter for alumni and friends of the Statistical Laboratory and Department of Statistics, was published in August 1987. It mentions the recent contributions of fellowship money received from the Corning Glass Company and Dow Chemical U.S.A. The newsletter also profiles faculty members Paul Hinz and Harold Baker and features a semitechnical article on "Statistics for Spatial Data" by Noel Cressie and a report on new developments in industrial statistics at ISU.

Under ASA Continuing Education Department sponsorship, a two-day short course on "Measurement Error Models" was presented at the 1987 joint statistical meetings in San Francisco on August 15-16. Instructors were Wayne A. Fuller, Yasuo Amemiya, Stephen Miller (who had joined the Bureau of Labor Statistics upon completing his Ph.D. requirements), and Dan Schnell. On August 18, Noel Cressie presented a two-hour tutorial under the same sponsorship: "Spatial Prediction and Kriging."

Iowa State University, Statistics Cont'd: Krishna Athreya was on faculty improvement leave for the 1986-87 academic year to engage in research on limit theorems in probability theory and statistics. He spent the fall semester in India, primarily at the Indian Statistical Institute Bangalore Centre. In January he went to Berkeley, California, for a semester with partial support from the Mathematical Sciences Research Institute through National Science Foundation funding. His summer included traveling and lecturing in several western European countries.

Fetih Yildirim, associate professor and chair, Department of Statistics, Middle East Technical University, Ankara, Turkey, here as a visiting senior Fulbright research scholar, extended his stay until July 1987 and served as visiting associate professor in the Department of Statistics last spring semester.

Franz Hering, professor of statistics at the University of Dortmund, West Germany, visited the Statistical Laboratory and Department of Statistics for the first three weeks of September. His visit stems from previous contacts between Dortmund and ISU initiated by Noel Cressie and Paul Hinz. There is a common interest in the two statistics departments in establishing an exchange relationship.

George E. Battese, senior lecturer in the Department of Econometrics, University of New England, Australia, continues as visiting professor in the Survey Section of the Statistical Laboratory and the Department of Statistics. He came here last January for the year.

W. Robert Stephenson was selected as the Outstanding Academic Advisor in the College of Sciences and Humanities for 1986-87. He received the award on March 18.

William J. Kennedy received a Faculty Citation at the annual Honors and Awards Convocation held by the Alumni Association and Iowa State University on June 6. His citation reads in part as follows: It is for his work in statistical computing that Dr. Kennedy is best known, particularly his research in numerical problems in computing ...

Dan Schnell was appointed as postdoctoral research associate in the Survey Section for summer 1987, following completion of his degree here. He had held a predoctoral research associateship during the academic year.

Looking at the 1987-88 academic year: John Eltinge has accepted the position of assistant professor in the Survey Section left vacant by Ronaldo Iachan. He has an appointment as temporary instructor until all requirements for his Ph.D. in statistics are completed at Iowa State.

Kenneth J. Koehler was promoted to full professor and Yasuo Amemiya to associate professor effective July 1, 1987.

- Iowa State University, Statistics Cont'd:** Frederick Lorenz is on faculty improvement leave for the academic year. He has established visiting scholar residence in the department of Sociology, Stanford University, to work with W. Richard Scott and other organizational theory specialists on the study of human service organizations.
- Loras College:** Don Marxen was appointed chairman effective last August 15 for a three year term. He is succeeding John Friedell who completed his second term as chairman.

Sister Kathleen Sullivan, who was on leave 1985-86 completed her M.S. in Computer Science at the University of Iowa. She was reassigned by her religious order to Seattle University. Marvin C. Pappenfuss, who spent the year at the University of Alaska at Fairbanks while on sabbatical, returned to Loras in August. He enjoyed both the sabbatical and Alaska. Mr. Dennis Risher was granted tenure effective August 15, 1987. Ms. Kathryn Radloff, who was at Loras for two years, resigned to pursue a Ph.D. program at the University of Iowa.

A new course entitled "Mathematics in the Western Culture" has been approved following several years of development. It is a basic liberal arts course. The department has initiated a speakers bureau which will be announced soon. It is intended for area high school students groups or teacher groups. The Tri-College Mathematics tournament for high school students is scheduled for April 23. Sister Harriet Holles will be chairperson. The Outstanding Senior Mathematics Award went to Mary Muehlenbien who is pursuing graduate studies at Iowa University. The Outstanding Computer Science Award went to Seth White.

- Iowa State University, Computer Science:** Recently approved by the Iowa Board of Regents, an off-campus program a master of computing degree, is specifically targeted for industrial practitioners and small college computer science teachers. Individuals may selectively enroll in courses of interest or may follow a program of study which leads to a terminal Master of Computing Degree. Two modes of course delivery are being utilized, depending on the size of the off-campus audience. Courses with a sufficient number of off-campus students will be offered live via WOI/TV's uplink satellite facilities. Courses with smaller off-campus enrollments will be videotaped and tapes mailed to participating sites. Several courses have already been televised under this program: Computer Science 512, a software engineering course, in Spring, 1986 and Computer Science 541, a programming languages course, in Spring 1987. Current plans are to offer Computer Science 571, a course dealing with the principles of artificial intelligence, in Spring Semester, 1988. Individuals, colleges, and industrial organizations who are interested in this program should contact the Department of Computer Science or the Office of Continuing Education for more details.

Iowa State University, Computer Science Cont'd: "For outstanding work in getting the EAB Newsletter started and serving as its editor," Dr. H. C. Brearley was awarded a Certificate of Appreciation by the IEEE Computer Society at their meeting in San Francisco in the spring of 1987.

Professor N. G. DeBruijn of Eindhoven University of Technology, The Netherlands, presented a colloquium on "AUTOMATH, a Language for Mathematics." The goal of the AUTOMATH system is to express mathematical theories in such a complete and detailed form that a computer is able to verify its correctness. Professor De Bruijn visited Iowa State as a Mid-America State Universities Association Distinguished Foreign Scholar.

Graduate Study in Iowa:

The following is a rough estimate of the numbers at universities in Iowa:

	UI Math	UI Stat	ISU MATH	ISU Stat	UNI	Total
Grad Students	119	99*	102**	121	12	452
Assistants	90	32	67	61	4	254

* includes 59 Acturial students.

** includes 15 Masters of School Mathematics students.

As you can see, the graduate programs are healthy and there is a lot of opportunity for graduate study, and for financial aid through assistantships.

Math Club Survey:

I asked in my survey if there was a math club on campus. Of the 21 responses, 3 noted chapters of KME and one π ME. The statistics departments have a statistics club and one school had a required Jr.-Sr. Seminar which serves as a math club. One college reported a Putnam practice group as a substitute for a math club. The MAA has approved the formation of student chapters. I urge all schools to consider the establishment of math clubs even though they may not want to formalize it as a student chapter. It think it is important to give students the chance to meet informally with each other and faculty to foster a colleague relationship that is not always possible in the classroom setting.

Bachelor degree recipients in 1986-87.

The 21 responding schools indicate about 350 mathematics majors, 300 computer science majors, with about 80 of these having double majors. I'd estimate about 40 of the double majors are counted twice above, once as math majors and once as C.S. majors. (These do not include the C.S. departments at UI & ISU.) The ratio between math and C.S. majors is about as expected. The number of C.S. majors would be substantially increased if the enrollment at U.I. and I.S.U. statistics were available. About $\frac{1}{2}$ the math major total is at those two universities. We need to do some PR. Mathematics majors get good jobs and have fun doing mathematics! At the graduate level, it probably turns out that an American student can name the area of the country where they want to live and get a decent job there. Encourage your sophomores to think about graduate school in Mathematics.

Calculus Survey:

I asked for people to respond to questions about the texts, use of calculator, etc. The results are somewhat interesting. The 21 responses showed that 14 different texts being used. This surprised me a little but makes authors happy that there is room for a variety of texts. The class sizes varied from 9 to 50, mostly they are in the 15-25 range. Almost all classes encouraged the use of calculators.

MAA Statement on the Holmes and Carnegie Reports on Teacher Preparation

Recommendation 1. The undergraduate curriculum needs to be revised so that future teachers can study the subjects they will teach with instructors who model fine teaching and who understand the pedagogy of their material (from the Holmes Report).

Recommendation 2. Academic course requirements and courses need to be organized to show the structure, scope, and significance of the discipline (from the Holmes Report).

Recommendation 3. Coherent programs in professional education must be devised for prospective teachers including, but not limited to, replacement of generic undergraduate "methods" courses with subject matter-oriented studies of teaching and learning (from the Holmes Report).

Recommendation 4. A national standards and certification board for teachers should be established (from the Carnegie Report).

Recommendation 5. Teachers need to be given more say on how to accomplish state and local educational goals (from the Carnegie Report).

Recommendation 6. Prospective teachers of mathematics in grades 9-12 should major in a mathematical science with a program of study that follows the "Recommendations on the Mathematical Preparation of Teachers," (MAA Notes No. 2, 1983).

Recommendation 7. Prospective teachers in grades K-8 should major in an academic discipline and should include in their programs of study the mathematics courses recommended in "Recommendations on the Mathematical Preparation of Teachers (MAA Notes No. 2, 1983) for teachers of elementary school mathematics and for teachers of middle school and junior high school mathematics, respectively.

MAA Annual Meeting

One of the important components of Atlanta is the very special offering from Hewlett-Packard, whereby members who attend the banquet have the option of purchasing for \$60 a new, enhanced model of the HP 28C calculator (list price \$235), a model specially encribed '100 Years of American Mathematics'. Those who really want to join in the spirit will start off the year with our Centennial Banquet Package: \$30 for dinner, \$60 for a calculator, and a \$10 contribution to support the '100 Years' project. "Once in a century, spend \$100 to help both yourself and your community's year-long celebration." Of course, we plan to keep right on going the next year, when it will be the MAA's 75th birthday. (See next page.)


YEARS OF AMERICAN MATHEMATICS
YEARS OF AMERICAN MATHEMATICS

A Year-long Celebration of a Century of Mathematical Achievement
 A Year-long Preview of the Future with Mathematics

1988 Events

- January 6-9** **Banquet: '100 Years of American Mathematics'**
Special Session: 'Forces for Change in Mathematics Education' -
Joint Mathematics Meetings, Atlanta, GA
- February 11-15 'American Mathematics Entering its Second Century' - American Association
 for the Advancement of Science Annual Meeting, Boston, MA
- April 24-30 National Mathematics Awareness Week - JPBM Annual Event
- April 24-27 'A Century of American Mathematics' - National Academy of Sciences Annual
 Meeting, Washington, DC
- April 28 or 29 'The Impact of Mathematics' - Board on Mathematical Sciences Event,
 Washington, DC
- May 1988 'Mathematics Education: Wellspring of U.S. Industrial Strength' -
 Mathematical Sciences Education Board Symposium, Irvine, CA
- May 29-June 4 'The Legacy of John von Neumann' - Hofstra/AMS/SIAM International
 Symposium, Hempstead, NY
- July 11-15 'Applied Mathematics: Foundations for Science & Technology' - SIAM Annual
 Meeting, Minneapolis, MN
- August 8-12** **Mathematics into the 21st Century - AMS Centennial Celebration,**
Providence, RI
- October 1988 'The Future of Mathematics Education in the U.S.' - MSEB/BMS Report to the
 Nation

For a detailed calendar of events, write: JPBM - '100 Years', 1529 18th St., NW, Washington, DC, 20036, and watch for details in upcoming mathematics' society publications or call Kirsten Sampson at the JPBM office: (202) 387-5200.

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