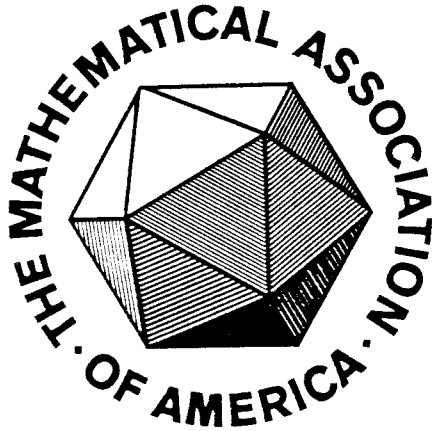


# IOWA SECTION MAA



## NEWSLETTER

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VOLUME VI No.1

Edited by Luz M. DeAlba

October 1989

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The MAA is celebrating its 75th anniversary in Columbus, Ohio, August 8-11 1990. There will be a number of special events, including a special dinner where the speaker will be President David P. Roselle of the University of Kentucky, at one time secretary of the Association. The meeting will open with a ceremony at 8:30 on Wednesday, August 8. This ceremony will begin with a procession of section banners carried onto the stage by representatives of the sections.

Calvin Van Niewaal has been asked to designate a member of the Iowa section to carry our banner to the stage for this ceremony. This individual should be someone who represents our section (and plans to be in Columbus!). If you would like to nominate someone (It is acceptable to nominate yourself) to serve as our bearer send his/her name to Calvin Van Niewaal, Coe College, 1220 1st Ave NE, Cedar Rapids, IA, 52402.

### 1989 - 1990 Officers

Chairman: Calvin Van Niewaal

Governor: Anne K. Steiner

Chairman Elect: Elgin Johnston

Editor: Luz M. DeAlba

Secretary-Treasurer: David Oakland

The annual Iowa Mathematics Meeting will be held April 6 - 7, 1990, at Iowa State University in Ames. The new microcomputer lab, with 44 Macintosh SE 30's, housed in Carver Hall will be open on these dates. The invited MAA speaker will be Professor Alan Tucker from the Applied Mathematics Department at SUNY in Stony Brook. A call for papers will be mailed in January with abstracts due by the end of February.

## News

### Central College

**Thomas Iverson** returned after a year's leave to Moi University, Eldoret, Kenya, where he taught a variety of courses in Mathematics and Computer Science. He had a very interesting year with many challenges such as teaching a section of 150 students in a programming course with only four personal computers available for the class.

**Agnes Andreassian** was promoted to Full Professor.

**Steve Ratering** is on a two year leave of absence to complete a Ph.D. degree in Computer Science at the University of Minnesota.

**Allen Hibbard** has been appointed as Assistant Professor of Mathematics. He completed his Ph.D. at the University of Notre Dame in the summer 1989. He has six years of high school teaching experience in Minnesota public schools.

**Gordon Graber** has been appointed as an instructor. He has been a high school Mathematics instructor and programmer for BCS Computer Systems in Pella. His primary responsibility will be instructing and supervising in the Introductory Computing sections.

A Computer Club was organized by several students during the spring of 1989. These students desired to establish teams for programming competitions, to create a public domain software library, to serve as a sounding board for microcomputer users, and to share experience with the newly acquired VAX computer system. This fall the club will serve as host of several colleges and universities competing in the regional ACM Programming Contest.

Last year Central College graduated 20 students majoring in Mathematics and/or Computer Science.

### Clarke College

**Carol Spiegel** and **Sister James Marie Gross** attended the Calculus: History, Teaching, and Technology Workshop at St. Mary's, Notre Dame.

In May 29 the graduating class was composed of 5 Mathematics majors, 6 double Mathematics and Computer Science majors, 14 Computer Science majors, and 4 double Computer Science and field-other-then-Mathematics majors.

### Coe College

**Calvin Van Niewaal** has been promoted to Associate Professor of Mathematics and Computer Science. In addition to his teaching duties he is serving as Director of Academic Computing.

**Charles Lindsay** is on sabbatical leave for the fall semester. Included in his plans for the semester is a trip to Japan and several European Countries.

**Debbie Stackis** has joined the department as Assistant Professor of Computer Science. Most recently Debbie was an Engineering Group leader for Motorola Inc. She did her undergraduate work at Loras College and her graduate studies at the Illinois Institute of Technology.

**James Cottingham** has been appointed to the faculty as Assistant Professor of Mathematics and Physics. He recently completed a Ph. D. in

Physics at the University of Iowa. His masters degrees from the University of Chicago are in Mathematics and Physics.

The Mathematics/Computer Science faculties from Coe and Cornell are holding a faculty seminar again this year. Michael Barnsley's Fractals Everywhere is being used as reference.

## Drake University

**Bernadette Baker** is on sabbatical leave this year. She is working on a Ph. D. at Iowa State University.

**Luz M. DeAlba** attended the NSF funded workshop "Matrix Theory for Applications", which took place from July 17 to August 4, 1989 in Laramie, Wyoming.

**H.K. Krishnapriyan** rejoins the Mathematics and Computer Science as visiting Assistant Professor for the 1989-90 academic year.

The student team of **John Seal, Lawrence Kidder** and **William Humphrey** was recognized as one of six outstanding teams in the Mathematical Contest in Modeling administered last February by the Consortium for Mathematics and its Applications.

**Milan Randic'** received the 1988 Governor's Science Medal for Science Achievement. Professor Randic' has made major breakthroughs and provided extensive leadership in the area of Mathematical Modeling of molecular structures for the purpose of structure-property studies. He is listed in Who's Who in Technology Today.

## Grinnell College

**Arnold Adelberg** is on leave this academic year at the University of Chicago.

**Eugene Herman** has been appointed editor of the "Computer Corner" of the *The College Mathematics Journal*, 1989-1994. He has been appointed Chair of the MAA Committee on Computers in Mathematics Education, 1990-1993. This past summer he gave a three-day Chautauqua course for college science faculty on "Applied Linear Algebra and Computers" in San Francisco.

**Emily Moore** received tenure this past year and has been promoted to Associate Professor. She is completing work on software to aid in teaching Calculus. This software is written on top of the commercial package MATLAB. The menu-driven routines allow easy graphing of functions of one and two variables, of functions of polar coordinates, and calculations and graphical illustration of numerical methods for solving equations and computing definite integrals. She would be happy to share this software with people who have MATLAB.

**Tom Moore** received tenure this past year and has been promoted to Associate Professor. He and Rosemary Roberts (of Bowdoin College, Maine) organized the third annual meeting of SLAW (Statistics in the Liberal Arts Workshop) this summer at Grinnell College.

**Anita Solow** is currently involved in an NSF-funded project to reform Calculus. She attended a workshop this past summer at St. Olaf college on "Computer Algebra Systems as Teaching and Learning Tools," and ran a workshop at Grinnell on Calculus Reform. She is currently teaching a course entitled "Feminist History and Critiques of Science."

**Henry Walker** spent last year on a sabbatical leave as Senior Lecturer in the Department of Computer Science at the University of Texas at Austin. He is the author of a new book, Computer Science 2: Principles of Software Engineering, Data Types, and Algorithms,

published by Scott-Foresman, 1989. He has been appointed Chair for workshops and Tutorials for 1991 Computer Science Consortium. He has the following three talks available for the MAA Lecturer Program:

1. Introduction to Program Verification (Mathematical Proof in Programming).
2. What can computer do? (An Introduction to Complexity Theory).
3. A Classification of Data Types (joint work-in-progress with Nell Dale, UT-Austin).

The departmental seminar this year is based on the book "The Equivalence of some Combinatorial Matching Problems" by Philip F. Reichmeider.

Last years graduates: 26 Mathematics majors (there are no separate majors in Computer Science or Statistics).

Grinnell College has a Student Chapter of MAA, A Mathematics Journal Club, and a Putnam Problem-Solving Group.

### University of Iowa (Mathematics)

**Richard Baker** is at the University of Iowa on leave from the University of California at Berkeley. He works on Operator Theory.

**Kathy O'Hara** is on leave from the IMA in Minneapolis and works in Combinatorics.

**Keith Stroyan** has been teaching an Accelerated Calculus course as part of his work under an NSF Calculus Curriculum Development Grant. The course presents Calculus as the language of science, using computers and scientific software as equipment in the lab portion of the course.

The Student Chapter of the MAA founded last spring has resumed activities this fall with 15 members. The club is in the process of becoming an official student organization on campus, which gives it a telephone, an office, and funding. Senior **Tim Roberts** is the new chairperson.

### University of Iowa (Statistics and Actuarial Science)

**Richard Dykstra** has accepted the position of Chairman of the Department of Statistics and Actuarial Science.

**Marianthi Markatou** attended the NSF sponsored workshop "Robustness, Diagnostics and Statistical Computing" held at the Institute for Mathematics at the University of Minnesota this summer. She also participated, during the summer, in a Washington D.C. workshop entitled "Women in Science" organized by the NSF and the Office of Naval Research. She helped organize a joint seminar series between the Statistics Department and the Economics Department at the University of Iowa.

**Hannes Ledolter** attended the NSF sponsored workshop "Robustness, Diagnostics and Statistical Computing" held at the Institute for Mathematics at the University of Minnesota this summer. He was Program Chair for the Economics Section at the National ASA-IMS meeting in Washington D.C. in August.

**Jim Calvin** was Program Chair for the Statistical Education Section at the National ASA-IMS meeting in Washington D.C. in August. He is on Developmental leave visiting the Department of Statistics at Texas A & M University.

**Bob Hogg** was the M.C. at the session for awards and the presidential address during the annual ASA meetings in Washington D.C.

Professor Hogg conducted the salary survey for the Department of Statistics in the USA for the academic year 1988-89, and will do this in 1989-90 also. Hogg has proposed a major workshop on Statistical Education to be held in Iowa City June 18-20, 1990, hopefully with NSF support.

**Joe Sedransk** is on leave visiting the National Center for Health Sciences in Hyattsville, Maryland.

**Jim Sconing** is on Developmental leave visiting the Department of Mathematics and Statistics, Memorial University of Newfoundland, St. John's, Newfoundland.

**Mark Conaway** is on Developmental leave visiting the Biostatistics Department of the Harvard Medical School.

**Russ Lenth** is on Developmental leave this semester, he is housed at the Oakdale Campus of the University of Iowa.

**Louis Rizzo** from the University of Chicago has joined the Department.

**Jacques Carriere** from the University of Wisconsin has joined the Department.

Degrees granted: Ph.D. Degrees: 2 in Statistics. MS Degrees: 11 in Statistics, 20 in Actuarial Science, 4 in Quality Management and Productivity. BS Degrees: 4 in Statistics, 15 in Actuarial Science.

Coming speakers for the seminar series: Harry Roberts, Nov. 2; David Ruppert, Jan 18; Persi Diaconis, in November.

### **Iowa State University (Department of Statistics)**

**Kathleen Shelley**, Computer Specialist in the Department, was honored by Zenith Data Systems as a first-place winner in its Masters of Innovation Contest. She placed first in the business category of the national competition by entering some Information Management System Software developed at Iowa State to support the Iowa Small Business Development Centers and their administrative office. Shelley won a \$5,000 computer hardware and software package for her personal use and a \$5,000 package for the Statistical Numerical Analysis Section. The award presentation took place at a special banquet held by Zenith in Chicago, April 1989.

**Oscar Kempthorne** completed phased retirement on June 30, 1989, after 42 years at Iowa State; he was appointed Emeritus Distinguished Professor of Sciences and Humanities effective July 1, 1989. Professor Kempthorne was honored at a retirement reception on June 22 and a special conference, entitled *From Observation to inference* held at Iowa State University the following day.

**William K. Meeker** was selected as the 1988 winner of the Wilcoxon Prize for the paper he authored "*Limited Failure Population Life Tests: Application to Integrated Circuit Reliability*", published in *Technometrics*. Professor Meeker will serve as the President of the Iowa Chapter of the ASA in 1989-90.

**Martin Grondona** and **Nuwan Nanayakkara** (Graduate Students) won first and second prize awards, respectively, in a competition for Best Student Statistics Paper Presentation sponsored by the Iowa chapter of the ASA last spring.

**Carol Gotway**, **Martin Grondona**, **Nuwan Nanayakkara**, and **Stephen Rathbun** formed the ISU team who won the 1989 Data Analysis Competition sponsored by the ASA chapter, and open to teams of graduate students in Iowa.

Graduate College Teaching Excellence Awards were received by **Craig A. Beam** and **Nuwan Nanayakkara** at the ISU commencement in May

and by **Douglas M. Andrews** in the August 1989 commencement. These awards recognize their outstanding contributions in the teaching of undergraduate students while working toward a degree. A Graduate College Research Excellence Award was given to **Martin Grondona** in August, recognizing research accomplishments demonstrated by completion of an outstanding dissertation.

An ISU Alumnus' contribution to the Department of Statistics made possible the first Dan Mowrey Consulting Awards, given to **Mark Bryan** and **Peter Peterka** last spring, recognizing outstanding contributions in statistical consulting while working towards a graduate degree.

**Edward Pollack** was on leave from December 17, 1988, through January 20, 1989 to serve as the United Nations Development Program Expert founded by the Food and Agriculture Organization. The consultancy assignment was carried out at the Indian Agricultural Statistics Research Institute, Delhi, India, except for a two-day period at FAO headquarters.

**Glen Meeden** was on leave from the period January 15 to July 14, 1989 to serve as a research fellow sponsored by the ASA. He visited the Bureau of Labor Statistics, Washington, D.C., to take part in an on-site research program to improve the quality of labor statistics. Professor Meeden left ISU at the end of the summer 1989 to begin his duties at the University of Minnesota.

**Noel Cressie** was elected fellow of the Institute of Mathematical Statistics in the summer 1988. He was chairman and organizer of the day, Robustness in the Presence of Unequal Scale at the 1989 IMA Summer Program on Robustness, Diagnostics, Computing and Graphics, Minneapolis, Minnesota. He presented the invited paper, "Analysis, modeling, inference and design for spatial data", at the Gordon Research Conference, New Hampton, New Hampshire in August 1989. He has been elected to ASA for 1990 secretary-treasurer of the Statistical Computing Section.

**W. Robert Stephenson** was promoted from Assistant Professor to Associate Professor. He is also ASA chair-elect for the the section on Statistical Education for 1990.

**Stephen B. Vardeman**, is chair elect of the ASA Section on Physical and Engineering Sciences for 1990.

In the fall semester 1989 the Statistics Department at Iowa State University has 126 graduate students enrolled, 84 men and 42 women. The enrollment in the BS program in Statistics is about 45 students, During the 1988-89 fiscal year 17 MS and 9 Ph.D. degrees were awarded in Statistics. There were 12 BS degrees awarded in Statistics and one in Biometry. At the summer graduation there were 12 additional MS degrees, 8 Ph.D. degrees, and one BS degree awarded in Statistics.

Two graduate student organizations. Mu Sigma Rho and the Iowa Stat-ers are quite active. On April 26, Professor J. Stuart Hunter, Professor Emeritus, School of Engineering and Applied Statistics, Princeton University spoke on the topic "Statistics: The Science of Empiricism" at the annual banquet of the Iowa Alpha Chapter of Mu Sigma Rho. The Iowa Stat-ers, which is an organization of ISU graduate students in Statistics, holds regularly scheduled seminars and a number of social activities during the year. The scheduled speakers for this year are:

Oct. 2	Tom Moore, Grinnell College	Statistics at Liberal arts Colleges
9	Norm Heitkamp, Shell	Statistics in Industry
23	Kathy Shelley	Statistical Presentation Graphics Process Engineers

Nov. 6	Subhash Lele, Johns Hopkins	Biostatistics
13	David Cox, ISU	Teaching Statistical Methods to Graduate Students in Colleges of Agriculture
27	ASA Videotape	Statistical Science:150 Years of Progress
Dec. 4	Noel Cressie	Spatial Statistics and the World.

The Statistical Laboratory at Iowa State University holds a weekly seminar, generally on Wednesdays, 4:10 PM in room 319 Snedecor Hall. Speakers are from Iowa State University, as well as from other colleges and universities, as well as occasional representatives from industry. Seminars are given on a wide variety of topics in the field of Statistics. Professor **Edward Pollak** is the chairman of the Seminar Committee for the 1989-90 academic year.

The undergraduate Statistics Club is also active. The fall plans include presentations by students who have been statistical interns and a talk by a faculty member from the University of Iowa about the graduate program in biostatistics in Iowa City.

### **Loras College**

**Donald Marxen** participated in the Chaotic Workshop in Boulder this summer.

**Sister Marlene Pinzka** joined the department this year from St. Theresa's in Winona, MN.

**Duane Kouba** resigned from the department to join the faculty at the University of California at Davis.

**Marvin Papenfuss** was a visiting faculty member at the University of Alaska during the summer months.

**Dennis Risher** is on sabbatical for 1989-1990 for continued studies at the University of Iowa.

The Department instituted a cooperative education course for Computer Science majors. Both students and faculty involved are excited about the learning experience of students who have been involved in cooperative education. Additional employment as well as learning opportunities have resulted from this program.

Ada is being used in the Software Engineering class for the first time. A reasonably full professional development environment is being run on the PS/2. Ada, together with the accompanying environment, allows the use of sound Software Engineering practices on projects.

The five lectures on "CHAOS - An Emerging Science" broadcast nationwide by satellite from the University of Maryland was available at Loras on Oct. 3.

During the past year four faculty members and seven students attended the Pi Mu Epsilon meeting at ST, Norbert's in Green Bay WS.

Four Loras students presented papers at the Iowa Section Meeting last spring at Coe College. Three of them received recognition for their presentations.

The graduating class of 1989 included 3 Mathematics majors and 8 Computer Science majors.

## Luther College

Luther College is participating in a new three-year Science and Mathematics program of the PEW Charitable Trusts. Six college clusters across the nation were organized through the Trust Grant. Luther is in a cluster consisting of Albion, Augustana, Goshen, and Wheaton Colleges, centered around Northwestern University. During the summer of 1989 five Luther Math/Science majors along with students from the foregoing colleges participated in an undergraduate research experience. Our statistician **Gordon Brill** was one of the instructors in that program.

**Steve Schlicker** of the Mathematics Faculty received a grant to continue his research into the symplectic, orthogonal and linear algebraic K groups of the ring  $Z/p^2Z$ . His paper "Young Diagrammatic Methods in the Homology of Groups" will be published in the Journal of Pure and Applied Algebra. He also attended the MAA conference on "The Mathematics of Computer Graphics".

**Joyce Becker** spoke at two sessions of the ICTM State Convention in February, and she continued as a member of the MAA Contest Committee.

**Gordon Brill** and **Don Pilgrim** continued their work as writers for the American College Testing Service. Pilgrim attended the MAA summer meeting in Boulder, and during that time took the MAA minicourse "Group Theory through Art".

**George Trytten** has been appointed to be head of the department.

In May Luther graduated 29 Mathematics majors, 3 of whom were elected to Phi Beta Kappa. The Mathematics Club is in its second year, with about 20 students actively participating.

## Maharishi International University

**Eric Hart** has an NSF grant for Teacher Enhancement in Discrete Mathematics.

**Phil Boyland** spent the 1988-1989 year at MSRI in Berkeley as a Post-Doctoral Research Fellow. In December, 1988, he was a Short-term Visitor at the Institute for Advanced Study in Princeton. This summer he presented a talk on Dynamical Systems at Oberwolfach in Germany and gave a lecture series at the Braid Type Workshop at the Nonlinear Systems Laboratory at the Mathematical Institute of the University of Warwick in England. He is currently on leave at Northwestern University.

**Anne Dow** taught at MIU-Norway in the spring.

**Cathy Gorini** attended the MAA summer course on Computer Graphics at Carleton College.

The MIU team of **David Mason**, **Jeffrey Dods**, and **Rich Gabriele** received Honorable Mention in the 1989 Contest in Mathematical Modeling.

MIU graduated one student with a BS and two with an MS in Mathematics, 7 students with BA or BS and 3 with MS in Computer Science.

The student Chapter of the Association got off to an excellent start last year with almost ten members and five seminar meetings including one by Jim Sandefur and one by Charles Jepsen.

## North Iowa Area Community College

**Gerald Ericson** and **Adriana Attleson**, members of the Mathematics department at NIACC, attended the AMATYC Summer Institute at Ricks College in Rexburg, Idaho, from July 31 to August 5. Two courses were taught: Mathematical Modeling and Application of Interactive



Computer Graphics. Ericson and Attleson completed the course on Computer Graphics taught by Greg Foley from Ohio State University and highly recommend it to other Mathematics educators. (Foley has agreed to repeat the course next summer). The facilities and scenery at Ricks College were superb. Participants in the Institute were encouraged to bring their families and planned activities were provided for everyone, including horseback riding at a ranch in the mountains, a white water float trip on the Snake River and a play in the West Yellowstone Theater.

### **University of Northern Iowa**

A "Standards Workshop" was held on September 20-21 to discuss the Curriculum and Evaluation Standards for School Mathematics as developed by NCTM. **Bonnie Litwiller**, **Diane Thiessen** and **Jack Wilkinson** organized the Workshop. **Bonnie Litwiller** is chair of the NCTM Addenda Project which will develop material that will help to understand and achieve the standards.

**Hyo Myung** participated in the International Conference on Algebra in memory of Malcev at the USSR Academy of Science, Novosivirsk, Russia. He presented a paper on Structure of Malcev-Admissible Algebras.

**Timothy Hardy** joined the faculty this fall as an Assistant Professor. He is finishing a Doctorate of Arts in Mathematics at Idaho State University.

A "Teachers Teaching Teachers Summer Institute" (NSF sponsored) was held at UNI last summer with **Jack Wilkinson** serving as one of its directors. One purpose of the institute is to provide for professional growth of teachers of Mathematics using presidential awardees as instructors.

**Diane Thiessen** and **Jack Wilkinson** are directors of the PEMST Program (Preparation of Elementary Mathematics and Science Teachers) The program features early integrated experience with children, specially coordinated student teaching, and continued support for teachers when they graduate.

Graduates: Mathematics 44, Computer Science 53, Master of Arts 10.

Members of the department are experimenting with use of calculators and computers in the Calculus classroom. A portable computer is attached to an overhead projection unit when used. The primary software being used at present is Micro-Calc. **Augusta Schurrer** has outlined a few short units using the computer.

### **Wartburg College**

**Lynn Olson** and **Bill Waltman** attended the NCS/MAA Summer Seminar on "The Mathematics of Computer Graphics" held at Carleton College June 25-30. **Lynn Olson** also attended the annual ACM SIGGRAPH Meeting held in Boston July 31 - August 4 and participated in short course on curve and surface design as well a parallel processing. He has a Fall Term sabbatical to work on computer graphics at the University of Iowa.

**Josef Breutzmann** attended a workshop on "Writing to Learn" held at Bard College July 10-14. He also participated in a two-week short course entitled "Parallel Computing: A Course for Undergraduate Faculty" at Colgate University July 31 - August 11.

**Chris Schmidt** was granted tenure.

**Augie Waltmann** was one of approximately 100 college teachers across the nation to receive an "extraordinary teaching" honor by the American Association of Higher Education for extra effort in helping students succeed against the odds.

The department received a NSF matching grant in support of a project to incorporate parallel processing into the college's Computer Science and Mathematics courses.

Fifteen of the 22 senior mathematics majors are women this year. Graduating Seniors: Mathematics 19, Computer Science or CIS 20, 15 double majors within the department, 9 double majors with second major in another department. 33 total graduates.

Wartburg has an Iowa Delta Chapter of Kappa Mu Epsilon national Mathematics Honor Society (15 new initiates last April) and an organization called "Missing Bytes" for Computer Science students.

Calculators and computer use is encouraged in Mathematics courses such as Calculus and Linear Algebra. Calculators are allowed on Exams for most courses excluding the HP 28 type on examinations in Calculus.

Department of Mathematics and Computer Science  
Drake University  
Des Moines, Iowa 50311

DLLEMU 089 RP 78  
Prof. Luz M. De Alba Cuerra  
Drake University  
Dept. of Mathematics  
Des Moines

IA  
50311