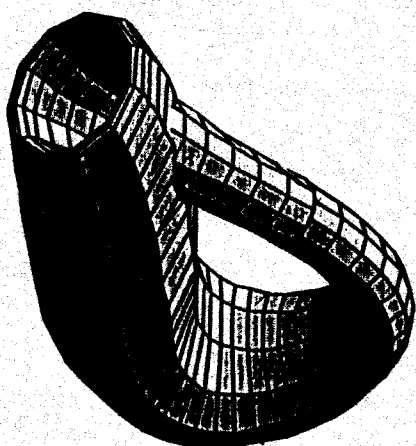


Iowa Section Newsletter



FALL 1996

Iowa Section -- Section Officer List

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Secretary/Treasurer:	Steven Nimmo Dept of Mathematical Sciences Morningside College Sioux City, IA 51106	sdn001@chief.morningside.edu Voice: 712-274-5466 FAX: 712-274-5101
Governor:	Alex Kleiner Dept. of Math and Comp Sci 2507 University Ave Des Moines, IA 50311	ak1041r@acad.drake.edu Voice: 515-271-3041 FAX: 515-271-3977

Annual Meeting of Iowa Section

**Iowa State University
Friday and Saturday
April 11-12, 1997**

1997 Iowa Collegiate Mathematics Competition

The Third Annual Iowa Collegiate Mathematics Competition will be held at Grinnell College, on Saturday, April 5, 1997, at 10 a.m. Stan Wagon, of Macalester College, will provide entertainment for competitors and sponsors at a lunch to follow the competition. The format of the competition will be as in the past -- teams of 3 (undergraduate) students from colleges and universities around Iowa will work together on about 10 problems for 3 hours, with the goal being written solutions of as many problems as possible. Results will be available at the Iowa section meeting.

IMPORTANT NOTE: Iwan Praton, of Grinnell College, is heading up the grading of the exams. He would greatly appreciate a couple of collaborators in this effort. If you are willing to help grade the exams please contact him at pratoni@math.grin.edu or by phone at 515-269-4204.

Governor's Report

Over the past several years the continuance of the summer meeting has been debated and studied by the Association and American Mathematical Society.

The Society decided to terminate its participation in the summer meetings. The Board of the Association believes that the current format of a summer Mathfest serves its members well and has voted to continue to sponsor a national summer meeting. The first such meeting to be conducted by the Association alone will be August 2-4, 1997, in Atlanta Georgia. The continued existence of Mathfest will depend on its ability to be self-supporting.

The United States expects to be the host to the International Mathematics Olympiad in 2001. Members and officers of the Association have taken the lead in developing plans for hosting the contest. At present they are working with the other mathematics organizations to form a new corporation to plan, organize, and raise the funds necessary to host this international event. It is anticipated that a successful event will require several million dollars and the work of many volunteers.

The Association is exploring, with the AMS and the NCTM, the possibility of establishing a joint Office of Minority Participation in Mathematics.

Such an office will address the issue of minority participation in mathematics at all levels and will allow the continuation, coordination and expansion of the various initiatives conducted by the three organizations.

Alex Kleiner

Iowa Section Governor

**CALL FOR NOMINATIONS FOR 1997 IOWA SECTION AWARD
FOR DISTINGUISHED COLLEGE OR UNIVERSITY
TEACHING OF MATHEMATICS**

Nominations for the sixth (1997) Iowa Section Awards for Distinguished College or University Teaching of Mathematics are now being accepted. The Iowa Section Selection Committee will choose one of the nominees for the section award. The awardee will be honored at the Spring 1997 meeting of the section and will be widely recognized and acknowledged within the section. The awardee will also be the official Section candidate for the pool of section awardees from which the national recipients of the MAA Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics will be selected except that one of the national winners may be selected from another source. There will be at most three national awardees, each of whom will be honored at the national MAA meeting in January 1998 and receive a \$1,000 check and a certificate.

Anyone is entitled to make a nomination, but nominations from chairs or MAA representatives in departments of mathematical sciences are specially solicited. For this reason, this call for nominations is sent to both department chairs and MAA representatives so that the responsibility for nominations can be shared between them.

We urge you to submit a nomination if you have someone eligible and qualified in your department in order that your candidate has an opportunity to be considered for the section award and, if so selected, also for the national award. Even if not selected this year, it is an honor for someone to have been nominated, your department will receive recognition for its commitment to excellence in teaching, and the work done in preparing a nomination folder for your candidate is not wasted since your candidate can be nominated again in a future year. Self-nomination is not permitted.

In addition to discussing this memo with your colleagues, preferably at a department meeting, please post it in a prominent place in your department.

Eligibility

- College or university teachers assigned at least half time during the academic year to teaching a mathematical science in a public or private college or university (from two-year college teaching through teaching at the Ph.D. level) in the United States or Canada. Those on approved leave (sabbatical or other) during the academic year in which they are nominated qualify if they fulfilled the requirements in the previous year.
- At least five years teaching experience in a mathematical science.
- Membership in the Mathematical Association of America.

Guidelines for Nomination

The nominees should:

- be widely recognized as extraordinarily successful in their teaching*
- have teaching effectiveness that can be documented
- have had influence in their teaching beyond their own institutions**
- foster curiosity and generate excitement about mathematics in their students.

* "teaching" is to be interpreted in its broadest sense, not necessarily limited to classroom teaching (it may include activities such as preparing students for mathematical competitions at the college level, for example, the Putnam Prize Competition or the Mathematical Contest in Modeling, or attracting students to become majors in a mathematical science or to become Ph.D. candidates).

** "influence beyond their own institution" can take many forms, including demonstrated lasting impact on alumni, influence on the profession through curricular revisions in college mathematics teaching with national impact, influential innovative books on the teaching of college mathematics, etc.

Nominations must be submitted on the enclosed "Nomination Form". Please follow the instructions on that form precisely to assure uniformity in the selection process both at the Section and National levels.

If a file on a Section awardee significantly exceeds the prescribed limits (as stated on page 2 of the Nomination Form), it will not be considered for a national award and be returned to the Section.

Please send six copies of each nomination packet to:

Professor Steve Nimmo
Secretary, Iowa Section
Morningside College
P.O. Box 6400
Sioux City, IA 51106

so as to be received no later than January 1, 1997.

The section selection committee will select the section awardee during January and communicate its selection to the national selection committee no later than February 1 so that the national committee can then make its selections.

We look forward to your participation in this exciting MAA venture of taking substantive action to honor extraordinarily successful teaching. We want to see such teaching recognized at all post-secondary school levels. We depend on you to help us identify those who merit such recognition.

**MATHEMATICAL ASSOCIATION OF AMERICA
AWARDS FOR DISTINGUISHED COLLEGE OR UNIVERSITY
TEACHING OF MATHEMATICS**

**Nomination Form
(Please Type)**

Name of Nominee (Last name first) _____

Name of College or University _____

College or University Address _____

College Telephone (____) _____ Home Telephone (____) _____

Number of years of teaching experience in a mathematical science _____

Has the nominee taught at least half time in a mathematical science for the past three years
(not counting a sabbatical period)? _____

Activities relating to teaching _____

Publications related to teaching if any (list no more than five). _____

Membership and significant activities in relevant professional organizations _____

Previous awards for teaching, if any _____

Additional relevant information _____

Name of nominator (last name first) _____

Address of nominator _____

Signature

Evidence of Success in Teaching

Please describe the nominee's success in teaching by providing a narrative of the nominee's background, experience, teaching style, special contributions, and other related information not already included in the Nomination Form. Limit this portion to no more than four pages, which must be typewritten and double-spaced on one side only of an 8 ½ x 11 paper. Type size, whether word processor or typewriter, should be no smaller than 12 (pica) in size.

You are also required to submit no more than 3 pages of evidence to document the nominee's extraordinary teaching success. Appropriate documentation may vary greatly from institution to institution but may include summaries of peer or student evaluations and comments on teaching and other information specific to the nominee's accomplishments, such as increases in numbers of mathematics majors or Ph.D. candidates (with clear evidence of the substantial responsibility of the candidate for these increases); or if a strength of the candidate is preparing students for competitions, then student successes in these competitions should be cited.

In addition, you may include a maximum of five letters of recommendation (limited to one page each) with at least two from the nominee's present or former students and at least two from colleagues (one of whom could be the department chair).

Curricula vitae should not be submitted since the information from them relevant to teaching success should be included in the Nomination Form and the other documents mentioned above.

Campus News

Buena Vista University

Nasser Dastrange
dastrange@bvuv.edu

A Buena Vista University computer programming team led by Dr. Kenneth Schweller, Professor of Computer Science, is one of 19 winners selected from 360 qualified submissions in the Java Cup International applet programming contest sponsored by Sun Microsystems, Inc. The Buena Vista Team won computer equipment and software valued at approximately \$82,500.

Dr. Nasser Dastrange, Associate Professor of Mathematics, attended the following workshops:

(a) Augment the Teaching of Linear Algebra through the use of Software Tools(ATLAST, 96). University of California, San Diego, LaJolla, CA, July 23-27, 1996.

(b) Computer Algebra Systems and Calculus Short Course. Western Carolina University, Cullowhee, North Carolina, August 5-9, 1996

Currently, we have five seniors in mathematics and four seniors in computer science at Buena Vista.

Central College

Mark Johnson
johnsonm@ac.central.edu

Faculty News:

Anges Andreassian participated in the Augment the Teaching of Linear Algebra through the use of Software Tools (ATLAST) '96 workshop, held June 12-15 at Salve Regina University in Newport, R.I.

Robert Franks reviewed NSF Undergraduate Faculty Enhancement proposals for computer science. He also helped set up a Pentium Pro machine at Central to run the Linux operating system.

Al Hibbard was involved in a few professional activities this summer, starting out with a week at Calvin College working on activities of the Mathematics Archives

(<http://archives.math.utk.edu>). Following this was a week-long NSF workshop entitled Exploring Undergraduate Algebra & Geometry With Technology at DePauw University. Later, Al went to St. Olaf College for a workshop on the new Ostebee/Zorn Multivariable Calculus text. Additionally, this past spring he was awarded a Visiting Scholar Grant from Wolfram Research to work on Mathematica materials for abstract algebra at their corporate headquarters.

Al's book "Calculus Explorations using Mathematica" for the Ostebee/Zorn Calculus was also recently published by Saunders College Publishing.

Mark Johnson attended the annual meeting of the Association for Symbolic Logic in Madison, WI, and then later participated in a workshop at Marquette University in Milwaukee on undergraduate student consulting groups. The workshop brought together academic and industrial representatives to explore different ways of having student teams act as mathematical consultants.

Donald Meyer attended a week-long workshop sponsored by the NSF on Calculus Reform at the University of Wisconsin-Oshkosh. He also attended the Seattle Mathfest.

Steven Ratering was awarded tenure in the spring of '96. He spent the past summer studying computer architecture and working in the electronics lab to prepare for a new course in Computer Organization and Architecture.

Student News:

The class of '96 included 7 students majoring in mathematics and/or computer science. Six took positions as programmer/analysts, and the seventh is student teaching this fall. Our numbers are looking up for the next couple of years, with 24 junior and senior majors. At least six of these students had internships this past summer.

Last year, three of our majors had papers chosen for the college-wide Writing Anthology. In addition, we started a student problem-solving group which sent a team to Ames for the Iowa Problem-Solving Contest. The computer club has also been revived and is now planning activities for the coming year.

Classroom News:

We decided to continue using the Ostebee/Zorn calculus materials for a second year, with students using Mathematica in a computer classroom. We are also continuing to use graphing calculators in precalculus, and Mathematica in

upper-level courses like abstract algebra and numerical analysis.

We have recently started two new courses for arts and humanities majors: one in Problem Solving using Pacific Crest materials, and one in Contemporary Math using Tannenbaum and Arnold's Excursions in Modern Mathematics. Both of these courses stress the development of college-level reading, writing, and critical thinking skills as part of Central's new core curriculum.

Coe College

Cal Van Niewaal
cvanniew@coe.edu

Charles Lindsay has announced that he will retire at the end of the current academic year. Charles is the senior member of Coe's faculty, completing his fortieth year at the college.

A computer programming team from Coe placed first in the undergraduate division of the 1995-96 ACM North Central Regional Programming Contest. The win earned Coe a spot in the finals of the Twentieth Annual International Collegiate Programming Contest sponsored by Microsoft. Coe ranked 17 in the competition which was held in Philadelphia in February 1996. Only four small colleges (Coe, Carleton, Swarthmore and Wheaton) were among the forty-three teams from around the world invited to the finals. Team members were Joe White, Jeremy Pilgrim, Jason Shockley and Cory Large (alternate). Cal Van Niewaal served as faculty advisor and coach.

Jon White has started a "Math Problems of the Month" contest. Two or three problems are posted each month and the first correct solutions win a small prize. The problems are of varying difficulty (no college math required, some calculus useful, modern algebra helpful, etc).

Eight mathematics majors and 10 computer science majors were members of the class of 1996. Melissa Ingersoll was awarded a Richter Prize. The Richter Prize recognizes superior work on an independent study project. Melissa was the first mathematical sciences major to earn the prize since 1985.

The name of the department was changed from Mathematics and Computer Science to Mathematical Sciences. Statistics courses at Coe now are denoted with a prefix of STA instead of MTH. This change gives statistics the same status as mathematics and computer science.

Dordt College

Dennis De Jong
ddj@cc.dordt.edu

Dr. Rick Faber is teaching at Dordt College in the Mathematics Department as a one-year replacement. Dr. Faber graduated from Dordt College with a B.A. degree and earned M.S. and Ph.D. degrees at the University of Illinois. The topic of his doctoral dissertation was functional analysis.

Professor Arnold Veldkamp is on a one-year leave of absence from the Dordt College Mathematics Department. He and is spending his sabbatical teaching English and Mathematics in China. Professor Veldkamp and his wife, Helen, are working with Educational Resources and Referrals - China (ERRC) and are teaching at Guangzhou, Guangdong, People's Republic of China.

Drake University

Alexander Kleiner
ak1041r@acad.drake.edu

Luz DeAlba has been promoted to the rank of Professor, effective this fall.

Bernie Baker is on sabbatical this year. She is working on a project for RUMEC.

Ken Kopecky and Patsy Fagan have returned to full-time teaching after a year on sabbatical.

Milan Randic' received the American Chemical Society's 1996 Herman Skolnik Award in recognition of outstanding contributions to and achievements in the theory and practice of chemical information science. The award was made at the August meeting of the ACS. As part of the award, Milan organized a session at the meeting on Chemical Graph Theory.

A team consisting of Dan Alexander, Luz DeAlba, Alex Kleiner and Larry Naylor represented the Department at the summer PKAL conference in Iowa City.

Laura Potter, a 1995 Drake graduate has started graduate work in Mathematics at North Carolina State University.

Kartik Parija, a Drake undergraduate, spent last summer at the Jet Propulsion Laboratory. He also presented a paper at one of the MAA student sessions at the summer meetings in Seattle and received an award for his presentation.

Grand View College Natural Science Division is going to have a Math/Science Symposium on December 6-7, 1996. Nationally known educators will be speaking and presenting. The Symposium is designed for Math/Sciences educators at the High School and College/University Level. It is free but prior registration is needed.

Faculty:

Erna Jensen presented a paper at the Iowa Council of Teachers of Mathematics entitled: "Not All Freshmen Can Be Math Majors" and also attended the Mathfest in Seattle.

Sergio Loch co-organized NExT-95 activities during the Mathfest in Seattle. During the summer he participated in the Calculus for Engineering Students at Iowa State University, in the Project ATLAST workshop, and in RUMEC conference at the University of Central Michigan. He also taught a mini-course in Numerical Solutions of Differential Equations for graduate students at University of Sao Paulo, Brazil.

Loch is teaching Calculus using Calculus from Graphical, Numerical, and Symbolic Points of View, by Ostebee & Zorn. Students are required to do at least six group projects using Mathematica and/or MATLAB. The Linear Algebra course that he is teaching uses MATLAB extensively with the M-files and lesson plans developed during the Project ATLAST workshop.

Brian O'Donnell is experimenting with technology and/or alternative teaching techniques in the following courses:

Introductory Statistics - He has extensively been using MINITAB software as a teaching aid. Daily homework assignments contain computer exercises and major projects are assigned that use the computer for data processing and simulations.

Calculus - He has been using MATLAB and Mathematica.

Mathematical Reasoning - He is putting in practice several ideas obtained during a series of presentations "Introductory Logic and Proofs" that he attended during the Mathfest this Summer in Seattle.

Brian has been involved in the following research projects during the past year:

Des Moines Police Department - Office of Research and Development
This project used standard regression and queuing theory techniques to estimate staffing required to respond to Priority One 911 calls in a given amount of time.

Office of Naval Research, Grant No N00014-96-1-0279
He is working as a co-investigator on a three-year grant with a group from ISU. This project studies optimal filtering and prediction techniques in multiple target tracking.

Brian has been the Natural Sciences Division Chair since Summer 1995.

Grinnell College

Emily Moore
mooree@math.grin.edu

Department News:

Anita Solow has left Grinnell to become Dean of the Faculty at DePauw University in Greencastle, Indiana. Charles Jones has also left Grinnell for Greencastle and is working in the insurance industry. New on the staff are Ellen Gethner, most recently at the Mathematical Sciences Research Institute in Berkeley, California, whose Ph.D. is from Ohio State, and Iwan Praton, whose Ph.D. is from MIT

Departmental Seminar:

In our departmental seminar this year we are studying "Rational Points on Elliptic Curves" by Joseph Silverman and John Tate.

Our Faculty:

Arnie Adelberg is on sabbatical in 1996-97. He is spending the first semester at the Centre for Number Theory Research, Macquarie University, Sydney, Australia; second semester at Wake Forest University, Winston-Salem, N.C. He recently published the paper, "Congruences of p-adic Integer Order Bernoulli Numbers", Journal of Number Theory, August 1996. He gave an invited talk "Newton Polygons and Bernoulli Polynomials" at the International Conference on Fibonacci Numbers and their Applications, held in Graz, Austria, in July, 1996. (Paper submitted to Proceedings of Conference.)

Ellen Gethner has recently had a paper accepted by the American Mathematical Monthly. The paper, coauthored with Stan Wagon (Macalester College) and Brian Wick (University of Alaska, Anchorage) is called "The Gaussian Moat Problem." Her related expository paper, "In Prime Territory" appeared in the April, 1996 issue of Math Horizons. Dr. Gethner gave research talks last year at UC San Diego, UC Santa Barbara, and the Mathematical Sciences Research Institute. In addition, she gave community outreach lectures to general audiences. In the high school outreach program "Numbers in Action," she shared the podium with John Conway and Hendrick Lenstra. This summer, Dr. Gethner gave a talk at the "Bay Area Mathematics Project" in Albany, California, the purpose of which was to explain to high school teachers what a research mathematician does.

Gene Herman is the Chair of the Department.

Chuck Jepsen conducted research with three Grinnell Students -- Melissa Booker, Andy Lee, and Roc Yang -- in the summer 1996. The paper "Pythagorean Squares, Pythagorean triples, and elliptic curves," jointly written with Roc Yang, has been submitted for publication as a result of this research experience.

His paper "Equidissections of Trapezoids" has appeared in the June-July 1996 issue of the American Mathematical Monthly. The paper "Dissections of $p:q$ rectangles" has appeared in the April 1996 issue of Mathematics of Computation.

Emily Moore continues her work on graphical user interfaces to mathematical graphics software in MATLAB.

Tom Moore is a co-editor of the Newsletter for the Section on Statistical Education of the ASA and is a co-editor of two journals: The Journal of Statistics Education and The American Statistician. In April he was the Pi Mu Epsilon invited lecturer at Macalester.

Iwan Praton published the papers "Overrings of primitive factors of Quantum $sl(2)$ " in the Journal of Pure and Applied Algebra, and "Extensions and Generalizations of Tucker's Theorem" (with Chanchel Singh) in the Journal of Optimization Theory and Applications.

John Stone conducted a workshop on the Scheme programming language for members of Grinnell's faculty. Materials from this workshop can be found at <http://www.math.grin.edu/~stone/events/scheme-workshop/>.

In September, he participated in a panel discussion on "Government regulation and censorship of the information superhighway" at a meeting of Chicago-area Grinnell

alumni at the Newberry Library. Materials from this discussion can be found at <http://www.math.grin.edu/~stone/events/Newberry/>.

Since fall 1995, he has been publishing almost all of the handouts and exercises for his courses on the World Wide Web. They can be found at <http://www.math.grin.edu/~stone/courses/>.

Henry Walker returned from sabbatical this fall. He co-authored (with Nell Dale from UT-Austin) the book "Abstract Data Types: Specifications, Implementations, and Applications," which appeared in February, 1996.

His paper, "A Revised Model Curriculum for a Liberal Arts Degree in Computer Science", co-authored with Michael Schneider from Macalester College, will appear in the December 1996 issue of Communications of the ACM. He has written and submitted for publication two papers: "Modules to Introduce Assertions and Loop Invariants Informally Within CS1: Experiences and Observations", and "Collaborative Learning: A Case Study for CS1 at Grinnell College and UT-Austin", and has organized and led four workshops for high school computer science teachers.

Royce Wolf worked with Grinnell students Rebecca Schuller and Jeff Mather during the Summer of 1996. He delivered a talk "Axioms for S-Pregroups" at the University of California, Berkeley campus in the Spring of 1996. He is giving no piano recitals this year while he explores and expands his repertoire.

The University Of Iowa Department of Statistics and Actuarial Science

We are delighted to announce that UI Alumnus Robert J. Myers (Former Chief Actuary of the Social Security Administration) has donated \$100,000 to the Department of Statistics and Actuarial Science in memory of his late wife, Ruth "Rudy" Myers. The gift provides 29 networked computer workstations, statistical software packages, printers, and a classroom projection system used in teaching statistics and actuarial courses. These will equip a new Departmental computing laboratory in our remodeled quarters in Schaeffer Hall. Each year about 1,500 students enroll in courses which will use this computing facility. This will be a great benefit to our Departmental majors and to the many other students who take our classes.

Student Information:

In August, a team of five Ph.D. students participated in the Statistics Bowl at the ASA/IMS meetings in Chicago. The team members were: Chris Carolan, Joy Jordan, Jong-Sung Kim, Michelle Larson and Chris Najim. They did very well, advancing into the semifinal round before being defeated by the eventual winner, Iowa State.

In the summer of 1996, Dan Nettleton earned his Ph.D. in Statistics and became an Assistant Professor at the University of Nebraska at Lincoln. Dan's thesis topic was "Interval Mapping of Quantitative Trait Loci Through Order Restricted Inference," and his advisor was Tim Robertson.

Student Awards in 1995-96:

Allen T. Craig Award for outstanding service as Teaching Assistants:

Andy Ferris, Dan Nettleton, and Greg Sheridan

Lloyd Knowler Award for being outstanding Actuarial Science students:

Jill (Yi-Fen) Kung and Larry Lickteig

Henry L. Rietz Award for being outstanding newly qualified Ph.D. students:

Chris Carolan, Jeff Isaacson and Ming-Chung Li.

During the academic year 1995-96, we awarded

19 B.S. degrees (16 in Actuarial Science, and 3 in Statistics)

26 M.S. degrees (13 in Actuarial Science, and 13 in Statistics)

3 M.S. degrees in Quality Management and Productivity

2 Ph.D.s in summer 1995 (Gavin Cross and King Jang Yang)

Our undergraduate majors number 73 this year. There are two from Indonesia, two from Malaysia, and the remaining 69 are from the USA. Of the domestic students, 50 are from Iowa, 10 from Illinois, two from Minnesota, and there is one each from Colorado, Hawaii, Kentucky, Michigan, Pennsylvania, Utah, and Wisconsin. The undergraduates may also be classified as follows:

Undergraduate Major	Number	Undergraduate Gender	Number
Statistics	8	Male	48
Pre-Actuarial Science	46	Female	25
Actuarial Science	19		

Our graduate student population has a very diverse international look this year. In

addition to our 21 graduate students from the USA, we have 26 from Taiwan, 8 from China, 6 from Korea, and one each from the following countries: Bangladesh, Canada, Chile, England, Ghana, India, Italy, Iceland, Japan, Kenya, Malaysia, Morocco, Netherlands, Philippines, Russia and Thailand. Of the 21 domestic graduate students, 9 are from Iowa, 10 are from other Midwestern states, one is from New York, and one is from Oregon.

Faculty Activities:

James Broffitt began a second term as our chairperson, and has been very busy conducting the Departmental self study and making preparations for the Department's move to Schaeffer Hall during the summer of 1997.

During the past year, two friends left for other endeavors:

- Bruce Jones is teaching at the University of Western Ontario in London, Ontario, Canada.
- Kelley McKeating, who had been our Actuarial Science Program Coordinator, accepted an actuarial position at London Life Insurance Company in London, Ontario, Canada.

Michelle Larson is our new Actuarial Science Program Coordinator. She received her B.S. in Actuarial Science from Iowa in 1989, and worked at Northwestern Mutual Life before returning to receive her MS degree in Statistics. She has earned her Associateship in the Society of Actuaries, and is currently working on her Ph.D. in Statistics.

Elias Shiu is working on a financial economics textbook with a team of international authors. The book project is sponsored by the Society of Actuaries Foundation and the Lincoln National Corporation. Elias and Professor Hans Gerber of the University of Lausanne were awarded the Society of Actuaries' 1995 Annual Prize for their paper, "Option Pricing by Esscher Transformations," which was published in the *Transactions of the Society of Actuaries*.

James Broffitt, Bruce Jones and Elias Shiu helped organize and participated in the 31st Actuarial Research Conference at Ball State University in Muncie, Indiana in August. The conference honored Dr. John A. Beekman, a distinguished Iowa alumnus, retiring from Ball State University after 26 years of service to its actuarial program and 33 years at Ball State.

Kung-Sik Chan received a prestigious faculty scholarship from the University to continue his research in chaos and time series. He is spending the current academic year at the Institute of Nonlinear Science, University of California, San Diego.

Jon Cryer was an invited lecturer at a week-long, intensive workshop in June 1996 entitled, "Statistical Thinking with Active Teaching Strategies (STATS)" at The University of the Pacific.

Jon was named a Fellow of the American Statistical Association during the year. He is working on completing a multi-media project with George Cobb of Mt. Holyoke College. This CD-ROM reviews basic statistics with animations, interactive art, video clips and self-test questions.

Dick Dykstra is working on an NSF contract with Jens Praestgaard, concerning asymptotic theory of stochastically ordered distributions. Dick gave an invited talk at Kansas State University.

Bob Hogg is beginning phased retirement, which means he will teach one semester each year. This fall is his teaching semester. In the spring he will make a Quality Journey visiting 25 universities, giving at least one talk at each. In addition, the fifth edition of Hogg and Tanis will be available in January 1996; and since Macmillan went under, it is now a Prentice-Hall book.

Our congratulations to Joe Lang who married Karen Heimer last June. Karen is an assistant professor in the Department of Sociology. Joe has been collaborating with Scott Eliason, of the Department of Sociology. They are developing new methods for the analysis of social mobility data. They have been invited to present preliminary results at this year's Social Science and Statistics Clifford Clogg Memorial Conference at Penn State.

Russ Lenth is the new director of the MS program in Quality Management and Productivity. He wants to develop partnerships with industries and businesses in the Iowa City area so that students in the program can gain hands-on experience working on quality problems. Russ also hopes to make the program more attractive and accessible to individuals who already work for these companies and who want to enhance their education. The program is jointly sponsored by the Departments of Statistics and Actuarial Science, Industrial Engineering, and Management Sciences.

Russ has been experimenting with graphical interfaces for sample-size determination. These tools are useful, for example, in deciding how many subjects to use in an experiment. Some programs have been developed that run interactively over the Internet, and they are available to anyone using a Java-enabled Web browser. If you're curious, connect to <http://www.stat.uiowa.edu/~rlenth/Power>.

George Woodworth was promoted to Professor of Statistics and Professor of Preventive Medicine, and selected as a Fellow of the American Statistical Association during the past year. George is spending the fall semester at Carnegie Mellon University, where he is working on a monograph concerning law and justice statistics.

Dale Zimmerman spearheaded a successful \$55,000 grant proposal to the National Science Foundation which will fund five state-of-the-art computer workstations for Department faculty. Dale gave invited talks at the Eastern North American Region of the Biometric Society in March 1996, at the University of Illinois in November 1995, and at North Carolina State University in March 1996. He gave another talk at the Spatial Accuracy Symposium in Fort Collins, Colorado in May 1996.

Dale was appointed an Associate Editor of *Environmetrics*, a leading scholarly journal of environmental statistics. He is the current Director of Graduate Studies for our department, and he became the father of a baby girl this year.

Visitors:

Last year our visiting scholars were Bakhodir A. Ergashev from the University of World Economy and Diplomacy in Tashkent, Uzbekistan and Satoshi Kuriki from the Institute of Statistical Mathematics in Tokyo, Japan.

Our Colloquium Series had a banner year with an all-time record of 24 speakers from other universities and companies visiting our Department.

Our Allen T. Craig lecturer was Trevor Hastie of Stanford University. His lecture topics were: "Flexible Discriminant and Mixture Models" and "Metrics and Models for Handwritten Digit Recognition."

Iowa State University
Department of Statistics

Dean L. Isaacson
S2.DLI@ISUMVS

Derrick Rollins, professor of statistics and chemical engineering, received special recognition from two Iowa State University groups: as Outstanding Engineering Professor in Chemical Engineering for 1995-96, from the Engineering Student Council, and as Professor of the Year for 1995-96, from Lampos. He has also been

named to chair the African American Studies program on campus and to advise Martin Jische, ISU president, on diversity and minority concerns.

William Q. Meeker was named a Distinguished Professor of Liberal Arts and Sciences at the 1996 Awards Convocation May 9. This is the highest academic honor given by ISU. Also Richard Groeneveld was awarded the title of University Professor as a senior faculty member who has had a significant impact on his department and the university in the areas of teaching, research, and professional service.

W. Robert Stephenson was promoted to full professor and F. Jay Breidt was promoted to associate professor with tenure, with approval by the Board of Regents in April 1996.

Mervyn Marasinghe accepted a visiting senior lecturer appointment in the Department of Statistics and Computer Science, University of Colombo, Sri Lanka, for the period June 7-July 26, 1996, to engage in teaching and collaborative research.

Alicia Carriquiry is on faculty improvement leave for the 1996-97 academic year, primarily in Chile and Germany, to develop estimators for unknown parameters in the linear and nonlinear dynamical models and assess their performance through well designed simulation experiments.

David Harville resigned in December 1995 to take a position as senior statistician with the IBM Thomas J. Watson Research Center, Yorktown Heights, New York. H. A. David, Liberal Arts and Sciences Distinguished Professor, retired at the end of the 1995-1996 academic year but retains an office, 102C Snedecor Hall, and is continuing research here. Robert F. Strahan, professor of psychology and statistics, retired effective June 30, 1996. At the Awards Convocation on May 8, 1996, the College of Liberal Arts and Sciences conferred the title of professor emeritus on H. A. David, David Harville, and Robert Strahan.

Oscar Kempthorne, Distinguished Professor emeritus, moved to a new home in Arlington, Maryland, in May. He has donated much of his professional library to the Department of Statistics.

Bud Meador retired effective March 29, 1996 from the Statistical Computing Section and has moved to a new home in Bella Vista, Arkansas.

Yuhong Yang is expected to join the faculty as an assistant professor as soon as visa problems are resolved. He has completed a Ph.D. program in the Department

of Statistics at Yale University.

Linda Collins is resigning as assistant professor effective December 31, 1996 to take a position at the University of Texas at San Antonio.

Five faculty searches are being conducted this year, to fill positions vacated by Strahan, Collins, and Harville and to fill new positions in environmental statistics and survey sampling.

In the 1995-96 fiscal year, 7 students received B.S. degrees in statistics (including one degree with joint majors in statistics and political science). Two of these students were in the Honors Program. There were approximately 150 graduate students in statistics at ISU and 10 at General Motors within that period. Twenty-four received M.S. degrees and five received Ph.D. degrees in statistics (including one degree with joint majors in psychology and statistics). At the summer 1996 graduation there were 10 additional M.S. degrees and 3 Ph.D. degrees awarded in statistics (including one degree with a co-major in meteorology).

An undergraduate statistics major has been awarded a Barry M. Goldwater Scholarship for 1996-97, for the second time: Vera F. Boulaevskaia (who has a second major in French). The scholarship pays for up to \$7,000 in expenses such as tuition, fees, books, and room and board for the academic year.

The Department of Statistics was selected to receive two four-year Miller Graduate Fellowships, each with an annual stipend of \$5,000 starting in 1996, to attract outstanding graduate students. These are funded by earnings from the Miller Endowment Trust. The ISU College of Agriculture is funding a similar fellowship for the Department of Statistics, to be known as the George W. Snedecor Graduate Fellowship, providing the same level of support and starting in 1996. First-year recipients of the three fellowships are Dominic Dorsa, Daniel Nordman, and Paul Hendrickson.

ISU Graduate College Teaching Excellence Awards, recognizing outstanding contributions in the teaching of undergraduate students while working toward degrees, were presented to Michael Eraas and Christopher Scheib in December 1995 and to Melanie Wall in May 1996. A Research Excellence Award was given to Christopher Wike in August 1996. The Department of Statistics presented the Dan Mowrey Consulting Excellence Award to Francis Pascual and Becky Benner, and the Vincent Sposito Statistical Computing Award to Tae-Sung Shin and Kevin Wright, in May 1996.

The George W. Snedecor Award to an outstanding doctoral student in statistics

went to Anindya Roy. The 1996 T. A. Bancroft Award went to Elizabeth Paterno, who is pursuing a joint Ph.D. in economics and statistics. Amy Jo Meyer received the Vera David Graduate Fellowship in Statistics, given for the 1996-97 year. The award is designated for a woman who has just completed her first year of graduate studies in statistics at Iowa State. Also chosen during the summer were Phil Jones and Jun Zhu as Ph.D. students to receive the Holly and Beth Fryer Scholarship Award.

The George W. Snedecor Lecture, "Probability before and after the event in the work of R. A. Fisher," was given on September 30, 1996, by A. W. F. Edwards, Cambridge University. The George Zyskind Memorial Lecture, "Residual likelihood, vector spaces, and generalized linear models," will be given on October 21 by Peter McCullagh, University of Chicago.

The graduate student organization Iowa STAT-ers continues its activities ranging from a seminar series to intramural sports, a multi cultural party, and coordination of paper and can recycling in Snedecor Hall.

Iowa State University
Department of Mathematics

Stephen J. Willson
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Max Gunzburger is the new chair of the Mathematics Department at Iowa State University. Max was hired directly from his previous position at the Interdisciplinary Center for Applied Mathematics at Virginia Tech in Blacksburg, Virginia. His research area is numerical analysis, especially problems associated with superconductivity and flow control.

Janet Peterson and Moulay Tidriri are new faculty members in the department during Fall 1996.

Dan Ashlock has been promoted to Associate Professor with tenure, and Jim Evans has been promoted to Full Professor.

Several mathematics faculty members have been awarded Faculty Improvement Leaves at other institutions. The faculty on such leaves during much of the 1995-96 academic year were Krishna Athreya, Bryan Cain, Roger Maddux, Don Pigozzi, Bruce Wagner, and Stephen Willson. The faculty who are currently away

from ISU on Faculty Improvement Leave during at least part of the 1996-97 academic year are Bill Rudolph and Wolfgang Kliemann.

There are several on-going experiments in the teaching of calculus. Ten sections of beginning calculus are participating in an experiment by Brian Keller which involves the use of active learning techniques and technology. Instructors of some other sections are being asked to be part of a comparison group. Brian Keller is also running an experiment in some sections using pre-tests, post-tests, and interviews to examine how students think about mathematics. Moreover, for a doctoral dissertation a graduate student in higher education is conducting an experiment which will attempt to determine whether taking calculus actually improves critical thinking skills.

An early warning diagnostic exam was given to students in all sections of beginning calculus. Engineering students who had difficulty with the exam were contacted by their departments and encouraged to participate in study groups or other appropriate activities.

Some special sections of beginning calculus meet an extra day each week. The extra fifteen periods are devoted to a review of trigonometry and algebra skills.

Professor Alan Heckenbach died of heart failure on October 17, 1996. Dr. Heckenbach had been on disability leave since summer 1992, when he suffered a massive stroke. He was a long-time member of the M.A.A. and served as Secretary/Treasurer for the Iowa Section of the M.A.A. during the period 1984 to 1987.

Iowa Western Community College

Carol Huffman

Don Gray retired in May from Iowa Western Community College where he was chair of the Math and Science Department. Don had served the college for 29 years. The new coordinator of Math, Science, and Sports Science is Carol Huffman.

Joyce Becker spoke at three NCTM and ICTM meetings on Math Clubs and Incorporating Math History into Math Methods courses. She chaired the Nominations Committee for Mu Alpha Theta to fill the slate of candidates for National President. Candidates included John Dossey and Robert Devaney. She wrote an article on Mu Alpha Theta for inclusion in "Mathematics Education: An Encyclopedia". She wrote a chapter called School Mathematics Clubs for inclusion in the book "Popularizing Mathematics: A Sourcebook of Ideas".

Ruth Berger spoke at two ICTM meetings on Check digits and the Iowa MAA meeting on using technology in Abstract Algebra. She participated in the workshop on 'Exploring Undergraduate Algebra and Geometry with Technology' in June at DePauw University. She is a member of project CLUME (Cooperative Learning in Undergraduate Mathematics Education).

Richard Bernatz chaired a session on "Environmental Applications" at the Sixth International Symposium on Flow Modeling and Turbulence Measurements held in September at Florida State University in Tallahassee, Florida. His student Kurt Schweitz presented a paper they co-authored entitled "Five-point Finite Analytic Solution of Convective Heat Transfer for Tube Arrays in Cross Flow."

Reginald Laursen class tested the preliminary edition of Ostebee and Zorn's Multivariable Calculus from Graphical, Numerical, and Symbolic Points of View. He gave a presentation regarding the class testing to the NSF funded 1996 St. Olaf Calculus Workshop in July 1996.

Dave Mitchell is working with Iowa State University in leading a Saturday mathematics program for Talented and Gifted middle school and high school students. Through self-paced learning students in the program work towards completing an entire year of high school level mathematics during their seven meetings on the Luther College Campus.

Laursen, Bernatz and Berger represented Luther College at the PKAL (Project Kaleidoscope) workshop on "Revitalizing Undergraduate Mathematics" at the University of Iowa in July. As a result of the conversations that we had at the workshop we have now changed the format of our weekly department meetings to have discussions on teaching every other week.

We graduated 3 Math/Statistics majors, 18 Math majors and 18 Computer Science

majors of which 5 were double Math and CS majors. We graduated 12 Math Minors.

We are still using the Ostebee/Zorn calculus reform text in our Calculus sequence.

Guest speakers: We would like to start an exchange program of speakers in which nearby colleges send a lecturer to math club meetings. A letter inviting you to participate will be sent shortly. We are also considering an exchange of faculty speakers on innovative teaching methods. Please contact Alan Macdonald if you are interested.

Maharishi University of Management

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John Price wrote an article for the September issue of Notices of the American Mathematical Society called "Optional mathematics is not optional." The article is a survey of the mathematics and future research directions in the area of mathematics applied to financial risk management. The fractal image on cover describes some of the ideas behind a new high-speed method for calculating the values of American options that John has developed. He has been receiving e-mail everyday from around the world wanting more information---the mathematics of finance seems to be of great interest these days. John has received an invitation from World Scientific Publishers to write a book on the mathematics of option valuation and an invitation from the Illinois Section of the MAA to give a one-hour address to their meeting at Rockford College in Rockford, Illinois in March; the title will be "From Black-Scholes to risk holes: a look at the mathematics of option pricing"

Dave Streid will return to the department full-time in January after three years as director of Maharish Vedic University in Madison, Wisconsin and Ton Boerkoel will return in May after completing his Ph.D. at the University of Texas Austin and teaching for three years at Texas A&M at Kingsville.

Cathy Gorini has been editing a collection of papers on applied geometry.

We now have about 6 second-year mathematics majors, the highest number in recent years. We attribute this success to the appeal of our mathematics computer laboratory with 10 PowerMac's.

North Iowa Area Community College

Adriana Attleson
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Caroline Goodman was added to the mathematics department at North Iowa Area Community College. Caroline taught mathematics at Parkland Community College in Champaign, Illinois, before moving to Charles City with her family. She will teach career and technical mathematics and lead the curriculum revision in those areas.

Adriana Attleson and Mary Thede will attend the annual conference of the American Mathematical Association in Long Beach, California, in November.

University of Northern Iowa

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The Masters of Arts that was developed in 1992 produced 16 graduates this summer. This program continues to be strong with about 20 new students starting this year. Carver and Eisenhower grants were used to develop this program. ED Rathmell(e-mail Edward.Rathmell@uni.edu) can be contacted for additional information about this program.

Hyo Myung is on leave at the Korea Advanced Institute of Study in Seoul, Korea serving as Vice-President and acting President of the Institute. Maura Mast is on leave at Wellesley College.

During the summer Syed Kirmani gave an International Workshop on Developments in Applied Statistics in Malang, Indonesia. In the academic year he presented at joint statistical meetings and at conferences at George Washington University and Iowa State University. Douglas Mupasiri is presenting a series of seminars on the Gower-Maurey Space at the University of Iowa.

Jack Wilkinson had a DODS grant renewed. The project is training overseas teachers that staff schools for DOD staff. An Exxon grant is supporting a project led by Paul Trafton that is studying children's natural strategies for solving problems and their development of computational strategies.

Min Lee was promoted to Professor of Mathematics. Joel Haack received the Dean's Award in the College of Natural Science for Teaching Excellence in Department Programs.

After many valuable and productive years at UNI Diane Baum and Augusta Schurrer are retiring next Spring. Augusta will have served us for 47 years and Diane for 33 years.

The Mathematics Department started three faculty searches with August 1997 as the starting dates.

Students in our department have started a mathematics club with interest being the requirement for membership. They meet every other week. Activities will include: playing volleyball, eating doughnuts, trying their hand at Putnam problems, training on the Web and speakers. We've had between 14 and 22 at the first three meetings.

Last year seven students members of KME gave papers at local meetings. At the Regional KME meeting in Topeka, KS, Heather Golliher presented a paper on "Real Division Algebras" and Suzanne Shontz presented a paper on "Molecules and their Symmetries". There were eight students taking the Putnam Exam last year, two teams participated in the COMAP Mathematical Contest in Modeling and eight students participated in the Iowa Collegiate Mathematics Contest held at ISU last spring.

Suzanne Shontz participated in a summer institute for undergraduates at the University of Minnesota. She worked on Combinatorial Models of Algebraic Surfaces. Her research resulted in the development of new models and she presented a paper "Combinatorial Models of Smooth Algebraic Curves" at a department seminar.

Northwestern College

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The most exciting new development in the Northwestern College math department is the addition of a third full-time faculty member. Owen Byer has joined us, having received his Ph.D. in graph theory from the University of Delaware last year. As recently as the '92/'93 school year, NWC had never had a math professor with a Ph.D.; now we have three, and for the first time in years none of our courses are being taught by part-time personnel.

On the publication front, Tim Huffman has co-authored a paper with Chull Park and David Skoug, "Convolutions and Fourier-Feynman Transforms of Functionals

Involving Multiple Integrals," which was published in the Michigan Mathematics Journal, Kim Jongerius (Kim Regnier before her December wedding) has co-authored a paper with Frank DeMeyer, "Etale Cohomology of Toric Varieties Defined by Infinite Fans," which was published in the Journal of Pure and Applied Algebra, and Owen Byer has had a paper, "Maximum Number of K_4 's in a 4-partite Graph," accepted for publication in the Bulletin of the Institute of Combinatorics and its Applications.

Tim Huffman is currently chairman of the department. We have 24 majors (four sophomores switched to math just this Fall). Three students graduated last May (one math, two math ed.), and we expect 4 graduates this Spring (two math, two math ed.).

1997 SUMMER SHORT COURSE HOST SITE OPPORTUNITY

The Ohio State University College Short Course Program -- affiliated with the Teachers Teaching With Technology Program -- will be funding many 3 or 5-day short courses throughout the United States in 1996 - 97. We are now taking applications for host site colleges. Courses include appropriate content material for the developmental level (DEV using the TI-83), for the college algebra-trigonometry level (ALGT using the TI-83), for the precalculus and calculus level (PCALC-CALC using the TI-83 or TI-85), and for the calculus level (CAS-CALC using the TI-92). Participants will learn how to use Texas Instruments hand-held technology to enhance the teaching and learning of mathematics. Each course will contain some use of the CBL to collect "real" data for the purpose of mathematical analysis. The DEV, ALGT, and PCALC-CALC courses will also include an introduction to the TI-92 and the latest graphing calculators from Texas Instruments. Pedagogical, testing, and implementation issues are addressed in all courses. Some AMATYC Standards recommendations will be implemented in appropriate courses. Three-day courses may be held during the academic year, and 3 or 5-day courses may be offered during the summer of 1997. Mini-grant application forms are available at:

<<http://www.math.ohio-state.edu/Entities/Organizations/TCSC/index.html>> or
<<http://www.ti.com/calc/docs/shrt.htm>>.

Hard copies of the application form can be obtained from Bert Waits and Frank Demana through Ed Laughbaum at The Ohio State University, 231 West 18th Avenue, Columbus, OH 43210, or via e-mail at <elaughba@math.ohio-state.edu>.

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Department of Mathematics, Statistics & Computer Science
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Fax. (404) 651-2246.
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