Iowa Section Newsletter



Fall 1999

Iowa Section -- Section Officer List

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Annual Meeting of the Iowa Section Simpson College, Indianola, Iowa Friday and Saturday April 14 - 15, 2000

MAA Invited Lecturer: Underwood (Woody) Dudley, DePauw University. Professor Dudley is editor of the College Mathematics Journal and is well known for authoring several books the MAA classifies as "popular exposition."

If you have questions about the meeting or you have suggestions for the meeting program please contact Bruce Sloan, Chair Elect (sloan@storm.simpson.edu).

National MAA Meeting: Washington, D.C. January 19-22, 2000

Visit MAA Online at **www.maa.org** for more information.

Iowa Section MAA -- Governor's Report

The Board of Governors met on July 30, 1999 at the Mathfest in Providence, Rhode Island. Some of the business conducted is listed below.

1. The Board approved several changes in the bylaws to reflect some preciously approved changes in the governance structure.

- 2. There was discussion of a new agenda for the MAA for the 21st century. Some of the items discussed were
 - a) A proposed new mission statement:

To promote communication, teaching and learning, and research in mathematics and its uses, especially at the collegiate level, for all who are interested in the mathematical sciences.

There was a good deal of discussion of the mission statement. A new proposed statement will be ready for the January meeting.

b) Five priority action items for the new agenda:

Better serve and expand our diverse membership

Communicate the programs, products, services, and activities of the MAA more effectively

Continue to develop MAA online, making it a more inviting, sophisticated member destination

Facilitate the formation of special interest groups (SIG's)

Explore the possibility of launching a general interest magazine

3. The Board of Governors will next meet on January 18, 2000 at the Joint Meetings in Washington DC.

Respectfully Submitted,

Elgin Johnston

Nominating Committee

Section Chair David Manderscheid has appointed the Nominating Committee for the Iowa Section. The committee members are:

Ruth Berger	Alex Kleiner (Chair)	Stephen Willson
hormorr@luth.co.ulu	Drake	Iowa State
bergerr@luther.edu	Alexander.Kleiner@drake.edu	swillson@iastate.edu

The nominating committee is seeking nominations for Chair-Elect. Members of the Iowa Section who would like to suggest possible nominees should contact one of the members of the nominating committee by January 15, 2000.

Iowa Collegiate Mathematics Contest Saturday, April 1, 2000 Luther College

The sixth annual Iowa Collegiate Mathematics Contest will be held at Luther College on Saturday, April 1, 2000. For more information, contact Ruth Berger (bergerr@luther.edu) or Elgin Johnston (ehjohnst@iastate.edu).

IOWA REGIONAL EXAM COORDINATOR

The Committee on American Mathematics Competitions (CAMC) is looking for an exam coordinator for the state of Iowa. The coordinator is the CAMC's representative in Iowa. Duties include recruiting schools to participate in the contests, speaking at meeting attended by high school mathematics teachers, preparing a summary of Iowa results, and putting out publicity about students who do well.

In recent years, Iowa has had a high level of participation in these contests. As a result of these exams, some of the better students have been invited to train with the International Mathematics Olympiad team.

If you are interested in this position, please contact Gretal Mientka at the CAMC office. The phone number is 1-800-527-3690, and her e-mail is **GRETEL @amc.unl.edu**.

Campus News

Central College

Mark Johnson johnsonm@central.edu

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Faculty News:

Three new faculty joined our department this fall:

Tom Linton came to Central from Moravian College in Bethlehem, Pennsylvania. He has taught mathematics and computer science at several small private and state institutions, is a member of the (MAA) Committee on the Teaching of Undergraduate Mathematics (CTUM), and has a Ph.D. in foundations of analysis from UW Madison. Tom attended the O/Z workshop this past summer and a minicourse on "Maple in the classroom" in San Antonio. He is interested in notions related to reform calculus, quantitative reasoning, and instructional use of technology. Outside the realm of teaching he enjoys fishing, golfing, swing dancing and thick dark beer.

Mark Mills graduated in August with a Ph.D. in (theoretical) linear algebra from Iowa State University. Mark also holds an M.S. degree from Iowa State (1993) and a B.S. degree from the University of Nebraska-Lincoln (1991). Between completion of his M.S. and starting his Ph.D., Mark worked for two years at The Principal Financial Group in Des Moines. (After a year in the "real world," Mark decided he much preferred the "utopia" that is academics, and returned the following year to Iowa State for his Ph.D.) Outside of mathematics, Mark's interests include watching and playing sports, bicycling, and reading. But Mark's favorite interest, by far, is watching the Nebraska Cornhusker football team--and college football, in general.

Wendy Weber came to Central from the University of Kentucky, where she just finished her Ph.D. She specializes in an area of convex geometry dealing with triangulations of convex polytopes. She also received an M.A. from Kentucky in 1995, and a B.A. in 1993 from the College of Saint Benedict in St. Joseph, MN.

Both Wendy and Mark are 1999-2000 Project NExT Fellows and attended the Mathfest in Providence.

Don Meyer and Agnes Andreassian retired at the end of last year, while Tom lyerson continues in his administrative role as Provost of the College.

Al Hibbard gave a presentation on using Mathematica in abstract algebra this past May at the biannual meeting of the Association of Christians in the Mathematical Sciences at Gordon College in the Boston area. He will be giving a minicourse on the same topic at the Joint Mathematics Meetings in Washington, DC. Last spring, Al received the Central College Outstanding Performance Award in Faculty Research and Development for his "Exploring Abstract Algebra with Mathematica" book.

Mark Johnson gave a presentation on developing writing assignments at the Providence Mathfest.

Student News:

The class of 1999 included 12 majors from our department in mathematics and/or computer science.

Last spring, Jon Rathje was presented the Henry W. Pietenpol Award as the department's outstanding junior major.

Cal Van Niewaal cvanniew@coe.edu

Coe has begun teaching a new interdisciplinary basic statistics course. All students take the same course in foundations during the first half of the term. During the second half of the term students are able to enroll in one of four different modules. The different modules are taught by faculty from various departments and cover those aspects of statistics that would be most needed by students intending to major in different disciplines. The course is being taught in a new computer lab/classroom. Funding for the lab was provided through an NSF grant.

Coe's math club, which had been dormant for a number of years, has begun to meet once again thanks to the efforts of Rob Krueger.

Coe had only 1 mathematics major and 5 computer science majors in 1999. In addition, 2 students graduated with mathematics minors and 1 with a computer science minor.

Cornell College

Tony deLaubenfels TdeLaubenfels@cornell-iowa.edu

The news from Cornell this fall is Ed Hill's decision to retire at the end of this academic year. The department has begun a search for a full-time tenured-tracked replacement.

Drake University

Alex Kleiner Alexander.Kleiner@drake.edu

Lawrence Naylor has been appointed chair of the Department, Patsy Fagan continues as associate chair.

Luz DeAlba is on sabbatical for the 1999-2000 academic year. Milan Randic is on a transitional sabbatical and will retire from Drake at the end of the fall semester.

Daniel Alexander has earned tenure and has been promoted to Associate Professor.

Kenneth Kopecky is serving as the Drake Director of the Iowa Space Grant Consortium. Through this program two drake students spent time last summer at the Jet Propulsion Laboratory working on Webwinds, a scientific visualization program.

Dave Renfro has been appointed Visiting Assistant Professor for the current

academic year. His previous position was in the Department of Mathematics at the Louisiana School for the Arts, Mathematics and Science.

Alex Kleiner spent a second summer as a participant in the Institute for the History of Mathematics in Teaching.

The Department has a new computer lab in its building. The lab has 10 linux workstations that can be accessed from the campus network. The lab is managed by students and provides a significant hands-on experience for the student managers.

Grand View College

Sergio Loch sloch@gvc.edu

NEW FACULTY: There are two new people in the department of Math/Computer Science. Assistant Professor Timothy Hardy received his Ph.D. from Idaho State University and taught at University of Northern Iowa before coming to Grand View. Diane Hintzsche is the new Mathematics Resources Specialist. She has a masters degree in mathematics and secondary school counseling. Diane taught previously at DMACC. She is in charge of the computer lab and tutoring.

RETIREMENT: John Gertenrich is now Professor Emeritus. He retired after teaching for 32 years at Grand View College and Waldorf College.

WORKSHOPS: Professor Erna Jensen the NSF and MAA sponsored workshop,"History of Mathematics and Its Use in Teaching", in Washington, DC. Professor Sergio Loch attended the workshop on teaching calculus at St. Olaf College and the CLUME workshop at Georgia State University in Atlanta.

NEW PROGRAM: Grand View College re-instated the Pre-engineering program and partnership with Iowa State University. Students in the program will get two degrees, a BA degree in Applied Mathematics from Grand View College and B.S. degree in engineering from ISU.

MAA STUDENT CHAPTER: A student chapter was created this summer.

Grinnell College

Marc Chamberland chamberl@math.grin.edu

In the Spring semester, 2000, Richard Guy will be our Noyce Visiting Professor. He will teach two half-semester courses ("Combinatorial Games" and "Topics in Number Theory") and will interact with faculty and students. Royce Wolf is on sabbatical leave this year. Chris Hill's one-year position in mathematics has been extended to a second year.

Our Faculty:

Arnold Adelberg is chair of the Department of Mathematics and Computer Science at Grinnell. He also continues as chair of the Noyce Visiting Professor program. His paper "2-adic Congruences of Norlund Numbers" appeared in the December issue of the Journal of Number Theory. His paper "Arithmetic Properties of Norlund Polynomials" appeared in the special June issue of the Journal of Discrete Mathematics dedicated to Henry Gould. He spoke last year at the national meeting of the AMS on Universal Bernoulli numbers, and will be speaking this year at the national meeting on Universal Bernoulli polynomials.

Marc Chamberland is happy to announce the birth of his second son, Lucas. Mathematically, he has also been active. His paper "A Mountain Pass to the Jacobian Conjecture" (with Gary Meisters, University of Nebraska-Lincoln) appeared in the Canadian Mathematical Bulletin. Several other papers have been accepted for publication, including "Polynomial Solutions to Dirichlet Problems" (with David Siegel, University of Waterloo) in the Proceedings of the AMS, "Diffeomorphic Real-analytic Maps and the Jacobian Conjecture" in Mathematical and Computer Modeling, and "An Example of Dynamic (In)Consistency in Symmetric Extensive Form Evolutionary Games" (with Ross Cressman, Wilfred Laurier University) in Games and Economic Behavior. He also co-organized the International Conference on the Collatz Problem and Related Topics held at the Katholische Universitaet Eichstaett (Germany), August 5-6, 1999. The past summer he supervised two research projects with students: Thwaites' Conjecture with Oleksiy Andriychenko and The Structure of the Lorenz Attractor with Ian Besse.

Pamela Ferguson, professor of mathematics, has been a full-time member of the department since January 1999, after a leave following her presidency of Grinnell College. Her primary mathematical interests are in algebra and in issues of science and mathematics education. In November 1998, the U.S. Senate confirmed her appointment as a member of the National Science Board. The National Science Board has 24 members and oversees the National Science Foundation as well as advising the President and Congress of issues in mathematics and science.

Gene Herman has recently published a book and CD: "Linear Algebra: Modules for Interactive Learning Using MAPLE", published by Addison Wesley Longman. This book is a collection of Maple worksheets that comprise an entire first course in linear algebra. It can be used as the only text for the course or as a collection of labs used in conjunction with a standard textbook.

Charles Jepsen was on leave in the spring semester 1999. He visited Washington State University and the University of Calgary where he gave several colloquium presentations and interacted with mathematicians on problems of mutual interest. He gathered ideas for both his own research and for the future summer research projects with students.

Emily Moore has been working in two areas of combinatorics and algebra -- graph coloring problems, and difference sets -- and has two recent publications in these areas: "Extending Graph Colorings", written with Mike Albertson, appeared in the Journal of Combinatorial Theory, B, 77 (1999) 83-95; and "Looking for Difference

Sets in $D_{2p} \times Z_q^{"}$, written with student Amanda Walker, will appear in the Journal of Combinatorial Design, 7 (1999). She also worked with three students this summer on graph coloring problems.

Tom Moore continued as chair of the American Statistical Association's Association Review Group (ARG) for advising the NCTM's Standard's 2000 committee. The first draft of the Standards appeared in November of 1999 and ASA's ARG provided a review of that draft. (All of the ASA ARG's contributions to NCTM can be found on the web at: http://www.stat.ncsu.edu/stated/nctm.html.) He continued his work as an associate editor of The American Statistician and the newsletter of Section on Statistical Education of ASA.

John Stone spent the second half of his 1998-1999 sabbatical leave at Rice University, as the guest of the Programming Languages Team in the Department of Computer Science. He is writing a textbook on algorithms and functional programming. He has also resumed the position of system administrator for the department's local-area network.

Henry Walker continues to be committed to projects related to computer science education. Currently, he serves as Secretary/Treasurer of SIGCSE, as Program Chair for SIGCSE 2000, as Symposium Chair for SIGCSE 2001, as SIGCSE Representative to the newly formed Ad Hoc Advisory Committee for AP CS, as a college representative to the Iowa Advanced Placement Advisory Committee, as Co-PI for an NSF grant to 5 Iowa schools for Preparing Future Faculty, as a member of the Liberal Arts Computer Science Consortium, as a reader of the AP CS examination, and as a consultant to the College Board. He continues to write a regular column for the "Classroom Issues" section, and last year, he helped resurrect the Iowa Undergraduate Computer Science Consortium. This past summer he worked with two students on two projects: a study of the variability of referee ratings of papers and a neural network approach for placing incoming students in mathematics and computer science courses.

Iowa State University Department of Mathematics

Stephen Willson swillson@iastate.edu

Two faculty received notable honors last year: Howard Levine was named Distinguished Professor. Bill Rudolph received the Lifetime Achievement Award from the Iowa Council of Teachers of Mathematics at the NCTM regional meeting. Congratulations to Howard and Bill.

Three faculty have recently been promoted. Brian Keller and Timo Seppalainen were promoted to Associate Professor with tenure, and Qiang Du was promoted to Full Professor.

Bill Rudolph has retired. Bryan Cain is on Faculty Improvement Leave for the academic year.



Domenico D'Alessandro is a new assistant professor in control theory. He received Ph.D.'s from University of California at Santa Barbara and also from Universita 'degli Studi di Pavoda, Italy. Oleg Emanouilov is a new assistant professor in partial differential equations and control theory. He received his Ph.D. from Moscow State University.

The department is experimenting with methods of teaching calculus. Both Calculus I and Calculus II are currently being taught in a variety of formats. Some sections have large lectures plus recitation, and some sections have small classes only. One section of Calculus I has only large lectures with no recitations. We hope to compare the different formats for their effectiveness in teaching.

The department has four faculty searches under way. These searches are for top quality researchers in (1) computational molecular biology/bioinformatics; (2) numerical analysis/computational mathematics; (3) discrete mathematics; and (4) applied mathematics.

Iowa State University Department of Statistics

Dean Isaacson Dli@iastate.edu

There are approximately 130 graduate students in statistics at ISU at present; in addition a few employees at General Motors, 3M and at Mayo Clinic are in the distance education program offered by ISU toward the M.S. degree in Statistics.

This year lowa State University honored five statistics faculty members. Wayne A. Fuller received the Distinguished Achievement Citation from the Alumni Association's annual Honor and Awards Ceremony. This award is given to an alumnus for extraordinary achievements and preeminent contributions to agriculture, arts, business, education industry, professions, public service social welfare, science or other endeavors. It was cited that Dr. Fuller is one of the most highly sought statistical experts in America.

At its 1999 Spring Convocation and Awards Ceremony, two faculty members were recognized for their work with the university. Ken Koehler was promoted to University Professor for his outstanding contributions to research and service to the University through consulting and graduate education. Dianne Cook received the Outstanding Achievement in Research Award. During her five years at ISU, Dr. Cook has achieved national and international recognition for the innovation and quality of her research, especially in the area of statistical graphics.

The College of Liberal Arts and Sciences (LAS) at Iowa State University recognized two faculty members this past year. H. A. David, former head and director of the Department and Statistical Laboratory, received the Distinguished Service Award. This award is given to alumni, staff and friends for outstanding service or academic contribution that furthers the educational mission of the College of Liberal Arts and Sciences. Yasuo Amemiya received the LAS Award for Outstanding Teaching. It was noted by one of his past graduate students that "some professors are excellent

lecturers, while others are good advisors, and some excel in helping students oneon-one. Dr. Amemiya stands out as a great example of all three of these aspects of teaching.

Other awards include:

Former student Jennifer Schumi's paper "Do Bullets have Fingerprints: Preliminary Graphics Partitioning by Trace Element Concentration for Bullet Fragment Data' was selected as a winner of the American Statistical Association Section on Statistical Graphics' 1999 Student Paper competition.

Bill Meeker and co-authors have won the 1999 Youden Award (best expository paper in Technometrics in 1998). Also, Wiley Interscience nominated Bill Meeker and co-author Luis Escobar's book *Statistical Methods for Reliability Data* for the Association of American Publishers 1998 PSP (Professional & Scholarly Publishing) Awards. Awards were given in 32 different subject categories. Meeker's book won in the category of General Engineering.

At the 15th Annual Meeting of the American Statistical Association in August 1998, Hal A. Stern was named an ASA Fellow for his excellence in research related by Bayesian methods and their applications; for contributions to the application of statistical methods to sports and for excellence in teaching of statistics at all levels.

At the August 1999 Joint Meetings of the American Statistical Association, Alicia L. Carriquiry was named a Fellow of the American Statistical Association. Dr. Carriquiry was recognized for service to the profession in the North and South Americas; for innovative applications of statistical methodology in the analysis of dietary intake data; and for collaborative research. In addition, student Jae-Kwang Kim received the Bryant Scholarship Award. This award is given to a graduate student in survey statistics to help support the student's graduate education. Criteria include the potential to contribute to survey statistics, applied experience in survey statistics, and the student's performance in graduate school.

Last year our Statistics Graduate Club, The Stat-ers, organized a team and participated in the Annual Cancer Run. This team, which included students, faculty and staff, raised over \$1200 for charity.

Luther College

Ruth Berger bergerr@luther.edu

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Ruth Berger presented a talk: "Poincare' Draw, a sketchpad for Non-Euclidean Geometry" at the Spring meeting of the Iowa section of MAA. She is also involved in the nationwide Project Kaleidoscope (PKAL).

Richard Bernatz has returned from a year of directing Luther's Nottingham Study Abroad Program in England.



CALL FOR NOMINATIONS FOR 2000 IOWA SECTION AWARD FOR DISTINGUISHED COLLEGE OR UNIVERSITY TEACHING OF MATHEMATICS

Nominations for the ninth (2000) 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 2000 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 awardees, each of whom will be honored at the national MAA meeting in January 2001 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 liaisons 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.

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* "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 Mark Johnson Secretary, Iowa Section Central College Pella, IA 50219 so as to be received no later than January 1, 2000.

Nominations for someone from another Section should be sent to the Secretary of the nominee's section.

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 enlarge to 8.5 x 11 and type a	ll information)		
Name of Nominee (first name first)		·	
College or University Affiliation			<u></u>
College or University Address			
City	State	Zip	
Nominee's number of years of teaching ex	perience in a ma	athematical science	

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Has the nominee taught at least half time in a mathematical science during the current

academic year or during the previous year if on approved leave or sabbatical?

In the space below, please briefly describe the unusual personal and professional qualities of the nominee that contribute to his or her extraordinary teaching success.

Name of nominator (first name first)		
Address of nominator		
Telephone	Email	-
Nominator's Signature		

Evidence of Extraordinary Success in Teaching

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A nomination for this award should consist only of the materials requested below and should not include any other materials such as curricula vitae or other items. Please prepare all application materials on one side of 8.5×11 inch paper, with a type size no smaller than 12 points (pica).

A completed application should contain the following items:

- **Nomination Form:** The complete Nomination Form should form the first page of the application.
- Narrative: Please describe the nominee's extraordinary success in teaching by providing a narrative of the nominee's background, experience, teaching style, special contributions, other teaching awards, and any additional evidence of the nominee's unusual achievements in teaching. Please limit this portion to no more than five double spaced pages.
- Additional Documentation: Please submit no more than three pages of evidence to document the nominee's extraordinary teaching success. This documentation will vary greatly from institution to institution by may include summaries of peer or student evaluations, comments on teaching, possible increases in number of undergraduate or graduate degrees given in mathematics (with clear evidence of the nominee's substantial responsibility for them), possible student successes in mathematical competitions (with clear evidence of the nominee's substantial responsibility for them), etc.

Nominators should bear in mind that the National Selection Committee might view a nomination more positively if it is accompanied not just by carefully chosen testimonials from a few selected students and faculty, though they are, of course, welcome, but also by some unfiltered input that is more representative of the whole spectrum of opinion among students and faculty about the nominee.

• Letters of Recommendation: Please include no more than five letters of recommendation of no more than one page each, as follows:

-- Two letters from the nominee's present or former students.

-- Two letters from the nominee's colleagues (one of whom could be the department chair).

-- One additional letter from anyone qualified to comment on the nominee's extraordinary teaching success.

Reginald Laursen and the Luther College Math Club were in the news for developing the design for the Maize Maze near Elgin, Iowa. The design was based on the mound shapes of Effigy Mounds National Monument, which this year celebrated its 50 year anniversary.

Alan Macdonald presented a paper "Elementary construction of the geometric algebra" at The Fifth International Conference on Clifford Algebras and their Applications in Mathematical Physics in Mexico in June. He coauthored the paper: "The form of magnetic work in a fundamental thermodynamic equation for a paramagnet", by Barrett and Macdonald, American Journal of Physics 63, 613-615 (1999).

CALCULUS REFORM: After many years of using Ostebee/Zorn, last year we used the Harvard Project materials (Hughes-Hallett, et al.). We had such a revolt from some members of the department that we changed after one year to Finney/Demana/Waits/Kennedy: Calculus 2nd ed. We have not found the ideal text yet.

STUDENT DATA: We graduated 2 math/statistic majors, 22 math majors and 16 computer science majors of which 6 were joint. We also graduated 16 math minors.

Further information about our department and its programs can be obtained from our new web page which will be operational shortly. It will be accessible through the Luther College web site http://www.luther.edu/dept/math.htm

Maharishi University of Management

Catherine Gorini cgorini@mum.edu

After several years of dormancy, our Math Club is coming back to life. We are having lectures by faculty (and others) every Monday evening for an hour. Average attendance is 7, only some of whom are math majors. Topics have included Paradoxes of Infinity, Divergent Series, Industrial-Grade Primes, and Connectedness.

The Core Plus Mathematics Project has received recognition as Exemplary by the US Department of Education. Eric Hart is a member of the project.

Our new first year Natural Law Seminars in mathematics are a big success. David Streid taught an interdisciplinary course entitled Infinity. He explored mathematical concepts of infinity and had quest lecturers from art, music, and literature. Cathy Gorini is just finishing a course entitled Numbers, were topics ranged from primes to the RSA crypto system to primality testing.

Arthur Bichler, a 1998 grad, is working for the department this year as a teaching assistant and will be going to graduate school next year. He has been a big help with grading, tutoring, and our computers.

Mount Mercy College

Kent Knopp krknopp@mmc.mtmercy.edu

Mount Mercy College graduated six mathematics students last spring and thirty to forty computer science students. The new CIS major (focussing on network management) is growing, especially since we received a \$50,000 grant for a networking lab. The math vacancy caused by Danny Lau's departure has finally been filled; Dr. Hok Kim comes to us with six years teaching experience on the east coast. Her field is differential equations.

As I write this, we are gearing up for our second annual high school math contest. Last year's brought 139 students to campus; it looks like this year will be about the same. Finally, two of our majors have started a math club, which is looking into becoming an MAA student chapter.

Northwestern College

Kim Jongerius kimj@nwciowa.edu

This year Jeff Boersema has joined our department, replacing Owen Byer. (Owen took a job at Eastern Mennonite to be closer to his family and religious roots.) Jeff received his Ph.D. in mathematics (noncommutative topology) from the University of Oregon in June. Last spring, Kim Jongerius received tenure and was promoted to Associate Professor of Mathematics.

Currently we have 34 majors and about 12 minors. We have recently revamped our curriculum primarily to add a course in logic and axiomatics and ease the transition to upper-level courses.

Simpson College

M. E. "Murphy" Waggoner waggoner@storm.simpson.edu

In 1999 Simpson awarded 13 Bachelor of Arts degrees in Mathematics, 8 in Computer Science and 12 in Computer Information Systems. One of our mathematics students went on to graduate school at the University of Iowa. Each of our departments is holding steady at four members, but Barbara Nostrand in the Computer Science Department has been replaced by Lydia Sinapova beginning this fall.

We were very happy about our results in the Mathematical Contest in Modeling(MCM) last year. Four teams of students competed in the MCM in Spring 1999 and three of the teams received an honorable mention. The faculty advisors for the MCM last year were Murphy Waggoner and Randy Bower.

Bruce Sloan will teach a History of Mathematics course in spring of 2000. This will be the first time we have offered such a course at Simpson. Bruce developed this course through the work he did at the Institute in the History of Mathematics and Its





Uses in Teaching at the Catholic University of America. The Institute is sponsored by the MAA and funded by the NSF.

During his sabbatical last spring, Rick Spellerberg worked with Dr. D. D. Anderson and Dr. E. W. Johnson from the University of Iowa and wrote "Sublattices of Regular Elements" which has been submitted for publication in Periodica Mathematica Hungaria.

With the help of a grant from the NSF we have developed Maple laboratory assignments for Multivariable Calculus and Differential Equations. These labs can be found at http://www.simpson.edu/~math/labs.

University of Iowa Department of Mathematics

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The Department of Mathematics undergraduate program is growing, with approximately 110 majors. Our undergraduate research program is also growing with 12 students working on projects with faculty in areas such as operator theory, group theory, curriculum development and number theory. Interest in our "Program C" major is strong This major is designed to meet the needs of students who want a degree in mathematics with a clear specialization in some area of application. The key is that certain courses in the area of specialization are counted towards the Mathematics degree. Students can focus on areas for which programs have been approved, such as Optimal Business Decision Making, Economics, Physics, Biomathematics and others, or they can propose new ones. Program C graduates do very well in the job market.

We have two graduate programs with a total of 90 students studying for MS and Ph.D. degrees. Of this total 25 students are in the Applied Mathematical and Computational Sciences Ph.D. program. Students in this interdisciplinary program build a strong foundation in theoretical and applied mathematics but also do work in other areas. Some of the current students in the program are writing dissertations in the areas of stochastic optimization in finance, atmospheric chemical models, optimal protein modeling, and image compression. Our graduate students come from lowa and surrounding states but also from California, Texas and Georgia among others. Our foreign graduate students come from around the world with the most students from Korea, China and Romania. Last year 5 students received their PhDs. Two of these students took assistant professor jobs (University of Puerto Rico and Mercer University) and three are working in private industry (Quantum Leap, Sprint PCS, D.P. Associates) in jobs related to their degree work.

After a few years of double digit PhDs our numbers are down but they should be soon be back up. Our entering class has 20 students including 8 women and 3 minority US citizens from groups under represented in mathematics. Currently 32% of our graduate students are women and 20% are US minorities from under represented groups. Both figures are above the national average and the latter figure is, to our knowledge, the highest in the country. The Department was recently awarded the first ever Catalyst Award by the University for our successes

with minority students. David Manderscheid will talk about these successes in the Special Session on Mathematics and Education Reform at the Winter meetings in Washington DC. He will also talk in the Special Session on Innovative Training Programs for Teaching Assistants.

We have been reaching out to high schools. For the past three years Walter Seaman has, with sponsorship from the GTE corporation and the University of lowa, worked with a dozen high school students in a residential science immersion program on campus. This was also the third year that we hosted the UI Mathematics Competition for High School Students. The competition consists of four rounds: team, sprint, target and relay. For further information on this event, please go to http://www.math.uiowa.edu/events.htm

Keith Stroyan recently received a "proof of concept" grant from NSF to develop a sample of an interactive textbook in multivariable calculus. Preliminary materials are available as Mathematica NoteBooks at http://www.math.uiowa.edu/~stroyan/multicalc.htm

The U.S. Department of Education recently gave its highest rating, "Exemplary", to Contemporary Mathematics in Context (CMIC), the high school mathematics curriculum developed with NSF support by the Core-Plus Mathematics Project, only 5 of 61 programs reviewed received this rating, Hal Schoen, Math and Math Ed, is co-Director of Core-Plus a multi-site curriculum development and evaluation project. Others on the development team from lowa are Eric Hart of Maharishi University of Management and Brian Keller of Iowa State University. The CMIC curriculum is used in about 25 lowa high schools and several hundred schools nationwide.

Douglas Grows, Math Ed, is project director for a recently awarded NSF grant to study how technology can be used to improve student learning. The project will develop instructional materials to assist students in grades 5-8 learn mathematics by using tools such as spreadsheets, graphing software and the internet. Field testing will be done in eastern lowa and across the US.

November 12 and 13 the Department is hosting Groupoid Fest '99. This conference is being organized by Paul Muhly.

In January Pierre Cartier of the IHES will visit the University of Iowa as an Ida Beam Lecturer. He will give five lectures as follows:

_Tuesday Jan 25, 2000, 7 PM, W151 PBB

Lecture for a general audience: "Mathematics: Queen or servant of Science? From Euclid to Bourbaki"

_Monday Jan.24 and Wed. Jan.26, 3:30PM, 301 VAN

Physics lectures: "Functional integration, the dream of Feynman made real" Thursday Jan.27 and Friday 28, 3:30 PM, 118 MLH

Mathematics lectures: "Hopf algebras, a versatile tool in mathematics".

For more information about what is going at lowa, including our seminar schedule and information on our distinguished visitor series, please see our web page: http://www.math.uiowa.edu/



University of Iowa Department of Statistics and Actuarial Science

James Broffitt james-broffit@uiowa.edu

We are delighted to welcome two new faculty members. Grace Chan joined us in January. Grace received her Ph.D. in Statistics (1995) from the Australian National University, Australia. Grace's previous faculty appointment was at the University of New South Wales, Australia. Her research interests are stochastic simulation and modeling fractal surfaces. John Geweke joined the department faculty this fall. He is the first holder of the McGregor Chair in Economic Theory at the University of lowa, and splits his time equally as Professor in the Department of Economics and the Department of Statistics and Actuarial Science. John received his Ph.D. in economics from the University of Minnesota in 1975. He has held faculty positions at the University of Wisconsin, at Duke University where he was the founding Director of the Institute of Statistics and Decision Sciences, and most recently at the University of Minnesota. John's research interests include Bayesian statistics and econometrics, and time series analysis.

Prof. B.L.S. Prakasa Rao is a visiting professor for the academic year 1999-2000. He is from the Indian Statistical Institute, New Delhi where he holds the position of Distinguished Scientist. Prakasa earned his Ph.D. in Statistics from Michigan State University in 1966. He is a Fellow of the Institute of Mathematical Statistics, Elected Member of the International Statistical Institute, and a Fellow of the Indian National Science Academy. He has won several awards including the Bhatnagar award from the Government of India in 1982 for his distinctive contributions to Mathematical Science. Professor Rao published two books in the summer of 1999. These are: *Semimartingales and Their Statistical Inference*, Chapman & Hall, London and CRC Press, Boca Raton, Florida; and *Statistical Inference for Diffusion Type Processes*, Arnold, London and Oxford University Press, New York.

Departmental promotions this year include: Jian Huang to Associate Professor with tenure; Associate Professor Sheldon Lin awarded tenure; Kung-Sik Chan and Dale Zimmerman to Full Professor.

Bob Hogg spent two weeks in May at the American Statistical Association in Alexandria, VA working on ways to improve undergraduate statistical education. As a result of his (and others) efforts, there will be a two-day workshop in late April concerning undergraduate programs in statistics. There will also be a one-day symposium on undergraduate statistical education just before the Joint statistics Meeting in Indianapolis in August 2000.

In addition Hogg is working with Elliot Tanis on the 6th Edition of their book *Probability and Statistical Inference*. It could be out as early as next spring.

This past summer, Elias Shiu was a visiting professor of finance at the University of Ulm, Germany. He and Hans Gerber of the University of Lausanne were given the 1999 Edward A. Lew Award by the Society of Actuaries for their work on dynamic asset allocation and optimal investment strategies. Also, their 1994 paper "Option Pricing by Esscher Transforms" in the *Transactions of the Society of Actuaries* is one of six papers reprinted in the *Investment Section Monograph* as part of Society of Actuaries' celebration of its fiftieth anniversary.

Russ Lenth will be on developmental leave during the spring semester. In January, he will speak at a conference at Ecole Mohammedia d'Ingenieurs in Rabat. Morocco on ways that faculty can facilitate student internships with industry. The conference was organized by his student, Imad Benjelloun, motivated by the success of his own internship experience. Russ will spend the remainder of the leave writing a monograph on sample-size issues, and further developing some associated Java applets.

Skip Woolson received the 1999 Regents Award for Faculty Excellence. He was appointed Head of the Department of Biostatistics, College of Public Health, University of Iowa. Skip is the Chair-Elect of the Council on Sections of the American Statistical Association, and he was appointed to the FDA Antiviral Advisory Committee for 1999-2001.

We had a banner year for graduating Ph.D. students. Seven received their degrees during the past year.

After a two-year reign as Statistics College Bowl Champs, our 1999 team lost to the eventual winner at the Joint Statistical Meeting in Baltimore.

University of Northern Iowa

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After many valuable and productive years at UNI Profesor John Cross retired last spring. He served 35 years in the University. John had a major impact on the implementation of calculator use in the classroom. His knowledge is already sorely missed.

We have added five new professors to our Mathematics Department. Paul Gray received his Ph.D. from Michigan State in 1996. His major area of interest is Numerical Analysis. His most recent position was assistant professor at Emory University in Atlanta.

Doug Shaw received his Ph.D. from the University of Michigan in 1995. His major area of interest is Combinatorics. His most recent position was assistant professor at the University of Minnesota.

Michael Prophet received his Ph.D. from the University of California, Riverside in 1993. His major area of interest is Functional Analysis and Approximation Theory. His most recent position was assistant professor at Murray State University.

Rob Paige received his Ph.D. from Colorado State University in 1999. His major area of interest is Saddlepoint Methods. His most recent position was research assistant at Colorado State.

Adrienne Stanley received her Ph.D. from the University of Kansas in 1997. Her major area of interest is Set Theoretic Topology. Her most recent position was research assistant professor at Purdue University.





Colloquium Schedule:

- September 22nd Dr. Doug Shaw "Is this just hubris?" A new approach to the Collatz (3n+1) conjecture.
- September 29th Dr. Michael Prophet Constrained Optimal Location
- October 11th Dr. Sharon Frechette, Wellesley College The Congruent Number Problem
- October 13th Jacek Wesolowski Warsaw University of Technology,Poland Exceeding a random threshold
- October 27th Dr. Sarah-Marie Belcastro Hypersurfaces in 3-dim Toric Varieties

November 10th Dr. Min Lee

November 17th Dr. Al Hibbard, Central College Using Mathematica to Explore Abstract Algebra

December 8th Dr. Larry Leutzinger

Basic Facts has made me what I am today. -- The continuing saga of research on how young children learn thinking strategies for the first time.

Micheal Prohpet is involved in :

1. October 8-10; Organized a Special Session on Wavelets and Approximation Theory at the Central Meeting of the AMS in Austin,TX.

2. Jan. 20, 2000; Moderator for Panel Discussion: Finding your Second Job at the Joint Meetings of the AMS/MAA in Washington, DC

Paul Gray Continued work on NSF grant ACI-9872167, "Metacomputing with IceT" He also will be attending SuperComputing 99 in Portland OR, Nov. 14 - 17 to give a talk and to demonstrate the IceT software at an exhibitor's booth.

Bonnie Litwiller has been appointed editor of the 2002 yearbook for NCTM . The title is Ratio, Proportions, and Proportional Reasoning.

Last spring members of KME went to Florida Southern College in Lakeland Florida. The presenters were: Mary Noga, Susan Shontz and Gary Spieler. Susan Shontz won an award for one of the best presentations. She was awarded the latest version of Maple Software.

Just recent to our department is a Chapter of America Counts. This is a federally funded tutoring program to help the elementary and middle school students develop mathematical skills.

UNI is also participating in a professional growth effort combining the resources of the Iowa Department of Educatiion, UNI, UI, ISU, Drake, Upper Iowa, and teams of teachers, principals, and community members as well as each of their AEA mathematics consultants, from eighteen school districts across lowa. This is anticipated to be a three-year project. The first will focus on rational numbers with an emphasis on using technology to help students learn about rational numbers.

John Longnecker received Dean's award for General Education Teaching.

Michael Millar received Iowa Section of the Mathematical of America (MAA) Distinguished teaching award.

Syed Kirmani received the University of Northern Iowa Distinguished Scholar Award for 1999-2000. He is currently on leave for the fall semester.

There were 33 students that received their B.A. in Mathematics. There were 20 students that received Masters in Mathematics(17 of these were Middle School degrees).

Wartburg College

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Our department is a combined Mathematics, Computer Science, and Physics department. For this reason we are glad to report that Charles Figura is a new physics member in our department. He earned his Ph.D. at Virginia Polytechnic Institute in the area of non-linear optics.

Josef Breutzmann is currently on sabbatical and is spending the bulk of his time working with his thesis advisor, Jack Lutz, at Iowa State University. They recently had their article "Equivalence of Measures of Complexity Classes" published in the

SIAM Journal on Computing.

John Zelle, who rejoined our department last year, presented a paper at the Midwest Computer Conference. The paper entitled "Python as a First Language" services as a guide for our recent decision to do exactly what the paper recommended, i.e., use Python as the programming in our CS1 class. He used it with a section last May and now again this fall. I am sure we will have more thoughts on its success as our students continue through our CS2.

Mariah Birgen presented at the Analysis Seminar at UC San Diego last November. At the San Antonio Joint meetings for Project NExT, she, with her husband Brian Birgen, helped organized a panel on "Balancing Personal and Professional Lives". Mariah was an invited speaker at the Illinois Section meeting where she spoke on the necessity for all faculty to have awareness of cultural differences. She spent much of last summer constructing new Maple labs for our calculus sequence and would be interested if anyone would like to use them.



Last May Term, Lynn Olson traveled with 20 mathematics and science students through Germany as part of his class "The Historical roots of Mathematics and Physics in Germany." His wife (as chief accountant) and fellow department member Augie Waltmann accompanied him. Among the many sites visited were the Mercator Museum in Duisberg, the Mathematics Institute and Gauss' Cbservatory in Goettingen, the Deutches Museum in Munich and the IBM Museum in Stuttgart. An added highlight was the meeting of the Wartburg College Choir in Eisenach, the Wartburg Castle city. Olson may do this again in the spring of 2001 so if you have ideas of important places for his class to visit please send him a note in this regard.

We have three active students groups in the department. Missing Bytes is a student chapter of ACM while Psi Phi is a local physics club. The mathematics club is a chapter of KME, the national mathematics honor society.

This past year we had forty-one students graduate with majors within the department. Eighteen were in mathematics or mathematics education, sixteen were in computer science or computer information systems and 13 were in physics. Interestingly we had eleven with mathematics education majors.

Events at the University of Dubuque

On March 19, 1999, the Board of Trustees announced its *Plan for Transformation*, a plan developed without faculty involvement. Under the *Plan*, the University would eliminate 23 of its 37 majors/programs and also would terminate the services of several faculty and staff. The Board unanimously approved the *Plan* on April 28 despite recommendations from two faculty committees to not implement the *Plan* as it had been presented. Internal discussions of the *Plan* focused on the financial situation at UD and that the *Plan* would provide financial savings due to budget "adjustments" (reductions) in programs, salaries, athletics, tuition discounts, and operating budgets. External discussion of the *Plan* focused on the transformation of the University from a liberal arts institution into a Professional University with a liberal arts foundation. Also, the *Plan* would help the University achieve the goals of its new Mission, Vision, and Action Plan.

On Wednesday, May 12, just three days before graduation, President Bullock, accompanied by an attorney and a security guard, told several faculty members who chose to meet with him that their contracts would be terminated. On Thursday, May 13, the Human Resources Director, accompanied by security, hand-delivered termination notices to **fourteen** faculty members in their offices, classrooms, or homes. These fourteen represented one-third of UD's full-time faculty for undergraduate instruction!

The faculty members who received the termination notices were: all three members of the History/Political Science Department, both members of the Math Department, the sole members of the Departments of Chemistry, Music, Foreign Languages, and International Studies, and five of the seven members of the Department of Business and Economics. Ten of these faculty members were tenured and four are nontenured. Eleven of the fourteen hold Ph.D. degrees.

The fourteen faculty members have a total of **227 years** of service to the University of Dubuque. Of the ten tenured faculty members, nine of them have served UD for at least 17 years and three have served UD for at least 29 years! All of the termination notices included a 12-month advance notification.

Two of the fourteen have found other employment beginning this fall. In July, UD offered some of the fourteen faculty members a "Faculty Transition Agreement" offered some of the fourteen faculty members a "Faculty Transition Agreement" under which the faculty member would voluntarily agree to sever ties with UD. Three of the fourteen accepted the terms of this Agreement and will not return to Three of the fourteen accepted the terms of the fall term was to begin, five faculty UD. On August 11, just two weeks before the fall term was to begin, five faculty members, including the two members of the Math Department, were given notice to clean out their offices by August 20. The University informed those faculty members that they would be performing no duties during the fall semester and that it was unlikely that they would perform any duties in the spring. Despite this, the University is honoring its contractual obligations to these five. Only four of the University is the received the termination notices will be teaching at UD during original fourteen who received the termination notices will be teaching at UD during the tage.

the 1999-2000 academic year. A few of the courses that the terminated faculty members would have taught have been canceled. Part-time instructors are teaching many of the remaining courses these faculty members would have taught. For example, the University hired three additional part-time instructors to teach the mathematics courses scheduled for the fall at the same time it relieved the two tenured members of the Math Department

of all duties. It is interesting to note that all but one of the fourteen faculty members receiving termination notices had signed on to actively defend themselves in the recent lawsuit filed by the UD Board of Trustees. The one member who did not sign on for legal representation was not employed at UD when the lawsuit first began. The Board of Trustees took the faculty to court in March 1998 asking the court to Board of Trustees took the faculty to court in March 1998 asking the court to binding contract. The Handbook an "administrative policy" rather than a legally treated by both the faculty and the Board as a contract that could only be changed by mutual agreement. The judge ruled in June 1999 that indeed the Faculty Handbook is a contract yet the Board of Trustees can amend the Handbook without the approval of the Faculty Assembly (the faculty as a whole).

Julia K. McDonald jmcdonald_udbq@hotmail.com

Section Project NExT

The Iowa Section is currently making plans to start a sectional version of Project NExT for new faculty. This might include special sessions either during or just before the spring section meetings. These sessions would be designed for and open to all (relatively) new faculty in the section.

Contact Mark Johnson at Central College (johnsonm@central.edu) if you would like to be involved or have ideas for speakers or session topics.

http://maa-ia.cornell-iowa.edu

For the latest news from the Iowa Section, check out the section's web pages. Please feel free to contact Russ Campbell (campbell@math.uni.edu) or Cal Van Niewaal (cvanniew@coe.edu) if you have any suggestions for improving the web site.