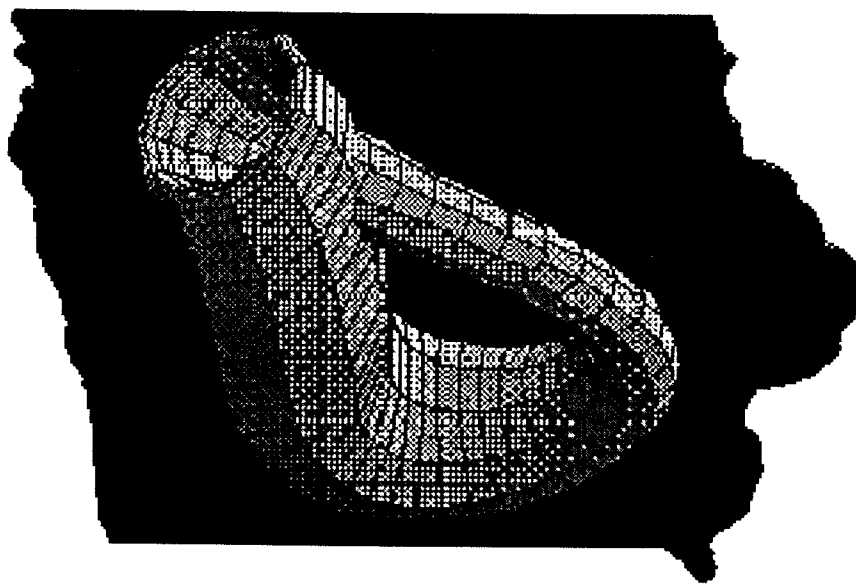


# Iowa Section Newsletter



**Fall 1997**

## Iowa Section -- Section Officer List

Chair:	Stephen J. Willson Dept. of Mathematics Iowa State University Ames, IA 50111-0001	swillson@iastate.edu Voice: 515-294-8142 FAX: 515-294-5454
Past-Chair:	Jim Freeman Department of Mathematics Cornell College 600 First Street West Mount Vernon, IA 52314-1098	freeman@cornell-iowa.edu Voice: 319-895-4393 FAX: 319-895-4492
Chair-Elect	Ruth Berger Department of Mathematics Luther College 700 College Drive Decorah, IA 52101-1043	bergerr@luther.edu Voice: 319-387-1174 FAX: 319-387-1088
AHSME Reg. Coord:	Robert M. Buckingham Heritage Way Lutheran Mutual Life Ins. Co. Waverly, IA 50677	
Student Chapter Coord:	Catherine Gorini Dept. of Mathematics Maharishi Univ. of Management 1000 North Fourth Street Fairfield, IA 52557	cgorini@mum.edu Voice: 515-472-1107 FAX: 515-472-1123
Newsletter Editor:	Cal Van Niewaal Dept. of Mathematical Sciences Coe College 1220 First Avenue NE Cedar Rapids, IA 52402-5092	cvanniew@coe.edu Voice: 319-399-8642 FAX: 319-399-8557
Public Info. Officer	R. B. Campbell Department of Mathematics Univ. of Northern Iowa Cedar Falls, IA 50614-0506	
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 CompSci Drake University 2507 University Ave Des Moines, IA 50311	Alexander.Kleiner@drake.edu Voice: 515-271-3041 FAX: 515-271-3977

# **Annual Meeting of Iowa Section**

at

Luther College  
Friday and Saturday  
April 17-18, 1998

Luther College invites you to the Spring meeting of the Iowa section of the MAA on April 17-18, 1998. Our featured speaker will be Roger Horn from the University of Utah, editor of the American Mathematics Monthly. I have promised him better weather this year! We will follow the usual two day schedule. Please let me know if you have specific program suggestions (bergerr@luther.edu).

A call for speakers will come out early next year. Please encourage your students to start thinking about the possibility of making a presentation. Our Math Club will arrange for your students to stay with Luther students on Friday night.

We are looking forward to seeing you next April.

*Ruth Berger*  
Chair-Elect

## **Iowa Section is Now Online**

The Iowa Section now has a web site. You will find the latest information from the Iowa Section at <http://maa-ia.cornell-iowa.edu>

Included is a list of the departmental liaisons for the state, information on the Iowa Collegiate Mathematics Competition, and, of course, an electronic version of this newsletter.

Thanks to Jim Freeman and Cornell College for offering to host the web site.

## Governor's Report

The 1997 Mathfest in Atlanta was an enjoyable experience made more memorable by the fact that it was put on by the Association alone. Look for the 1998 Mathfest in Toronto, next summer. It will be slightly earlier next year, July 16-18, and held in conjunction with SIAM's annual meeting.

Plans are moving ahead for the International Mathematics Olympiad to be held in the United States in 2001. The organizers plan to publicize it around the theme that mathematics can be fun for all people and to highlight, for the students and faculty from other parts of the world, the diversity of the United States.

In Atlanta, the Board of Governors approved the formation of a standing committee on the Status of the Profession. As this committee develops it will enable the Association to "...respond quickly to issues involving the profession." We can expect to hear more about this in the future.

Keep a watch on the new publications of the Association. There is a record number of new items in the pipeline, covering a broad spectrum of mathematics and its teaching. One of the recent additions to the MAA web page is a connection to the mathematics section of the Amazon.com book store on the web. This is a good place to start if you are looking for particular topic. Of course, browsers should remember that this can be an expensive hobby.

I will close with a few personal notes. Thanks to Jim Freeman, Steve Willson and Cal Van Niewaal for doing a nice job on the Iowa Section web page. As a board member, I am assigned to the Council on Competitions. This past summer, we received a report on the United States team's performance in Argentina. One of the team leaders is Elgin Johnston. He deserves our thanks for this demanding work and our congratulations for his part in the team's success. Also deserving of congratulations is a former section member, Anita Solow who was recently elected first vice-president of The Association.

*Alex Kleiner*

Iowa Section Governor

## Nominating Committee

Section Chair Steve Willson has appointed the Nominating Committee for the Iowa Section. The committee members are:

Greg Dotseth	Edward Hill	Alex Kleiner
Dept of Mathematics	Dept of Mathematics	Math and Comp Science
Univ of Northern Iowa	Cornell College	Drake University
Cedar Falls, IA 50613	Mt. Vernon, IA 52314	2507 University Avenue
		Des Moines, IA 50311

dotseth @math.uni.edu   hill@cornell-iowa.edu   Alexander.Kleiner@drake.edu

The first order of business for the committee will be to make nominations for the office of Governor, since Alex Kleiner's term expires in June 1998. Nominations are due in Washington no later than November 15, 1997. Members of the Iowa Section who would like to suggest possible nominees should contact one of the members of the committee.

Later this year the committee will also be seeking nominees for Chair-Elect of the section.

## Iowa Collegiate Mathematics Competition

The Fourth Annual Iowa Collegiate Mathematics Competition will be held on Saturday, April 4, 1998 at Iowa State University. Contest Chair Elgin Johnston promises an exciting event.

The teams of three undergraduate students from around Iowa will work together for 3 hours, with the goal being to prepare written solutions to as many problems as possible. The contest results will be announced at the Iowa Section meeting at Luther. Details concerning time and registration procedures will be available after the first of the year.

If you would like to help with scoring the solutions to the contest problems or are willing to assist with the contest in some other way, please contact Elgin. His e-mail address is ehjohnst@iastate.edu.

**CALL FOR NOMINATIONS FOR  
1998 IOWA SECTION AWARD FOR DISTINGUISHED  
COLLEGE OR UNIVERSITY TEACHING  
OF MATHEMATICS**

Nominations for the seventh (1998) 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 1998 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 1999 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 especially 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, 1998.

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

**Previous Award Recipients:**

1992 Robert Hogg, University of Iowa

1995 Elgin Johnston, Iowa State University

1996 Charles Lindsay, Coe College

**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 contribution, 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 of teaching, increases in numbers of mathematics majors or Ph.D. candidates, or student successes in mathematical competitions.

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

Central College

Mark Johnson  
johnsonm@central.edu

## Faculty News:

Agnes Andreassian participated in the NSF Chautauqua course on Collaborative Learning in Calculus and Precalculus at California State Polytechnic in March, and the NSF Calculus Reform Workshop at Macalester College in July.

Robert Franks was part of a team from Central to attend a March workshop on undergraduate research at the University of North Carolina at Asheville, sponsored by the Council for Undergraduate Research (CUR). He was also a member of the Central team at the Teaching and Learning Round Table (TLTR) conference held on Central's campus June 10 & 11, and jointly sponsored by the Iowa Resource Education Network (IREN) and the Association for the Advancement of Higher Education (AAHE).

Lee Graber has announced that he will retire at the end of this academic year.

Al Hibbard attended a week-long STATS (Statistical Thinking with Active Teaching Strategies) NSF workshop at Gustavus in June. He then presented materials related to his "Calculus Explorations using Mathematica" at the Sixth Conference on the Teaching of Mathematics in Milwaukee. In July he attended a follow-up to last year's Exploring Undergraduate Algebra & Geometry With Technology NSF workshop at DePauw University. Between workshops, Al worked on his "Exploring Abstract Algebra with Mathematica" project, which will be published by Springer-Verlag.

Tom Iverson was named interim president of Central College last January.

Mark Johnson attended the Twenty-First Real Analysis Summer Symposium in Chattanooga in June and the Atlanta MathFest in August. He gave a talk on "Reading and Writing in a Liberal Arts Math Course" at the MathFest and took the two-day short course in epidemiology modeling. Near the end of the summer, Mark began work as a contributing author in set theory, topology and logic for the Comprehensive Dictionary of Mathematics, to be published by CRC Press.

Tyrel Marak joined the department as a Visiting Assistant Professor in Math, while Tom is president. Ty graduated from Colorado State in May, with a degree in non-abelian cohomology.

Don Meyer attended the NSF Chautauqua course on the 1990 Census at the University of Dayton in April.

#### Student News:

The class of '97 included 11 students majoring in mathematics and/or computer science. Career choices varied from computer programming to graduate school in applied math or statistics to trying out for the Chicago Bears. Most of our continuing students had internships over the summer.

Last spring, Rochelle Rucker and Michael Thompson were given the Henry W. Pietsenpol Award as the department's outstanding junior majors.

#### Math Awareness Week:

Joe Gallian came to Central and gave a campus-wide Honors Convocation on codes. Mark Johnson proposed a "Problem of the Day" each morning, and we had a couple of math film nights, showing "Stand and Deliver", "Donald in MathMagic Land" and "N is a Number".

#### Coe College

Cal VanNiewaal  
cvanniew@coe.edu

Charles Lindsay was appointed John F. Yothers Professor of Mathematics Emeritus in May 1997. Charles retired following a forty-year teaching career at Coe.

Calvin Van Niewaal was promoted to professor and appointed Professor of Computer Science and John F. Yothers Professor of Mathematics effective with the Fall 1997 semester.

A group of Kent Herron's former students honored him by endowing a professorship bearing his name. The gift was made with the stipulation that Kent hold the chair until his retirement. So Kent has been appointed W. Kent Herron Professor of Mathematics. Future appointments to the chair will be made to recognize faculty who, like Kent, have demonstrated a dedication to teaching both in and out of the classroom.

Terry Hostetler has been granted tenure.

Jon White has left Coe to pursue a Ph.D. in the History of Mathematics at the University of Oklahoma.

Seven (7) mathematics majors, fifteen (15) computer science majors, four (4)

mathematics minors and two (2) computer science minors were members of the class of 1997. Two of these students completed honors projects in computer science.

Gavin Cross is working with faculty in the biology, psychology and business administration departments to develop new interdisciplinary statistics courses.

#### **Cornell College**

James H. Freeman  
freeman@cornell-iowa.edu

Two big events have occurred this year in the mathematics department at Cornell. First, Ann and Scott Cannon are proud parents of a son, James Michael, born September 19, 1997. Congratulations can be sent to Ann by e-mail. (acannon@cornell-iowa.edu)

The other big event is that Ed Hill is NO longer using Anton for Linear Algebra. He has decided to switch to Otto Bretscher's "Linear Algebra With Applications."

Tony deLaubenfels is on sabbatical this fall.

#### **Grand View College**

Sergio Loch  
sloch@gvc.edu

Professor John Gertenrich attended The Summer Short Course Program for Math Teachers - Teaching Calculus with TI-92 at Concordia College, in Moorhead, MN.

Assistant Professor Sergio Loch attended a summer workshop on Teaching Calculus with Projects, by Don Small and Chris Arney at USMA and another one, Readings for Calculus - The Five MAA Volumes at Macalester College. He also participated in the Stats Workshop at Gustavus Adolphus College. This summer Professor Loch taught a short course in Numerical Analysis to graduate students at the University of Santa Catarina, Brazil.

Associate Professor Brian O'Donnell chaired the Pioneer Technology Task Force this past summer. This task force was established to investigate ways of implementing technology more effectively into the classroom using the \$300,000 Pioneer Technology Grant. Brian also worked for the Iowa Foundation for Medical Care this summer as a statistical consultant, completing a ten state project studying Carotid Endarterectomy Vascular Surgery procedures.

The NSF sponsored STATS Workshop at Gustavus Adolphus College this past summer was attended by Sergio Loch and Brian O'Donnell. As a result of this workshop the introductory statistics and the organizational statistics courses at GVC are becoming a much more activity based, exploring with Minitab software to present and reinforce basic concepts. Our Calculus course is using for the second year the calculus textbook by Ostebee/Zorn and also Calculus Explorations using Mathematica, by Al Hibbard. In our Abstract Algebra course this fall we are experimenting with the "Exploring Abstract Algebra with Mathematica" software developed by Al Hibbard and Ken Levasseur.

Grinnell College

Charles A. Jones  
jonesc@turing.math.grin.edu

The Department of Mathematics and Computer Science at Grinnell is delighted to welcome three new faculty this year. Our computer science faculty expanded this year, with the addition of Samuel Rebelsky to the department. Sam comes to our department from Dartmouth College. He has a Ph.D. in Computer Science from the University of Chicago and his professional interests include programming languages and hypermedia. Marc Chamberland comes to our department from a post-doc at McMaster University in Hamilton, Ontario. He has a Ph.D. in Applied Mathematics from the University of Waterloo and his professional interests include applied mathematics, differential equations, and dynamical systems. Scott Imig comes to our department from the University of Oregon, where he recently completed his Ph.D. in Mathematics. His professional interests include undergraduate research and commutative algebra.

Arnold Adelberg returned to Grinnell this fall after a year sabbatical spent doing research at the Centre for Number Theory Research in Sydney, Australia and at Wake Forest University. During his time away, he gave a talk at the 7th International Fibonacci Conference in Graz, Australia on "Newton Polygons of Bernoulli Polynomials". This talk will appear in the proceedings of the Conference. At the invitation of the editors, he submitted a paper "Arithmetic of Norlund Polynomials" to a special volume of Discrete Mathematics commemorating H. W. Gould. He also submitted a paper "2-adic Congruences of Norlund Numbers" to the Journal of Number Theory. He was invited to speak at several Australian Universities and also at the Conference of the Southeastern Number Theorists last Spring. He has joint work with Prof. F. W. Howard of Wake Forest University in progress.

Gene Herman is chair of the Department of Mathematics and Computer Science at Grinnell College. He was coeditor with Steve Leon and Richard Faulkenberry for "ATLAST Computer Exercises for Linear Algebra," which was published by Prentice-Hall last year. His current project is the Linear Algebra Modules Project

(i.e., LAMP), which has been supported by an NSF Course and Curriculum Development grant. He and three other mathematicians (two at the University of Washington and one at Seattle Central Community College) are developing an interactive linear algebra text using Maple. A draft version is available via the Web at <http://www.math.grin.edu/lamp/>

Charles Jepsen conducted research with two Grinnell students, Molly Dingel and Catherine Williams, during the summer of 1997. Both students worked on problems relating toequisum sets of six points in the plane.

Charlie Jones returned to Grinnell this fall after a one-year leave of absence. During the year, he worked as a property/casualty actuary and taught part-time at DePauw University. He is currently working on research involvingCostasArrays.

Emily Moore is on sabbatical at Mt. Holyoke College. She is working with Harriet Pollatsek on difference sets, and is attending colloquia on combinatorics and algebra in the fivecollege area.

Tom Moore is on sabbatical at Mt. Holyoke College. He is teaching and working with GeorgeCobb.

Anita Solow is Dean of Academic Affairs at DePauw University and has resigned from Grinnell College after being on a one-year leave of absence.

John Stone and Henry Walker developed a new, Scheme-based CS1 courses based on collaborative learning. All labs are available through the department's home page.

Henry Walker was re-elected as SIGCSE Secretary/Treasurer for another 2-year term. He completed a series of 2-day workshops for high school computing teachers, with funding from the Noyce Foundation. Over two years, 8 workshops were held in Iowa and Texas. Overall this project enrolled 252 registrants. He received funding from the Roy J. Carver Charitable Trust for a week-long summer workshop for high school computer science faculty, in addition to consulting in computer science for the College Board. As part of that work, he participated in a week-long workshop at Berkeley this past summer, with funding from ETS and the College Board. He completed work on an NSF grant, which focused on Formal Methods in the Undergraduate Curriculum. He participated in a Working Group on Collaborative Learning and Distance Learning for the Conference on Integrating Technology Into the Computer Science Curriculum. He also was involved in talks and other activities at various SIGCSE activities.

Royce Wolf conducted research with two Grinnell students, Chris Jones and Collis Rost, during the summer of 1997 and is currently working on an article containing the results. He is performing in Grinnell's production of Tom Stoppard's

"Arcadia" as the off-stage piano. He plans a solo piano recital for this spring. He intends to change his area of summer research from combinatorial group theory to knot theory.

Further information about the department and its programs is available at our home page, [www.math.grin.edu](http://www.math.grin.edu).

### **Hawkeye Community College**

Lorrie Stahl  
[lstahl@hawkeye.cc.ia.us](mailto:lstahl@hawkeye.cc.ia.us)

HCC has added a Pre-Computer Science concentration to the General Studies option for the Associate in Arts Degree. James Bohy joined the mathematics faculty this fall to develop the pre-computer science option. He holds a Bachelors and Masters Degree of Arts in Computer Science and is currently pursuing EdD in Curriculum and Instruction at the University of Northern Iowa. Previously, James was a computer science instructor at Clinton Community College, Iowa and Knoxville College in Tennessee. James often spends his summers working as a programmer or software engineer in the private sector for various companies, including Research Systems Corporation, V-Soft Communications, Northwestern Steel and Insight Industries Inc. Currently, James is involved in a research group with Dr. Eugene Wallingford, Dr. Philip East, and Dr. Mark Fienup of the UNI Department of Computer Science working on an intelligent tutoring system.

Lorrie S. Stahl joined our mathematics faculty fall semester, 1996. She attended the United States Military Academy at West Point, NY and holds a Bachelors and Masters Degree of Science in Mathematics from Tarleton State University, a part of the Texas A&M system. Previously, Lorrie was a mathematics instructor at Tarleton and a futures broker for Wasendorf & Son. During her rookie year at Hawkeye, Lorrie received a Hawkeye Innovations Grant for the project, Mathematics - A Laboratory Science, to fund the development of technologically based curriculum for the college algebra course.

Last fall, Karen Ernst, a mathematics faculty at Hawkeye, submitted a proposal for a mathematics laboratory. This summer, the construction of a mathematics laboratory was completed and is open for student use this fall. The lab contains 10 IBM PCs and 5 PowerMacs. The purpose of the lab is to provide a environment that is conducive to learning of mathematics in a setting that provides the students with the technological tools that aid in problem-solving. Students often use the mathematics lab as a place to do homework, since the instructor is accessible. Karen Ernst, Lorrie Stahl and James Bohy volunteer their "spare" time, allowing the laboratory to be open from 9:00 a.m. to 4:00 p.m. during the week.

Hawkeye Community College supports the professional development of faculty.

Last year, Lorrie and Karen attended the International Conference on Technology in Collegiate Mathematics (ICTCM), in Reno, Nevada and will be attending this year's ICTCM conference in Chicago. They attended the Fall '96 IMATYC Conference at Marshalltown Community College, where Dr. Brian Keller, Iowa State University, shared experiences and techniques using the TI-92 in calculus. In March, Lorrie Stahl, James Ralston, and Robert Mills attended the Conference on Teaching Mathematics to Undergraduates at University of Northern Iowa. In April, six of Hawkeye's mathematics faculty attended a 2-semester Ohio State calculus short course hosted by IMATYC at Kirkwood Community College on enhancing the teaching and learning of calculus with a CAS.

Hawkeye's mathematics faculty fall semester goal is to organize a student chapter of the MAA. Anyone with tips and information on going about this process, please contact Lorrie Stahl.

**Iowa State University**  
**Department of Mathematics**

**Stephen J. Willson**  
swillson@iastate.edu

Two assistant professors received special honors from ISU at its 1997 Spring Convocation. Brian Keller received the ISU Foundation Award for Early Achievement in Teaching. He received this award because of numerous activities in the reform of mathematics education. He has used "learning through discovery" methods in the classroom. He has organized numerous seminars and conferences on teaching and has been a leader in efforts such as the LEARN project. He has consulted for the Ames Community Schools and other school systems.

At that same convocation, Ralph Smith received the ISU Foundation Award for Early Achievement in Research. His work focuses on the modeling and control of "smart" materials with application to noise reduction in aircraft. Different aspects of his research involve modeling, mathematical analyses, algorithmic design and implementation, and computer simulation and solution. He has authored over 40 articles and one book and given over 35 invited talks. He was awarded a NASA Achievement Award in 1994 and won a best paper award at a major conference of the American Society of Mechanical Engineers in 1995.

Scott Hansen was promoted to Associate Professor with Tenure. Several faculty members have retired since our last newsletter. Both Colby Kegley and Stu Nelson took early retirement, effective Fall 1997. Ken Heimes began phased retirement, so that he teaches only Spring semester. Richard Miller announced his retirement effective December 31, 1997. Moreover, Professor James Corones resigned from the department and is involved in setting up his own company.

Several faculty are on leave during the 1997-98 academic year. Justin Peters in on

Faculty Improvement Leave at Lancaster University in Exeter, England until December 31. Art Gautesen is on Faculty Improvement Leave at Lawrence Livermore Laboratory in California until May. Qiang Du is on leave in Hong Kong until May 15.

The Midwest Conference on the History of Mathematics (with a special session on history of logic) will take place October 2-4, 1998 at the Iowa State University campus. The purpose of this conference is to encourage study of the history of mathematics at all levels and for all purposes. People are encouraged to submit a paper whether they are historians, mathematicians with an interest in the history of their field, or teachers interested in the use of history of mathematics in the classroom. Further information may be obtained by e-mail to [jmurdock@iastate.edu](mailto:jmurdock@iastate.edu) or from the World Wide Web site: <http://www.math.iastate.edu/jmurdock/conference.html>

**Iowa State University**  
**Department of Statistics**

Dean L. Isaacson  
[dli@iastate.edu](mailto:dli@iastate.edu)

The Department of Statistics is celebrating the 50th anniversary of its founding with a special conference, Statistics for Correlated Data, on October 16-18 in the Scheman Continuing Education Building, Iowa State Center. The conference includes 29 invited papers, 36 contributed papers, and a special poster session for 16 invited young researchers and graduate students. The conference is supported by NSF, the Biometrics Section of the American Statistical Association, Procter & Gamble, and Eli Lilly and Co. More details are given on the ISU Statistics World Wide Web pages (<http://www.public.iastate.edu/~stat/stat50th>).

A Scientific Computing Research Environments for the Mathematical Sciences (SCREMS) grant from the National Science Foundation, along with matching funds from the university and an award from the Provost's Office, are providing more than \$140,000 to upgrade the Department of Statistics' research computing environment. The department has also received a \$60,000 award from the Instructional Laboratory Instrumentation (ILI) Program of the Division of Undergraduate Education of NSF and matching funds from the university and College of Liberal Arts and Sciences Computer Fee Allocation Committees. These funds were used to upgrade an open computer lab for students.

William J. Kennedy is completing a three-year term as editor of the Journal of Computational and Graphical Statistics in 1997.

Mark Kaiser and Sarah Nusser have been promoted to associate professor with tenure. Hal Stern and John Stufken have been promoted to full professor. David Cox, University Professor, retired effective last May 15.

Three new members have been added to the statistics faculty: Michael Daniels (Sc.D. Harvard 1995 in biostatistics) for a new position as assistant professor in environmental statistics, William Duckworth (Ph.D. U. of North Carolina-Chapel Hill this fall in statistics) for undergraduate statistics, and Huaqing Wu (Ph.D. U. of Michigan 1997 in statistics) for general theory.

Carl Roberts is on faculty improvement leave for the 1997-98 fiscal year to do collaborative research with Prof. Roel Popping at the University of Groningen, the Netherlands.

Derrick Rollins received a mentor award from the American Association for the Advancement of Science at its annual meeting last February. The AAAS Mentor Awards honor individuals who during their careers demonstrate extraordinary leadership to increase participation in science and engineering by underrepresented groups, specifically women of all racial and ethnic groups; African American, American Indian and Hispanic men; and people with disabilities.

The Iowa State University Alumni Association is honoring one present and one former member of the statistics center in October 1997. Sharon Shepard receives a Superior Service Award. Alumnus Martin Wilk, former Chief Statistician of Canada, is being honored with a Distinguished Achievement Citation. F. Jay Breidt has been selected for the College of Liberal Arts and Sciences Early Excellence in Research Award.

In the 1996-97 fiscal year, 10 students received B.S. degrees in statistics, three with distinction (including one with a concurrent degree in French). Twenty-six received M.S. degrees (including one with a joint major) and seven received Ph.D. degrees in statistics (including two with joint majors). At the summer 1997 graduation there were two additional B.S., nine M.S., and four Ph.D. degrees awarded in statistics. There are approximately 130 graduate students in statistics at ISU at present; in addition, a number of employees at General Motors and at Mayo Clinic are in distance education programs offered by ISU toward the M.S. degree in statistics.

The Department of Statistics was selected again to receive two four-year Miller Graduate Fellowships, each with an annual stipend of \$5,000 starting in 1997, to attract outstanding graduate students. These were awarded to Jennifer Schumi and Kimberly Wentzlaff and are funded by earnings from the Miller Endowment Trust.

An undergraduate statistics major was awarded a Barry M. Goldwater Scholarship for the second time: Vera F. Boulaevskaia. The scholarship pays for up to \$7,000 in expenses for the academic year.

## Luther College

Ruth Berger  
bergerr@luther.edu

Joyce Becker presented talks at ICTM and NCTM meetings, she also attended the week long workshop at Concordia College, on using the TI-92 Calculator to teach Calculus I.

Ruth Berger was approved for tenure and promotion to associate professor. She attended various workshops on technology in the classroom and presented a paper at the national AMS/MAA meeting in January.

Richard Bernatz is a co-author of "Finite Analytic Method and its Applications: a Review", to appear in Dynamics of Atmospheres and Oceans, Elsevier Press, 1997.

Steve Hubbard is busy as interim chair of the Computer Science department.

Reginald Laursen spent spring '97 at the University of Arizona on sabbatical leave. His primary project was to develop computer materials for the visualization of the fundamental concepts of Linear Algebra using-D graphics.

Alan Macdonald presented a paper "The Fundamental Theorem of Geometric Calculus via a Generalized Riemann Integral" at a sectional meeting of the AMS in Corvallis Oregon, April 1990.

Dave Mitchell will once again be leading the ASCES program for Talented and Gifted Mathematics students this fall and spring.

Walter Will is spending a year long sabbatical leave in San Luis Obispo, California.

### Other Items of Interest:

We continue to use the Calculus reform text by Ostebee/Zorn: "Calculus from Graphical, Numerical and Symbolic Points of View" put out by Saunders College Publishing. Laursen is using a Preliminary Edition of a reform text in Differential Equations by Blanchard/Devaney/Hall published by PWS(ITP).

Luther graduated 2 Mathematics/Statistics majors, 20 Mathematics majors, 17 Computer Science majors (7 double with Math) and 18 Mathematics minors.

We are still trying to establish a speakers exchange program with MAA Iowa District members. If you are interested please get in touch with Alan Macdonald. Thanks to those of you who have already responded, our Math Club is looking forward to your presentation.

**Maharishi University of Management**

CathyGorini  
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John Price will be visiting Australian National University and the University of New South Wales from September to January.

Eric Hart has been appointed Chair of the Educational Materials Committee of the National Council of Teachers of Mathematics. He was invited by the Korean Mathematical Society to give several lectures at Korean universities on recent developments in American high school mathematics education, including a keynote address at the Annual International Symposium on Mathematics Education in Seoul, June 21, 1997.

Anne Dow has re-joined the department after a two-year leave.

CathyGorini has been promoted to Professor of Mathematics.

The department is focusing this year on the development of an outcomes assessment program for the undergraduate major.

Our annual Celebrate Mathematics! festival attracted over 120 high-school students and teachers to a day of speakers, workshops, and contests.

**Mt. Saint Clare College**

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There are no special programs or lectures offered as MSC, however, we have received approval to begin offering mathematics endorsements for our elementary education majors. At this time we do not know how many of our current students will opt for this endorsement.

Glen Just was able to attend the STATS97 workshop in Minnesota earlier this summer. He has been able to incorporate some of its concepts in his current stats class and hope to expand its influence in the coming semesters. He is currently completing his 15th year at MSC (I'm not sure if most people would count that as an "honor").

MSC does not offer a four year degree in mathematics. Likewise we have no graduate programs in mathematics. The only student organization that relates to mathematics is our Mu Sigma Eta science honor society. MSE includes members from Biology, Chemistry, Mathematics and Physical Science. Last spring members of MSE were involved in a land preservation activity in cooperation with the Sisters of St. Francis and they are also involved in managing a tall grass prairie near the college.

We have been emphasizing the use of technology in our courses through the use of hand-held calculators, primarily the TI series. Students taking Math 132, Intro to Prob and Stats, use the TI-83 graphing calculators. Students taking Math 201, Calculus I, use the TI-85 graphing calculators. Instruction, assignments and tests are geared to these calculators. Future plans include using statistical packages such as Minitab or SYSTAT for more "hands - on" activities, as soon as funding becomes available.

**University of Iowa**

Herb Hethcote  
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The Department of Mathematics has 115 undergraduate math majors. Last year undergraduate research assistants worked with faculty on projects such as differential geometry, nonstandard analysis, group theory, operator theory, novel curriculum development for advanced undergraduate courses, and differential equation modeling of epidemics. The Department has 76 graduate students in our Master's and Ph.D. degree programs. Last year 16 students received their PhDs and all found jobs related to their degrees. Some are now teaching at colleges or universities such as Bethel College, Chatham College, and Indiana University at Fort Wayne. Others have accepted jobs in industry at companies such as John Deere, Lucent Technologies, and Iowa Computer Aided Engineering Network. Some graduates returned to their home countries of Venezuela, China, Taiwan, and Indonesia to either teach at the University level or work in industry. Two graduates went to postdoctoral positions at the Argonne National Laboratories and the University of Michigan. A recent graduate, Doug Bullock, received one of the only 25 NSF Mathematical Sciences Postdoctoral Fellowships awarded last year.

The Applied Mathematical and Computational Sciences (AMCS) program at the University of Iowa is an interdisciplinary Ph.D. program with 31 faculty from 12 departments. While building a strong foundation in theoretical and applied mathematics, students also study in another science. Then they use their mathematics training to work on an applied mathematics research problem in the other science. The AMCS program has 19 graduate students working in areas such as computer aided design, real time calculations for the Iowa Driving Simulator, quantum mechanics, global atmospheric pollution, fluid mechanics, optimization, financial portfolio analysis, and economics. The 4 AMCS graduates in 1996 took positions at Indiana University of Pennsylvania, Georgia Southern University, Millman and Robinson: Actuaries and Consultants, and Research Branch of the Federal Reserve Bank of St. Louis. One 1997 AMCS graduate received the Wilkinson Postdoctoral Fellowship in Scientific Computing at Argonne National Laboratory; this is one of the most prestigious awards in scientific computing. The other 1997 AMCS graduate was awarded a postdoctoral fellowship at the Courant Institute at New York University.

Professor Walter Seaman has been integrating www technology into his courses. Using the homepage program "WebCT", which many University of Iowa faculty studied this past summer in the Center for Teaching nTITLE (new technology in the learning environment) Workshop (<http://www.uiowa.edu/~ntitle/>), Seaman has produced homepages for the three courses he is teaching. Using the WebCT program, he has been using the homepage bulletin board function to post assignments and announcements, holds on-line office hours in the homepage chat rooms in addition to regular office hours, posts solutions to homework problems on a "solutions" page linked to the homepages, and uses a tool called "my record" which allows students to see all their grades received on homework assignments or tests (a student's individual grades are viewable only by himself or herself), and exhibits bar graphs showing how the entire class did on those assignments or tests. These efforts by Seaman were cited in a recent on-line edition of the Chronicle of Higher Education (Information Technology section, Monday, September 19, 1997), where other University of Iowa faculty efforts are also discussed. There is a "Welcome Page" to Seaman's 22M160 Introduction to Differential Geometry 1 course which is accessible to anyone at <http://courses.uiowa.edu:8900/public/22m160/index.html>. Seaman uses color graphics and animation on the Differential Geometry homepage to illustrate important geometric topics which are studied in this course.

The Department of Mathematics has several Distinguished Visitors each year. The first Distinguished Visitor this year was Professor Wei-Ming Ni from the University of Minnesota. He gave 4 lectures on September 15-18, 1997 on Diffusion, Cross-Diffusion and Their Spike-Layer Steady States. Information about colloquium speakers, Distinguished Visitors, etc. is available on our World Wide Web page at <http://www.math.uiowa.edu/>.

**University of Northern Iowa**

Greg Dotseth  
[dotseth@nova.cs.uni.edu](mailto:dotseth@nova.cs.uni.edu)

During this last year, in addition to Augusta Schurrer and Diane Baum, John Bruha also retired. John was a member of the Department for 38 years. His recent activity has involved the use of technology in the classroom and the American Junior High Mathematics Competition. Vani Sundaraiyer has taken a position in industry in Princeton, NJ.

The department has had four new faculty start this fall:

Sarah-Marie Belcastro received her Ph.D. from the University of Michigan. Her research interests are in Algebraic Geometry.

Mark Ecker received his Ph.D. from the University of Connecticut. His research interests are in Spatial Statistics.

Cathy Miller received her Ph.D. from the University of Arizona. Her research interests are in the area of Mathematics Education.

Tamara Veenstra received her Ph.D. from Dartmouth College. Her research interests are in Number Theory.

Special programs - ICN: Bert Waits from Ohio State University will be doing an ICN session on trends and implications of the graphing calculator on mathematics curricula. It will be held on Thursday, November 20, 1997 from 4:00 to about 5:30 or 6:00. If someone is interested in participating, they can just let Karla Krueger know and she will set up an ICN room near them. Her e-mail address is: [karla.krueger@uni.edu](mailto:karla.krueger@uni.edu).

Members of the faculty that will be attending the ICTCM (International Conference on Technology in College Mathematics) in Chicago November 7 to November 9 are: Maura Mast, Thomas Kline, John Cross, Diane Mitchell, Bonnie Litwiller, and Bob Rule.

Thomas Kline will be attending the CPMP (Core-Plus Math Project) Conference in San Diego October 24 to October 26.

#### Student Information:

Undergraduate degrees in mathematics so far in 1997: 28.

Graduate degrees in mathematics so far in 1997: 25 (17 of these degrees were for Math for the Middle Grades).

For the second summer, Suzanne Shontz received a summer research award. She attended the Research Experience for Undergraduates sponsored by the National Science Foundation at the University of Kentucky. Her presentation was titled "Numerical Linear Algebra and Medical Imaging".

Two students had articles appear in the Spring 1997 issue of The Pentagon (The Official Journal of Kappa Mu Epsilon): "Molecules and Their Symmetries: Determining the Hybridization of a Central Atom using Point Groups" by Suzanne Shontz; and "Real Division Algebras and Dickson's Construction" by Heather Golliher.

Suzanne Shontz attend Math Fest 97 (national summer meeting of the MAA), in Atlanta in July of 1997. Her presentation there was "Smooth Algebraic Curves on the Real Projective Plane".

KME: Four students presented papers at local meetings. Suzanne Shontz presented "Molecules and their Symmetries" at the KME National Convention in Springfield, MO and was named one of the top four presenters. KME members

assisted with the telethon, Science and Technology Day and Mathematics Awareness Week.

Mathematics Club: During its first year, the math club had three speakers, a mathematics contest night, one mathematics film night, a number of games/volleyball nights and a field trip to Minneapolis. A full schedule of activities has been planned for this year.

Wartburg College

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Mariah Birgen is a new member of our department. This summer she completed her Ph.D. at the University of Michigan in the area of Global Analysis and Geometry. We are please that she was accepted into Project NExT and that she was able to begin participation at the Summer meetings. Besides an active involvement with our calculus sequence which uses the Harvard Curriculum she will teach upper division applied courses. She has also "volunteered" to be a member of the team teaching our interdisciplinary general education science course.

Bill Waltmann was selected as one of twenty-four faculty to participate in a workshop on Resources for Calculus which was held at Macalester College in July. This workshop was sponsored by the National Science Foundation. The purpose was to provide information on the Calculus Reform Movement "its history and philosophy of pedagogy" and to recruit involvement in the movement. Bill served on a panel of three faculty given the opportunity to share impressions of the calculus reform materials used at their institutions.

Josef Breutzmann completed a Ph.D. in Computer Science at Iowa State University last December. The title of his thesis was "The Complexity of Parameters for Probabilistic and Quantum Computation. In addition he presented a chapter of his thesis at the 14th Annual Symposium on Theoretical Aspects of Computer Science which was held in Luebeck, Germany last winter.

This summer Glenn Fenneman attended a one-day STAT workshop at Cornell College and a two-week Discrete Mathematics Workshop at Virginia Commonwealth University.

While in Europe last summer, Lynn Olson had the opportunity to tour the Goettingen University Observatory which Gauss had directed.

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

## **The Ohio State University College Short Course Program**

The Ohio State University Technology College Short Course Program - part of the Teachers Teaching With Technology Program - is now taking applications for mini-grants to partially fund 1½ to 5-day hand-held technology-based short courses throughout the United States in 1997 - 98. You may select to host courses for the developmental level (DEV), for the college algebra-trigonometry level (ALGT), for the precalculus and calculus level (PCALC-CALC), for the calculus level (CAS-CALC), for teacher educators (MTE), for modeling science (M2S), for statistics and data analysis (STATS), and other affiliated courses. Participants will learn how to use Texas Instruments hand-held technology to enhance the teaching and learning of mathematics. Each course contains some use of the CBL and CBR to collect data for the purpose of mathematical analysis. Pedagogical, testing, and implementation issues are addressed in all courses. Academic year courses (1½ - 3 days) are intended for individual or small groups of colleges, and 3 or 5-day summer 1998 courses are intended for wide-based audiences. If you are interested in hosting a course, the mini-grant application form, short course prospectus, and Program details are available at: <http://www.math.ohio-state.edu/shortcourse>

Hard copies of the forms 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>. The College Short Course Program is endorsed by the American Mathematical Association of Two-Year Colleges (AMATYC) and has offered nearly 100 courses in 27 states in the last 4 years.

## MAA Online

Have you visited MAA Online lately? The home page (at [www.maa.org](http://www.maa.org)) continues to grow and improve, providing MAA members with an ever increasing level of access to information about programs, publications, meetings, student activities, and a host of other topics. Recent additions include a catalog of over 14,000 mathematics books available through Amazon.com, information about the MAA Placement Test Program, and new links to home pages for Student Chapters and MAA Sections. In fact, every section now has a home page linked to MAA Online. Incidentally, there is a place on the home page where you can sign up to receive email bulletins about additions to MAA Online. That is one way to keep up with at least part of this expanding resource.