

2010

The Wright Message, 2010

University of Northern Iowa. Department of Mathematics.

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Recommended Citation

University of Northern Iowa. Department of Mathematics., "The Wright Message, 2010" (2010). *The Wright Message*. 8.

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Department of Mathematics

The WRIGHT Message 2010

Dear Department Alumni and Friends,

Warm greetings to all our alumni and friends and welcome to the latest edition of *The Wright Message*, the annual newsletter of the Department of Mathematics. Following an internal search in the run-up to Dr. Jerry Ridenhour's retirement on December 31, 2009 (see details inside), I was offered, and I accepted, a two and one-half year appointment as Interim Department Head. I knew the position would be challenging and the last few months have confirmed this. Six months in, I remain excited about the prospect of leading this department through these heady times and I am confident that with the support of faculty, staff, students, our alumni and friends, the department will have a bright future.

As many of you know all too well, the three Iowa Board of Regents universities generally, and UNI in particular, faced significant budgetary challenges in the 2009-2010 academic year. In spite of it all, the department, though stretched to the limit, was able to minimize the impact of the two budget reversions on our students. I thank the faculty and staff for their hard work and their dedication to the department and their unwavering commitment in these very trying times. We are hopeful that the economy has turned the corner and that our circumstances will improve in the coming year.

The year also brought some good news, indeed. Dr. Larry Leutzinger received the Iowa Council of Teachers of Mathematics (ITCM) Lifetime Achievement Award, Dr. Doug Shaw received the Excellence in Teaching in the Liberal Arts Core award for 2010, and Dr. Jihwa Noh received tenure and promotion to associate professor. Additionally, Dr. Min Lee and Dr. Shangzhen Luo received summer fellowships from the Graduate College to conduct research in summer 2010. Please join me in congratulating all of these faculty for their achievements. Join me also in welcoming Matthew Webb who begins this fall as the newest member of our faculty. Matt defended his dissertation at the University of Missouri in early July. His specialty is mathematics education.

On April 16, 2010, CNS held its Alumni Fellows Day. As part of the day's activities, I had the pleasure of meeting some of our alumni and friends. I met Bob Crane, Daniel Claes, Brenda Good, Eileen Youds, Pat Larsen, and Rich James. It was good to learn about the productive lives they went on to lead after leaving UNI, and better still to hear how fondly the alumni remembered their experiences at UNI. We thank them for their continuing devotion to UNI, and we consider them to be our ambassadors and most vital link to the world. For our part, we commit to continue to provide our students the very highest quality education that over the years has earned us your faith, trust, and support.

Even in good times, the department depends heavily on the generous support of our alumni and friends. The distressed economy in the last few years has left the department in even greater need. On behalf of the department, I wish to extend our very sincere thanks to the alumni and friends who made contributions to our Foundation accounts in the past year. In total, we received \$46,140 between July 1, 2009, and June 30, 2010. Most of the money goes to fund scholarships, but some goes to accounts that cover other expenses (equipment, faculty and student travel, etc.). We are appealing for your help again this year. If you are able to, please use the enclosed form to direct your contribution to the appropriate account. Again, thank you for your support.

I hope this past year has been good to you and that the coming year will be even better.

Sincerely,

Douglas Mupasiri, Professor and Interim Head

2010-2011 Tenure-Stream Faculty

Russell Campbell	Min Lee	Douglas Mupasiri	Edward Rathmell	Adrienne Stanley
Mark Ecker	Larry Leutzinger	Glenn Nelson	Suzanne Riehl	Bridgette Stevens
Joel Haack	Bin Liu	Jihwa Noh	Doug Shaw	Diane Thiessen
Theron Hitchman	Shangzhen Luo	Vicki Oleson	Nikolay Silkin	Brian Townsend
Elizabeth Hughes	Catherine Miller	Michael Prophet	Marius Somodi	Matthew Webb
Syed Kirmani				Jack Wilkinson

SPOTLIGHT ON UNDERGRADUATES

Jeremy Cue completed his College of Natural Sciences (CNS)-sponsored summer project "Teacher questioning and accountable talk in a mathematics classroom" under the direction of **Dr. Elizabeth Hughes**. Jeremy gave presentations at both the CNS Poster Session and at a department colloquium.

Corey Gevaert completed his CNS-sponsored summer project "On the isometries of a giant product space" under the direction of **Dr. Theron Hitchman**. Corey gave presentations at the CNS Poster Session, at a department colloquium, and at the Iowa Section of the Mathematical Association of America (MAA) meeting.

Kyle Pitzen and **Joe Winder** undertook a study of isometries of a product of hyperbolic planes under the direction of **Dr. Theron Hitchman**. They presented a poster at the Midwest Undergraduate Mathematics Seminar at Simpson College and at UNI's Sigma Xi poster day.

Mac Roepke continued his project studying m -ary partition sequences under the direction of **Dr. Theron Hitchman**. Mac participated in poster sessions at the Iowa Board of Regents "Research in the Capitol" event and at UNI's Sigma Xi poster day. He also gave a talk about his research at the Midwest Undergraduate Mathematics Seminar at Simpson College.

Mac Roepke, **Ehrich Pakala** and **Tianyun Chen** represented UNI in the William Lowell Putnam Competition in December. This is a prestigious and challenging team competition. We are proud that our team scored in the double digits for the second straight year. Also, **Ehrich Pakala**, **Tianyun Chen**, and **Kyle Pitzen** represented UNI at the Iowa Intercollegiate Mathematics Competition, run by the Iowa Section of the MAA. **Dr. Theron Hitchman** was the coach for both teams.

PROJECTS AND GRANTS

Invisible to most students, but an integral part of the Mathematics Department, is our work on grants and projects. These activities extend the reach of our faculty

and allow us to impact the study of mathematics beyond our campus.

Dr. Theron Hitchman received a grant from the Educational Advancement Foundation & Academy of Inquiry-Based Learning to support travel for visits with a mentor. Dr Hitchman traded visits with Dr. T. Kyle Petersen of DePaul University during the spring to observe classes and discuss the challenges of running an inquiry-based learning course. They plan to trade visits again in the fall semester.

Dr. Bridgette Stevens and Dr. Robert Keller (Loras College, Dubuque) received a grant sponsored jointly by UNI's Office of Sponsored Programs and the Graduate College. They will examine how differences in integrating pedagogy, mathematics, and the teaching of mathematics influence teacher learning. The goal of this project is to improve pre-service elementary mathematics education through integrating reflective practices.

Dr. Elizabeth Hughes and UNI alumna **Sue Runyon** (Keystone AEA) received a grant from the Iowa Mathematics and Science Education Partnership (IMSEP) to study assessment, reflection, community, and knowledge (ARCK) for secondary mathematics teachers. This project provides a three-year professional development program for high school mathematics teachers in northeast Iowa. The content focus is the Iowa Core Curriculum for high school mathematics. The project will be starting its second year in June 2010 with summer workshops for teachers. The project also has a research component that studies the effectiveness of the project. Three undergraduate secondary math teaching majors, **Sean Duffy**, **Hannah Burlingame**, and **Nicole Hancock**, are assisting Dr. Hughes with the project this summer. Hannah and Nicole are being supported by the project grant. Sean is participating in the College of Natural Sciences (CNS) summer undergraduate research program.

Dr. Jihwa Noh received a grant from IMSEP to improve middle school level field experiences for UNI pre-service mathematics teachers. This project adapted a model of field experiences that is built on Professional Development School (PDS) principles. A PDS is a pre K-12 school that works in close collaboration with university faculty to create a hybrid learning community that provides extended high quality field experiences for pre-service teachers, as well as professional development opportunities for school teachers and university faculty, with the goal of improving K-12 student achievement. The PDS site for this project is Waterloo's George Washington Carver Academy (previously known as Logan Middle School). **Elizabeth Mastalio** is assisting Dr. Noh with this project this summer as part of CNS's summer undergraduate research program.

The Center for Teaching and Learning Mathematics received grants from the Department of Defense and from the Iowa Department of Education. The Center develops online educational products designed to help parents and children develop deep conceptual understanding of literacy

and mathematics content. It also develops professional development modules designed to increase content knowledge and improve pedagogy for elementary school teachers. **Vicki Oleson** directs the projects at the Center. These projects involve thirty innovative educators and consultants from the University of Northern Iowa, Iowa Area Education Agencies, school districts, and other agencies across the state.

The Center currently serves military families worldwide and teachers in the state of Iowa via three major projects:

- Development of *Making Sense*, online video and supplementary resources, for Project SOAR (Students Online Achievement Resources). UNI partners with The Princeton Review, US Skills, and Military Impacted Schools Association to provide mathematics and literacy educational resources to military parents. The *Making Sense* videos and supplementary resources are available at <http://www.makingsenseonline.org>.
- Creation of *Making Sense* professional development mathematics courses. Current topics include number and operation, geometry and measurement, data, and algebraic thinking for elementary classrooms.
- Facilitation of *Making Sense of Mathematics and Teaching* professional development courses for sixty teachers in southwest Iowa.

SECONDARY MATHEMATICS EDUCATION PROGRAMS

Secondary Mathematics Education is alive and well at UNI! Our Master's degree program in mathematics for high school teachers is also thriving. During the coming academic year, we plan to conduct comprehensive self-studies of both programs.

The number of UNI undergraduate (UG) majors has fluctuated in recent years. This is also true of the number of education majors at all grade levels and most content areas, with the trend being fewer people choosing education as their career. (We, however, continue to have more mathematics teaching majors than other Iowa institutions.)

Number of UNI Secondary Mathematics Education Students

	2005	2006	2007	2008	2009	2010
UG Teaching Majors/Minors	111	110	130	126	111	103
Student Teachers	23	22	10	18	17	29

(Note: Each year listed represents the academic year beginning with that fall; for example, 2005 represents the school year spanning 2005 to 2006.)

We recognize that our UG mathematics teaching curriculum must keep up with current research and teaching practices. We plan to update courses and revise the program based on the results of our upcoming self-study. Please contact **Dr. Catherine Miller** (319-273-2935 or millercc@uni.edu) if you have ideas that you would like to share regarding our UG mathematics teaching curriculum.

After a renewed effort in 2004 to update courses and recruit students for our Master's program, 22 teachers have earned this degree. By the end of this summer, eight more teachers will complete the program.

The self-study of the Master's program, which we conducted as part of the 2008 Academic Program Review, will help us improve the program and better meet the needs of high school mathematics teachers. In March, we surveyed alumni of our programs to find out how well our UG program helped them prepare for their teaching careers and how our Master's program is enriching their careers. We will use these data and other recent departmental assessments to reshape our Master's program. Please contact **Dr. Jihwa Noh** (319-273-3301 or jihwa.noh@uni.edu) if you have ideas or comments that you would like to share about our Master's program.

UNI I-TEACH

The Iowa Mathematics and Science Education Partnership (IMSEP) is funding the UNI I-Teach program. The three main components of this relatively new program are (1) a one credit hour seminar, (2) scholarships for students in mathematics and science teaching majors, and (3) summer or academic year internships for UNI students. The UNI I-Teach program represents UNI's response to the call by the Iowa Legislature to recruit more mathematics and science teachers.

Feedback from UNI students who have taken this seminar indicates that they appreciate the balance of information and experience that Mr. Jason Lang (Science Education) and **Dr. Catherine Miller** have put together.

Fifty-two UNI I-Teach scholarships have been awarded to UNI students pursuing degrees in mathematics or science teaching. This is the second part of I-Teach's focus – to retain teachers in these fields. With economic challenges facing some of our students, these scholarships have helped some students stay in school or allowed them to work less and focus more on studying.

Students from the Regents institutions and a few community colleges participating in I-Teach are eligible for summer or academic year internships. These internships are related to the future careers of participating science and mathematics teaching majors and provide students with work experience relevant to their studies. With this, the seminar, and scholarships, we hope that the UNI I-Teach program will help recruit and retain talented mathematics and science teachers in Iowa.

CRANE SCHOLARSHIP

Bob and Carol Crane of Johnston, IA, have created the **Robert A. and Carol L. Hendrickson Crane Scholarship in Secondary Math Education** with a recent gift to the Department of Mathematics. The scholarship will provide a \$5,000 annual scholarship to a junior or senior majoring in secondary mathematics education. Carol, who received her BA and MA degrees in mathematics from UNI, is a retired math educator. Bob received undergraduate degrees in physical education and mathematics as well as an MBA from UNI. He is a retired Marine Corps colonel and a retired CIO. Bob and Carol feel strongly about how important it is for UNI to continue to produce mathematics educators who are among the nation's finest. Their gift will provide ongoing significant financial support for tomorrow's mathematics educators. **Nicole Hancock** is the first recipient of this scholarship.



Bob and Carol Crane at President Allen's house

ACTUARIAL SCIENCE AND THE ACTUARIAL SCIENCE FUND

Our actuarial science program is continually exploring new ways to meet the needs of our students. Its aim is to help students prepare for leadership roles in the actuarial profession by providing superior instruction in the courses related to actuarial examinations, encouraging students to take substantial coursework in business related courses, and enhancing their communication and leadership skills through the activities of the Actuarial Science Club. The coursework in the

actuarial program remains focused on Exams P, FM, MFE, MLC, and C of the Society of Actuaries (and the corresponding examinations of the Casualty Actuarial Society). The program's reputation continues to grow with nearly ten insurance companies regularly recruiting for summer internships and full-time positions through the Actuarial Science Club.

The Iowa Board of Regents has recently approved an Actuarial Science option, starting Fall 2010, within our Professional Science Master's (PSM) program. This option will bring new students to the actuarial profession and it will have several highly innovative features such as mandatory research experience, preferably based on practical work in the insurance industry, and finance and business courses as part of the program. However, the undergraduate actuarial science program will remain our primary focus.

We are seeing a steady increase in the number of UNI undergraduates who are choosing to major in actuarial science; we currently have about 70. This increase has led to a shortage of funds to award scholarships, reimburse students when they pass actuarial examinations, and enhance the activities of the Actuarial Science Club. These expenditures, excluding the endowed scholarships, are covered, to the extent possible, by the Actuarial Science Fund. This fund, which receives contributions from alumni, insurance companies, and other well-wishers, plays a crucial role in our program. A need remains for significantly higher levels of funding for recruitment, retention, and nurturing of our actuarial science students.

ALLIANCE PROJECT

As in previous summers, in summer 2009 the Department hosted 10 undergraduate students selected from a national pool of applicants to participate in our 8-week undergraduate summer research program. The students worked on mathematics projects in groups under the supervision of **Dr. Douglas Mupasiri**. We are pleased that a member of one of the groups, Marco Lopez, gave a poster presentation of his group's work on a realization in \mathbf{R}^n of von Neumann's Theorem on Iterative Approximations at the SACNAS National Conference in Dallas, Texas, in October 2009 and at the Joint Mathematics meetings in San Francisco in January 2010.

MATHEMATICS CONTRIBUTION FORM

We truly appreciate the support that you give to the Mathematics Department. You may use this form and enclosed envelope to direct your gift to the area most important to you. If you prefer, you may give via the UNI Foundation secure website: <https://www.adv.uni.edu/foundation/pledgeform.aspx> If giving electronically, please note that you will need to enter the specific name(s) of the Mathematics Fund(s) in the "Other" box near the bottom of the web form. Thank you!

\$_____ Mathematics Department Quasi-Endowed Fund (provides Alumni Scholarships, faculty development and travel, equipment, and support for all programs) 11-220127

\$_____ Mathematics Education Leadership Endowed Fund for Excellence (discretionary fund for all Mathematics Education programs in the UNI Department of Mathematics) 30-221015

\$_____ Actuarial Science Fund (provides John E. Bruha Award in Actuarial Science, non-endowed scholarships, and covers student fees on successfully completed actuarial exams) 10-221288

\$_____ Mathematics Leadership Fund (for the enhancement of teaching secondary mathematics) 10-221162

Additional funds, established by alumni and friends, provide scholarships to students in our programs. These scholarships are described on the reverse of this sheet.

\$_____ directed to _____

Name(s) Email

Home address Phone (home)

City, State, Zip Phone (work)

- Please check if different than addressed.
- My (or my spouse's) company, _____ (name), will match my gift. (*Please contact your HR office for details and matching gift form to be submitted with payment.*)

Type of Payment:

- Check** enclosed, payable to the UNI Foundation **Credit Card:** Please charge my card
\$_____ beginning (mo/yr) ___/___
Please complete card information below.

Signature (required) _____ **Date** _____

Return to: UNI Foundation, Attn: Financial Services, 1223 W 22rd Street, Cedar Falls, IA 50614-0239

100340

Credit card information will not be kept on file.

Charge my: VISA MasterCard Discover American Express (circle one)

Card # _____

Exp. Date _____

ADDITIONAL MATHEMATICS FUNDS

The following are named for UNI emeritus faculty members:

- Diane Sorenson Baum Fund – scholarships for elementary education majors with a K-6 mathematics minor (10-210591)
- E.W. Hamilton Quasi-Endowed Scholarship – scholarships for students enrolled in any mathematics program (11-210174)
- Fred W. Lott Endowed Scholarship in Mathematics – scholarships for incoming freshmen who are mathematics majors (30-211124)
- Michael H. Millar Endowed Scholarship – scholarships to graduate students (30-211718)
- Augusta Schurrer Endowed Scholarship for Mathematics Excellence – scholarships for students majoring in mathematics – Teaching (30-211292)
- Paul Trafton Mathematics Education Graduate Student Scholarship – scholarships for graduate students in the Mathematics for the Middle Grades program (10-212193)
- Carl and Wanda Wehner Math Teaching Endowed Scholarship – scholarships for juniors or seniors majoring in Mathematics – Teaching (30-210474)
- Carl and Wanda Wehner Mathematics Undergraduate Research Assistant Fund – for general undergraduate research assistance (10-222452)

The following funds have been established by alumni and friends of the department:

- Patricia Lange Memorial Endowed Math Scholarship – scholarships for students in any mathematics major (30-210976)
- Robert and Carol Hendrickson Crane Scholarship in Secondary Math Education – scholarships for juniors or seniors in secondary mathematics education (10-212418)
- John F. and Ruth Cross Endowed Scholarship – scholarships for Statistics and Actuarial Science majors (30-211516)
- Rich and Dee James Secondary Mathematics Teaching Endowment – scholarships for juniors or seniors in mathematics education (30-212220)
- Marian Rigdon Ponder Math Education Scholarship – scholarships for incoming freshmen mathematics education majors (10-212206)
- Prem Sahai Actuarial Science Endowed Scholarship – scholarship for Actuarial Science majors (30-211550)
- Irvin and Dorothy Brune Mathematics Education Endowed Scholarship – scholarships for incoming freshmen mathematics education majors (30-211613)
- Robert W. Bettle Math Education Scholarship Endowment Fund – scholarships for seniors in mathematics education (30-211269)
- Marcia E. Traer Endowed Scholarship Fund – scholarships for juniors or seniors in any mathematics major (30-211199)

AROUND WRIGHT HALL

The UNI chapter of the mathematics honor society Kappa Mu Epsilon (KME) and the department hosted a Homecoming brunch last fall. All alumni and friends of the department are invited to this year's brunch on October 23. If you are on campus for the Festival (formerly known as the parade), you're welcome to come a little earlier and visit. Please contact Dr. Suzanne Riehl (riehl@uni.edu) or Dr. Mark Ecker (ecker@math.uni.edu) for time and location.

UNI hosted the annual meeting of the Iowa Section of the Mathematical Association of America on October 9th and 10th. Over sixty faculty members from around the state gathered to discuss new mathematics and issues around teaching at the undergraduate level. **Dr. Theron Hitchman** was the local organizer.

Dr. Elizabeth Hughes has been accepted into the Supporting Research, Service, and Teaching in Mathematics Education (STaR) program for first and second-year mathematics education faculty. This new national program for early career faculty in mathematics education is modeled after the Project NExT program for mathematicians. Several members of the department are Project NExT alumni.

Dr. Syed Kirmani was Invited Research Professor at the Department of Mathematics, University of Franche Comte, Besancon, France during Summer 2009. In November 2009, he gave lectures on Quality Control at the Ecole Nationale de la Statistique et de l'Analyse de l'Information (ENSAI), Bruz, France. Dr. Kirmani was also an invited speaker at FACM '10 (Frontiers in Applied and Computational Mathematics), New Jersey Institute of Technology in May 2010.

The Center for Teaching and Learning Mathematics **Project SOAR** team, together with EdgeCore, a Cedar Falls company, won seven Cedar Valley ADDY awards over the past two years for their educational videos (one best of show, three gold awards, and three silver awards). The ADDYs are part of the world's largest advertising competition.

Dr. Bridgette Stevens coordinated a Math Fair at UNI for 120 fourth and fifth graders from Highland Elementary School. Mathematicians, mathematics educators, and students from the department staffed tables with mathematics activities and mathematics games for the students to explore and enjoy.

IN MEMORIAM

The department joins the Myung family in mourning the loss of **Dr. Hyo Myung** who died in South Korea on February 11, 2010. Dr. Myung was a member of the faculty for 28 years until his retirement in 1998. Dr. Myung will be missed, but not forgotten.

DR. RIDENHOUR RETIRES

Dr. Jerry Ridenhour joined our department in 2003 as Department Head. We truly benefited from his leadership. He involved the faculty in decision making by building consensus and by clearly communicating issues, options, and outcomes. He provided steady direction, pushing our department into new areas while maintaining excellence in the core areas of teaching and faculty development. Our Professional Science Masters program, the Center for Teaching and Learning Mathematics, and the Department Advisory Board came to life during his tenure. Jerry represented our department well to prospective students and parents, to other units on campus, and to visiting alumni and friends.

We celebrated Jerry's career with an open house after he retired, including a humorous roast by Dr. Larry Leutzing. We will miss Jerry's unassuming manner, wry humor, hospitality, and unfailing support for our personal and collective undertakings. He and his wife Beverly have moved to Missouri, but we expect to see them rooting for the Panthers at sporting events, at Homecoming, delivering the roast when Dr. Leutzing retires, and whenever else we can lure them back to Cedar Falls.

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Faculty, staff, friends and family gathered at an open house to honor Dr. Jerry Ridenhour on his retirement, and to thank him for his leadership, friendship, and open-door availability to all.