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MINNESOTA STATE UNIVERSITY
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Mathematics Department
NEWSLETTER 2023

Developmental Mathematics Makes a Difference



Barbara Rath



Derald Rothmann



Tammy Fitting

For a few years leading up to the 2000 – 2001 academic year, the MSUM Math department noticed a decline in students who were successful in College Algebra their first time through. In Fall 2000 around 34% of the students who took College Algebra passed with a C or better with 43% earning a D or better. It was clear that a change was needed.

Vice President Bette Midgarden called upon Professor Derald Rothmann to develop courses to help students establish a stronger background before they took College Algebra. After traveling to a few of our sister institutions, Derald and Instructor Barbara Rath established the Mathematics Learning Center (MLC), and the courses MATH 090 Elementary Algebra and MATH 099 Intermediate Algebra were born.

Students with Math ACT scores below 24 were expected to take a placement exam and some were able to remain in College Algebra, but many began their mathematical studies in MATH 090 or MATH 099. Not surprisingly, some students were bothered by this. They were college students after all, how could it be that they were not prepared for college level courses? To solve this issue, Derald taught a trailer section of College Algebra. Those students who performed well on the first exam in MATH 099 were invited to join this trailer section of College Algebra.

The impact of the developmental math courses was immediate. In Fall 2002, just one year after the developmental math courses had been running, the percentage of students earning a C or better rose to 58% with 73% earning a D or better. Among those who started in MATH 099 and

jumped to the trailer section 87% earned a C or better.

MATH 090 and MATH 099 run today exactly as they did when they were first born. The students first attend a lecture on the material that they are expected to learn. In the following class period, they work together in groups on worksheets (labs) that give them the practice they need to develop skills and understanding of the material. While they are working in groups the professor teaching their course, the MLC director,

and student learning assistants are there to help them.

The impact of the labs was wide reaching. Obviously, the first impact was to get the students to practice the skills they were expected to learn. Since they were allowed to work together in groups, they held each other accountable and explained concepts to each other. This made learning math a less isolating experience. Additionally, students developed relationships with each other and their professors. Being in a classroom where their professors were walking around helping them humanized their professors and fostered supportive relationships. Additionally, they were able to develop relationships with the learning assistants who also served as tutors, and that made it easier to ask the tutors for help outside of

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class. Finally, our mathematics education majors benefited from the opportunity to work in a classroom and develop their teaching skills. These learning assistants had a weekly meeting with the MLC director, who helped them understand the content well and develop tutoring skills. All faculty in the department enjoyed teaching in the MLC because of the opportunity to develop relationships with students and help them achieve their goals.

In fact, many students who grumbled about originally being placed in a developmental class, refused when they were offered a seat in the trailer section. They would say that they were enjoying the developmental class and the fact that they felt like they were understanding mathematics for the first time in their lives.

Due to the growth in the program and the success of students coming through the MLC, Derald petitioned the House Higher Education Committee in November 2003 for funding to equip a larger classroom to be the Math Learning Center. This successful funding created a space where students could sit comfortably around round tables and faculty and student learning assistants could move easily through the classroom to answer questions. The MLC is bright and cheery with large south facing windows. Barb Rath kept many plants in the MLC during her time as director, which made the space homier.

The MLC was so successful that the Chancellor of the Minnesota State System visited in 2005. Later that year, the MSUM Math Department won an Excellence in Curriculum Programming Award at an awards ceremony in St. Paul.

The retirements of Barb Rath (2009) and Derald Rothmann (2010) left a vacancy in the directorship of the MLC. Tammie Schmiess was the director for a year, and Ellen Fagerstrom and Adam Goyt were co-directors for the following year. We were delighted to welcome Tammy Fitting to the role in 2012, and it has been in her hands ever since.

Tammy kept the lecture lab format in the MLC, but she increased the emphasis on metacognitive learning strategies. In particular, she emphasizes a study cycle that includes the students reading the textbook, completing guided notes, and taking a reading quiz before coming to class for lecture. The day after the lecture, the students attend the lab as before, but in addition to the lab the students are assigned practice problems using an online homework system providing immediate feedback and continuous review. Thus, the new process is Read, Lecture, Lab, Practice.

Additionally, there are four lessons that the students complete on relating neuroscience to how the brain learns. There is a discussion of the metacognitive processes involved, fixed mindset vs. growth mindset, the difference between focus and diffuse thinking, an emphasis on applying the study cycle, and many other solutions to challenges that contemporary students face when trying to learn. Tammy has done an amazing job reaching today's students and helping them achieve success.

The rate of graduation of students who pass a developmental math course at MSUM is ten percentage points higher than the rate of graduation of a general university student. Of course, the reason is that the students receive more than just math instruction; they receive instruction on how to learn, so that they can be successful in any course in any department.

One of the best parts of all of this are the stories that we hear from students. Here are some student stories of how developmental mathematics has shaped their lives.

One chemistry major needed MATH 090 to prepare for College Algebra. He eventually fell in love with mathematics and completed a double major in mathematics and chemistry and completed a Ph.D. in a field of chemistry that requires quite a bit of mathematical understanding.

A student who took MATH 090 with Derald appeared in his office crying a year later. She was so grateful for his class because she was able to complete her degree and become an elementary school teacher.

When asked what learning skill they would apply to their next math course one student said, "To never use a 'I Can't' attitude and to make sure to always ask questions – others in the room might have them as well." Another said, "Just put the time and effort into notes and lectures and do the work without falling behind. Everything typically adds on to previous information so it's important not to get behind."

One student took a class in the MLC with Tammy and did poorly on every assignment and the first exam of the course and suddenly made a very noticeable improvement. Tammy asked him what had changed, and he said that he finally started doing all parts of the learning cycle and everything "just clicked" and he continued to complete the course at a high level.

Another student said how she now "got math" and was now not afraid to change her major to one that required additional math classes, which she did and later graduated with a B.S. degree.

We need to be honest; some students do not come to college ready for college-level learning. However, MSUM takes those students welcomingly into her arms and provides the support necessary for them to succeed. The MLC is a big part of that by providing a foundation on which students can build a successful college career and maybe, just maybe, enjoy mathematics.



Mathematics Department

Mathematics Awards for Outstanding Students

The faculty of the **Mathematics Department** annually selects outstanding students in mathematics for recognition of their achievements. This year 48 students were recognized and almost \$29,000 was given out in scholarships and awards. This year's Outstanding Senior Awards go to **Anna Elgersma, Matthew Davis, Alexander Nagengast, and David Wichmann.**



Matthew Davis is from West Fargo, ND and is the son of Deb and Keith Davis. Matthew graduated from West Fargo High School in 2014 and received a Computer Science and Computational Mathematics degree from MSUM in May 2023.

While at MSUM, Matthew was Vice President of the Math Club, a violist in the MSUM String Orchestra, and worked as a Software Engineer Intern at Digi-Key Electronics.

Post-graduation, Matthew is employed as a Software Engineer at Digi-Key Electronics. "I am extremely grateful for all the time I have spent with MSUM's math professors, our Math department is incredible!" ~ Matthew



Anna Elgersma is from Randolph, WI and is the daughter of Myron Elgersma and Shawn McConnell. She graduated from Randolph High School in 2018. Anna graduated from MSUM in May 2023 with degrees in Biochemistry, Biotechnology with Molecular Emphasis, and Math Computation.

While at MSUM, Anna was President/Treasurer of the Fencing Club, she tutored Math, ASC Math, Chemistry, and Biology. She was also a Learning Assistant in the General Chemistry Lab and a Biochemistry and Biology Dragon Mentor.

Anna will return to Wisconsin to work as a Technical Solutions Engineer at Epic Systems in Verona, WI. "...I didn't come to MSUM as a math major, but I am so glad that I decided to add one. All of my professors have been great and supportive." ~ Anna

Alexander Nagengast is from Rogers, MN and is the son of Tate and Lillian Nagengast. He graduated from St. Michael-Albertville High School in 2012. Alexander graduated from MSUM in December 2022 with a degree in Mathematics.

As a student at MSUM, Alexander was a tutor for the Mathematics Learning Center and the 3rd Floor Tutor Room as well as being a part of the D&D Adventure Guild.

Alexander and his wife, Elizabeth, will be moving to Manhattan, KS where Alexander plans to study mathematics in graduate school at Kansas State University.

David Wichmann is the son of Marsha and David S. Wichmann from Moorhead, MN. He graduated from Moorhead High School in 2018. David was awarded a B.S. in Computational Mathematics, a B.S. in Computer Science and a B.A. in Mathematics from MSUM in May 2023.

While at MSUM, David worked as a tutor in both the Math 3rd Floor Tutor Room and Academic Success Center. He participated as a SOC and was a member of the Math Club, the ACM, Society for Physics Students, Cru, MCCM, Crossroads, Astronomy Club, Gamer's Club, Club Tennis, and the Adventures Guild.

David currently has a Software Engineering internship at Codelation, however, will begin a new internship at Digi-Key in June. His future plans may include a Masters degree and Ph.D. in Mathematics.



Scholarships & Awards

Bill Ritchie Award for Excellence in Mathematics awarded to Mathematics major **Alexander Nagengast**.

Bette G. Midgarden Endowed Scholarship awarded to Actuarial Science major **Mary Sandeen**.

Carl T. Carlson Scholarship awarded to Mathematics Education major **Kendra Kaczynski**.

Dr. James and Elaine Hatzenbuehler Math Scholarship awarded to Mathematics Education major, **Aden Rach**.

James T. Wallen Scholarship awarded to Actuarial Science major **Paul Remer**.

Katherine Leonard Scholarship awarded to Actuarial Science major **Brynn O'Connor**.

Ken Garland Scholarship awarded to Mathematics Education major **Emma King**, Mathematics Education major **Jason Koehn**, Mathematics/Mathematics Education major **Brandon Stalboerger**.

Marion V. Smith Memorial Scholarship awarded to Actuarial Science major **Paul Remer**.

Rothmann Family Scholarship awarded to Mathematics/Mathematics Education major **Luke Meyer**.

Shelda Warren Math Education Scholarship awarded to Mathematics Education major **Tessa Primus**.

The Peter & Michele Shea Mathematics Scholarship awarded to Mathematics major **Maxwell Sheridan**.

The Vince Felchle Math Annual Scholarship awarded to Actuarial Science major **Adam Schloemer**.

Tim and Kathy Peil Mathematics Scholarship awarded to Mathematics Education major **Kendra Kaczynski**, Mathematics/Mathematics Education major **Luke Meyer**, Actuarial Science major **Brynn O'Connor**, Actuarial Science major **Mary Sandeen**, Actuarial Science major **Adam Schloemer**, Actuarial Science major **Lynn Skiba**, Mathematics/Mathematics Education major **Brandon Stalboerger**, Actuarial Science major **Cheyenna Tourville**.

Other Awards

Freshman Mathematics Award:

Hawi Daba, Tate Gustafson, Elizabeth Johnson, Janae LaFerriere, Taytum Nelson, Kierah Nickelson, Lucas Peterson, Sophie Wick

Sophomore Mathematics Award:

Payton Chan, Abbie Kragenbring, Emily McPhee, Zachary Zierden

Junior Mathematics Award:

Caaden Rath, Lynn Skiba, Cheyenna Tourville

Senior Mathematics Award:

Emma Houska, Clay Rasmussen

Incoming Freshman Award:

Brandon Stalboerger, Kiley Lindlow

Outstanding Senior Award:

David Wichmann, Matthew Davis, Anna Elgersma, Alexander Nagengast

Outstanding Secondary Mathematics Education Major:

Alexa Lien, Sophia Sowada

Outstanding Senior Elementary Education Major:

Chloe Lear

Mathematics Department

News and Notes 2022-23

How to Cook a Pizza

Students **Matthew Davis, Luke Meyer, and Max Sheridan** were recognized for applying their newly-learned differential equations skills to an activity near and dear to the hearts of college students everywhere. They determined the amount of time one should let a frozen pizza rest after baking before eating it.



For more on this charming story visit this website by scanning the QR code.

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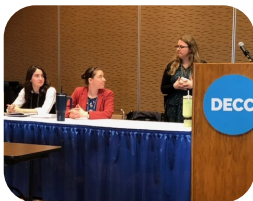
MCTM

Math faculty **Megan Jensen, Tammie Schmiess, and Tim Harms** attended the Minnesota Council of Teachers of Mathematics Conference in Duluth April 21-22, 2023. Professor Harms presented a session “Math Modeling in new MN Standards” describing the development of the 2022 MN Math

Standards emphasizing the Mathematical Practices and modeling elements significant for secondary math teachers.



Elementary Inclusive Education majors: **Michael Baker, Courtney Koebnick, Renee Herrmann, and Megan Steinkuehler** attended the Minnesota Council of Teachers of Mathematics Conference in Duluth April 21-22, 2023 with housing support provided by the Math Department.



MSUM graduates: **Sarah Harms, Jena Infanger, Ashley Skalsky** comprised a Teacher Panel sharing their first through 4th years of teaching mathematics at the Minnesota Council of Teachers of Mathematics Conference in Duluth April 21-22, 2023.

Pi Mu Epsilon

Adam Goyt and Justin James took a dozen students to the Pi Mu Epsilon conference at St. John’s University and the College of St. Benedict. The plenary speaker was Dr. Thomas Hull who spoke on the mathematics of origami. Students **Sylvia Black, Matt Davis, Elizabeth Johnson, Emma King, Jenna Lee, Luke Meyer, Mary Sandeen, Adam Schloemer, Max Sheridan, Cheyenna Tourville, and Allison Van Dyke** were in attendance.

Faculty Professional Activities

Ashok Aryal published the paper Solvability of inclusions involving perturbations of positively homogeneous maximal monotone operators with co-authors Dhruba R. Adhikari, Ghanshyam Bhatt, Ishwari J. Kunwar, Rajan Puri, and Min Ranabhat.

He continues to serve as general secretary and treasurer of The Association for Nepalese Mathematicians in America. He has been planning and will attend the Third International Conference on Applications of Mathematics to Nonlinear Sciences (AMNS-2023), May 25-28, 2023, in Pokhara, Nepal and will give a talk there. He also attended the Joint Mathematical Meetings and spoke on the topic “An approach for recovering initial temperature via bounded linear time sampling.”

Ashok also received two grants this year: a faculty improvement grant of \$2,725 for “Organizing and Presenting Research work at an International Conference” and a \$350 grant from the Faculty and Professional Learning Committee.

Finally, Ashok directed five students in research projects “Newton’s Law of Cooling Applied to Jack’s Pizza” by **Matthew Davis, Luke Meyer, and Max Sheridan** and “The Effect of a Ventilator on the Volume of a Single Lung Compartment” by **Emma King, Kendra Kaczynski**.

Ellen Fagerstrom attended five conferences this year: Assessment Institute, hosted by IUPUI, October 2022, Faculty Athletic Representatives Annual Meeting, November 2022, Minnesota State Accreditation and Assessment Conference, November 2022, NCAA Convention, January 2023, and the HLC Annual Meeting, March 2023.

Tammy Fitting attended a NCLCA (National College Learning Center Association) conference where the keynote speaker and presenter was Dr. Saundra Mcguire, who is a leading expert on learning strategies and metacognition. She also attended the MNADE (Minnesota Association for Developmental Education), where the keynote speaker was Dr. Alex Goudas, whose mission is to help at-risk students succeed by offering thoughtful, data-based, and comprehensive solutions to decision makers in support of the utilization of developmental education. She presented “Assessing While Learning” at the MNADE conference, which discussed the fact that our brain needs breaks and variety to replenish neurotransmitters and make connections and how this may be done by utilizing various interactive formative assessments to help students remain alert and on task.

Damiano Fulghesu published two papers this year: “Infinite families of infinite series with integer sums” with James Sellers and “The integral Chow ring of $Mo(P_n, d)$ for d odd” with Renzo Cvalieri.

Damiano also gave the talk “The Integral Chow Ring of the Space of Rational Stable Maps” at the Tri-College Math Colloquium at NDSU. Finally, Damiano attended the “CUR Dialogues connecting you to funding + grants” conference.

Adam Goyt continues to develop the SMART Start program to help students successfully launch their college careers by starting strong in mathematics. He was also certified as a Narrative 4 Facilitator.

Tim Harms attended a mini conference on Promoting Reasoning in Undergraduate Mathematics at Georgia State University, in Atlanta, Georgia, May 19-21, 2022.

He also participated in OPEN Math Workshop, Rich Mathematical Tasks in Mathematics for Elementary Teacher Courses, June 13-16, 2022.

Finally, Tim volunteered as an activity leader for Math on a Stick as part of the MN State Fair, Aug. 25th, working the hexagon challenge and hinged mirror station. He also volunteered for the Red River Water Festival as an activity assistant September 26th.

Justin James is the outgoing Treasurer and was voted President elect of the North Central Section of the MAA.

Justin continues to serve as a leader of SEED seminars.

Lian Ng attended the Twelfth Conference of the International Group for Mathematical Creativity and Giftedness, Sept 25-28, 2022, in Las Vegas, Nevada.

Carol Okigbo has been working with six young female math education professors from Nigeria; Chinyere N. Emefo, Ijeoma S. Ezeh, Ifeoma J. Osakwe, Catherine U. Ene, Foluke B. Eze and Mercy N. Nwoye, to help them get more involved in research. Their article “Teachers’ View on Distance Learning of Mathematics During the Covid-19 In South-east South-south and North-west Geo-political Zone in Nigeria” was published in the Journal of Educational Studies.

Tenure and Promotion

Hongyan Hou and Sara Solhjem were awarded tenure and promotion this spring. Both are excellent members of our department and make a difference in the lives of the students they work with. We congratulate them on their achievement and look forward to many years of collaboration.



PROBLEM CORNER 2023

For All You Actuarial Science Lovers Out There

On a block of 10 houses, k houses are not insured. A tornado randomly damages three houses on the block. The probability that none of the damaged houses are insured is $1/120$. Calculate the probability that at most one of the damaged houses is insured.

Solution for PROBLEM CORNER 2022

The number of subsets of a set of ten distinct two-digit numbers is 1024 ; removing the empty set and the complete set we are left with 1022 . The maximum value of a two-digit decimal number is 99 , so the maximum sum any subset could have is 990 .

Consider a function that maps a subset to its sum. This function cannot be injective because there are more subsets than possible sums. This means there must be two distinct subsets that have the same sum. Remove any common members from these subsets and what remains will be disjoint subsets with the same sum.



Mathematics Department

2023 Alumni News

'42 Cleona May (Opgrand) Harman '42
 May taught High School math two years, Sleepy Eye, MN (1942-43) and Hoffman, MN (1943-44), before she enlisted in the Army (1944) for Physical Therapy training. She completed Phys Therapy Training in Oct 1945 at Percy Jones Hospital Center. Was discharged from active-duty June 1946. Obtained MS degree in Phys Therapy from Stanford Univ. in Aug 1948. Married Ward Harman in Aug 1949. She continued work as a Physical Therapist as well as becoming a licensed Broker in Real Estate in California. They had two daughters and a son. Unfortunately, Alzheimer's disease took her life on Dec 25, 2016 at the age of 96 after a lengthy illness. Ward Harman (Our deepest sympathies to you Ward.)

'48 Virginia (Trowbridge) Stangeland '48
 I may be the oldest Math major still writing to the Alumni News. I'll be 97 on Sept 1, 2023. My husband died 10 years ago and I lived alone for 8 years. When I had some health problems, my children decided I needed some help. My daughter, Jean, retired from her dental assistant job and came to live with me. She cooks, cleans, and does the driving. I now use a walker for safety, but am able to care for myself. We still go to athletic events at Barnesville High School.

I'll write another note next year if I'm still alive.

'54 Kenneth E. Garland '54
 In June of 2023 it will be 69 years since my graduation from "MSTC". That also means I celebrated my 90th birthday in November 2022. So I've seen a lot of changes in 70 years, and enjoyed a very fulfilling career; thanks to MSUM and the University of Minnesota (where I completed a MA and PHD by 1966). I am very grateful for my career and that I am able to give some back to MSUM through a math scholarship. I have been in good health these past years, although I did have a minor case of COVID in November 2022. Thanks to MAYO located

in Phoenix, I have excellent medical care. I am proud of the MSUM math department, and the diversity of careers and students they display at present. However, they still have maintained an emphasis on producing excellent math teachers. That emphasis is very much needed to assure a quality education for all students in the many middle and high schools across the USA. Keep up the excellent job MSUM Math Department.



'57 John Haugo '57
 John is a native of Waubun, MN where he graduated from high school in 1953. He graduated with his B.S. degree from Minnesota State University-Moorhead (MSUM) in 1957 with majors in Mathematics and Physical Science. John received his M.A.

in 1964 and his Ph.D. in Educational Administration and Quantitative Methods in 1968 from the University of Minnesota.

For nine years after graduating from MSUM, John was a senior high school mathematics teacher and head football coach at Parkers Prairie (MN) and Park Rapids (MN) High Schools; from 1969 until 1972 he served as Director of Information Systems for the Minnesota State University System; from 1975 to 1981 he was CEO of the Minnesota Educational Computing Consortium [MECC], a statewide educational computing services organization; and for 25 years before his retirement in 2008, he served as CEO of several Minneapolis-based healthcare software companies: Serving Software, Inc., the nation's leading healthcare scheduling company, and SearchAmerica Inc. a provider of

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Internet-based patient financial information for hospitals throughout the United States. All three companies have been recipients of the Minnesota Technology Association's Software Company of the Year awards.

John has been active in community and church activities. In the 1970s John was chairman of the Mounds View District School Board and has been president of his Lutheran congregations. For six years John served as chairperson of the University of Minnesota's College of Education and Human Development Dean's Advisory Council. He was on the Board of the MSUM Foundation for six years and was recently recognized as an emeritus director. John has received Distinguished Alumni Awards from the University of Minnesota, from MSUM, and from the Minnesota Athletic Administrators Association. He is also a member of the Dragon Hall of Fame at MSUM and the donor of the Haugo Board Room at the planned MSUM Alumni Center. In 2017, John received the prestigious Outstanding Achievement Award from the Board of Regents at the University of Minnesota.

John and his wife, Sharon, live in Hudson, Wisconsin and Green Valley, AZ. They have three adult children and eight grandchildren.



'58 Jerry Arzdorf '58
Graduated with a BS in Math and Science.

1. Math Teacher Colorado Springs (North Jr. High) 5 years.
2. NDSU Fargo 1 1/2 M.S. in Guidance and Counselor.
3. Math Teacher Anoka-Henn & Department Chair, VR at Roosevelt Jr. High, Blaine.
4. Roosevelt Jr. Counselor, Dept Head & Asst. Dean of Students for 4 yrs.
5. Counselor & Dept. Head at Anoka Tech College, Anoka, MN for 28 yrs.
6. Retired in 1993 & still live in Blaine, MN with wife Jeanne who graduated from MSTC in 1957.
7. 2 children, 3 grandchildren & 1 great, great grandchild.
8. Had Marion Smith for 90% of my classes at MSTC.

Ronald (Ron) Welch '58

Hello fellow Dragons!

I have just been reading over the 2022 Alumni News. The Marion V. Smith Memorial Scholarship brings back memories of the very hardworking Marion with a heavy load teaching most of the math courses back in my day, ie 1954 to 1958! Then I believe that this week is homecoming, and I was homecoming co-chairman back in 1957. Could it be 65 years ago?? Ha.

Upon graduation, I joined my wife Loretta teaching in Fertile, MN for four years. I graduated from Moorhead High in 1954, and then came back to start teaching at Moorhead HS in 1962. H&R Block came into Fargo that year, and offered classes to prepare employees. I needed some additional income, so took the class and worked part-time for them that year. Little did I know where this experience would lead me!

The Russian Sputnik motivated the US congress to offer scholarships to high school math teachers to update. I applied to colleges from Texas to California, (Someplace warmer) and received an academic year grant at San Jose State University for 1963-1964. The grant also included money for lodging for the family. (Two daughters ages 1 and 4 & spouse Loretta)

We did come back to again teach at Moorhead High for the year 1964-1965, but the winter that year seemed colder than usual, (Ha) and one of the teaching contracts that I had received in San Jose, CA became available. Really difficult to leave family and familiar surroundings, but our grandparents advice was "You have to go where your future is."

I put a note on the bulletin board at my California school, that I had experience preparing income tax, if anyone needed that service. In short order, I had quite a few clients, and there was a request for tax and investment advice, so I took classes and became a financial adviser and stockbroker as well. When the number of income tax and investment clients exceeded 600, I left teaching. Our youngest daughter, (Now age 60) has most of the income tax and investment business. But, believe it or not, I still am active with my "Long time" clients. My spouse Loretta passed away in 2021, so I have added incentive to be visiting with them.

So, if there are any 1958 classmates, or ex-students (Fertile or Moorhead High School) that are reading the Alumni News, and you may have been wondering whatever happened to this senior citizen, you now have some news. Would have really liked to attend Dragon homecoming this year, but still not traveling with the threat of COVID.

'62 Kurt Ross '62
I retired in 2002 after teaching Math and Science for 40 years. I taught Middle School and High School in the Sauk Centre and Orono schools. In addition to teaching, other duties included Math, Science and Technology chairs. Presently my wife Carol and I live in Plymouth, MN enjoying family, grandchildren and retirement.

'65 Jim Galvin '65
1965-1970 Taught Math grades 7-12 and coached football, basketball, and baseball Villard, Minnesota.

1970-1999 Taught High School Math and coached basketball and football in White Bear Lake and was Athletic Director (five years).

1999 to now - Retired, do some substitute teaching, and run youth basketball clinics.

Married, three children, and six grandchildren.

I enjoyed going to school at Moorhead State.

Lois Jean (Lokstad) Benish '65

With regrets I need to share with you that my mother - a graduate - passed away in 2018. She used a few different names over the years, so I'll cover that first. The mailing label shows "Lois Benish". Benish was her married name, but she graduated in June, 1965 as Lois Jean Lokstad with two degrees - Bachelor of Arts and Bachelor of Science. She also went by the nickname of "Lolly" when younger and at her hometown of Newfolden, MN. She used "Jean" throughout her years as a computer programmer in the airline industry.

I enjoyed reading alumni news after her passing, and I could not bear to close the chapter until now - five years later.

Mom had a strong work ethic and a long and good career in computing. When I was very young, I remember having a chance to play with the key punch programming data cards when I was able to visit her office. I especially think of her beliefs she passed to me such as promoting a just society and ensuring the well-being of others. I consider "Others First" to be an appropriate epitaph to remind me of the love she showed me and shared with others. William "Bill" Carl Benish
(Our deepest sympathies to you Bill.)

'66 Diane (Holthusen) Lopez '66
Weather is our news. Five and six foot snow drifts all around our house. And it is April!
Andy and I spent January and February living in the desert surrounded by mountains near Las Cruces, New Mexico. Quiet, warm and great walking paths. A trip to Texas to see Andy's family and then back to Minnesota. Here we are busy with AARP, many meetings, and volunteer projects.

'67 Thomas P. Cooper '67
Tom passed away on 7/11/17 - class of 1967 - Masters - Computer Science, Iowa State, Ames, Iowa - class of 1969
Career: Univac/Sperry/Unisys 1969-2012
Peg Cooper - B.A. - Sociology/Social Work
(Our deepest sympathies to you Peg.)

'68 Bill Anderson '68
Still-retired

Gerald (Jerry) Erickson '68

I celebrated my 15th year of retired life on February 28, 2023. Those years have gone by much too quickly, but they have certainly been enjoyable. My wife, Ruth, and I have been blessed with good health which certainly helps. We enjoy taking day trips to different small towns around the area for lunch and just exploring new areas and meeting new people. The last few years our summers have been taken up with raising Monarch Butterflies, from the tiniest of eggs to final release of those beautiful creatures. In the past 2 years we have raised and released about 250.

Our four grandkids keep us busy as well with their activities. We've become acquainted with lots of concert and sport venues around the area. We stay involved in our Church as my wife sings in the choir and I help out with cataloging and filing the music. In 2013 we were fortunate enough to go with our Church group to the Holy Land which was an extraordinary experience. In 2009 I decided to try my hand at painting in Watercolor which has proven to be a great hobby. Attending workshops both in person and via the internet has allowed me to make many new friends locally, nationally, and internationally. And now coming up in June 2023 it will be 55 years since I graduated from Moorhead State College. It has been a good run. Go Dragons!!

'69 Jerome A. Degerness '69
My year started in Chicago at the American Baseball Coaches Association Convention. The city was in COVID shut down, but the McCormick Center event for thousands went on as scheduled devoid of guest services. On the third day I started feeling a bit off, so I stayed in my room and watched sessions online. I planned to leave the morning after the convention and by nightfall of the last day, few guests remained. No open hotel restaurants so I set out to find food - passing bars and restaurants, well-lit with fantastic décor - ALL EMPTY! At the next hotel, a solitary sole at the front desk pointed to a hall saying, "that way on your left." In an upscale dining room, a solitary masked figure in formal attire took my order. It was like a scene from "The Shining" where Jack Nicholson is an insane writer confined with his family as winter caretakers

of a remote hotel. Feeling like Jack I dined and returned to my hotel. The next morning, I was glad to fly home where I tested positive.

Things got better.

Later in January, I played in the Bob Wagner Wooden Bat Classic in Fort Myers. The tournament includes a fund raiser for challenged athletes. I stayed around through the beginning of February for the Roy Hobbs sunshine Classic. I went to Las Vegas for more baseball the first two weeks of March.

I coached two 16-19U teams this summer. The Gopher State team had a wonderful year finishing third in the postseason tournament. The Legion 1A team did not win any games.

I had a good year playing 60+ baseball this summer. Two 70+ "All Star" games leveled the playing field for us geezers. I had cortisone shots in both knees and my left hip prior to the annual MSBL tournament in Phoenix. The first week went well, but we played on an artificial surface the first game of the second week and that resulted in hip problems. Two weeks of not playing much followed on teams that expected to win championships but struggled to win more than a couple of games. It still was fun to play ball.

Hurricane Ian wiped out the November baseball tournaments in Fort Myers.

I hit the three-quarter century mark in June. I still feel good and would like to say nothing has changed, but I keep track of my physical performance parameters and every metric quantifies decline. The good news is that I still have a way to go before I cannot do anything.

Still dancing. The venues are slowly reemerging after a total shut down under COVID. Some folks remain reluctant to come out in public more than necessary. Pre-COVID there was someplace to dance every night. It is back up to three or four in the MSP area. Fort Myers, Phoenix, and Las Vegas seem back to normal.

My family had a reunion in October at the Degerness family farm. All my brothers, children and grandchildren were there. Everybody had a wonderful time exploring the building site and operating the various vehicles. With all assembled, we took what may be the only family portrait snapped by a drone courtesy of technical support from my cousin Roger. The Saturday night meatball supper tasted as good as ever.

My immediate family gathered as usual at Easter and Thanksgiving in Sioux Falls. John, Carrie, and Luke (2) live in Minnetrista. Jillian bought a house in Kyle, Texas which is closer to her work near Austin and gives Oliver a back

yard to run around and bark at things. Megan is teaching, managing Chandler (13) and Thatcher's (8) activities, and supporting Mitch in his last year of medical school.

I served another year as Chair of the Woodbury Lions Club Scholarship Committee.

I keep learning new songs to play and sing. "Across the Great Divide" was last up with "Closing Time" in the works. I learn two or three a year.

I think I have retired from skiing.

'70 Lyle Thorstenson '70
I am a retired Eye physician/surgeon.

From Fargo Central High School class of '66, I enrolled in MSC (Moorhead State College) and completed my undergraduate degree in mathematics education with a minor in health physical education and recreation in 1970.

My fondest memories are of MSC math teachers long gone but not forgotten. Not to leave anyone out, MSC teachers were all great, but Marion Smith, Rose and Dale Shaw left greatest positive impressions and knowledge with me.

MSUM prepared me to be a teacher and a coach. I got my first real job in the teaching profession at Benjamin Franklin Jr. HS in Fargo from 1970-1973.

From there, I married the love of my life, Pam Reardon of Devils Lake and we pursued my path of a medical career. Serving mostly Texas citizens, we have traveled the world bringing sight to the blind. MSUM played a huge part in any success in my life. It has been grand.

Everyone should be so lucky. I am grateful to MSUM and the positive influence in my life.

I can be found in Farmers Branch, Texas and I would love to hear from my classmates or anyone from my beloved MSUM.

'72 Michael L Market '72
After 30 plus years as principal of my own CPA firm, I've moved into semi-retirement with this last tax season probably the last. Looking forward to no more deadlines....

My wife Renee and I made up for pandemic travel in 2022 having gone to Kauai in January, Greek islands in May, a Rick Steves Sicily tour in September plus additional 10 days traveling up the Italian boot thru Tropea, Naples and Rome. Returned to Moorhead in October for a fraternity reunion. Best to all of you....

'73 Jerry Hultstrand '73
 Graduated with B.S., major in Mathematics and minor in Computer Science. Currently retired, living in Lancaster, PA.

Last employment was in Elgin, IL 1995 - 2016, before that was in Northern New Jersey for 17+ years.

Employers include Monroe Systems for Business, Panasonic and Judson University.

Ray Farwell '73
 I retired from education in 2011. I taught (math) and coached (cross country, track and basketball) for 9 years in Carlton, MN and Bemidji, MN. Served as a principal and AD for 5 years and then 24 years as a Supt. of Schools. The longest was for 14 years in Montgomery-Lonsdale. When I retired I moved back to the family farm near Alberta, MN.

After retiring I ushered at spring training games in Florida for 6 years for Tampa and Philadelphia and also the MN Vikings. I also worked PGA events (running scoreboards and hole marshaling) in California. Now it is fishing, gardening, and ten winter weeks in Maderia Beach, Florida.



'75 Elaine (Spielman) DeGroot '75
 In 2013 I retired with 30 years of Federal Service (over 12 years of active duty service in the USAF and the remaining years as a civil service employee with the VA, USAF, and US Fish & Wildlife Service.)

During retirement, I began writing fiction stories. In 2022 my first books were published: The Consequential Love Series: Resolute Love, Challenged Love, and Victorious Love, a romantic suspense series. Entering the world of being a published author, I now manage a website (www.romance-degrootified.net) and a Facebook author page (<https://www.facebook.com/RomanceByDeGroot>). 2023 has started with the publishing of a romantic comedy, Accidental Attraction.

I now live in Upstate South Carolina. My husband, Mike, is a retired US Air Force Chief Master Sergeant and is loving life with the year-round golfing! We have a pup, Missy, a Belgian Malinois-German Shepherd mix, who keeps us busy and entertained. They are an inspiration, a distraction, and my life.



'76 Spencer Hjelle '76
 I retired from the ND Air Guard in 1991 after serving 22 years. The day wasn't great but the Air Force pension sure is, great benefits included.

I retired from my full-time job with the Minnesota Department of Revenue in 2017 after working there for 40 years. I worked in the Eveleth office and I appreciate this state pension also. I appreciate the Social Security also.

I still miss Doctor Legg's proofs in his math classes. He was a very good teacher and I enjoyed his classes a lot. I saw him about 15 years ago in Virginia at his wife's funeral. He looked great and I still want to emulate him. I hope he is doing well.

My daughter, Jaclene, got married and they moved to Elkton, Maryland. I have been there twice and toured D.C. and Gettysberg, etc. Elkton is a nice town of 20,000 people with no crime. Her husband works at Gore & Company as a chemical engineer. They have lived there 24 months and haven't shoveled snow yet.

Jaclene is an accountant for CH Robinson in Eden Prairie. She graduated from Winona State with a major in accounting and an economics minor.

ViAnn Olson '76
 Still enjoying retirement after 40 years of teaching mathematics.

'78 Brian Hanson '78
 I have retired after 35 years as a Professor at the University of Delaware teaching climate science, meteorology, and environmental science to undergrads, and how to build and run climate models to graduate students, while doing research on glaciers and polar climate. One of the most ironically useful things I learned from MSU (before it was MSUM) was taking linear algebra before we had computers, because my early career depended greatly on knowing the details of how to do matrix algebra by hand to figure out how to program solutions to enormous sparse matrix problems for building finite-element models. Moved to Oregon because I helped teach many field courses in the Cascades, did not like the humidity of Delaware, and wife was never moving back to the cold of Minnesota.

'80

David W. Jacobson '80

I'm a professor in the Department of Mathematics and Statistics at Metro State University in St. Paul. Besides teaching courses in Statistics and Data Science, I am the chair of our Industry Advisory Board which consists of nine members from companies in the Twin Cities. In addition, I coordinate internships for the department.

My wife, Deb, and I are avid travelers. We're excited about a trip in May to Yosemite National Park and the surrounding area. We especially enjoy visiting our children: Justin (Dallas, TX) and Emily (Ann Arbor, MI)

'83

David H. Sederquest '83

Retired from position as N.D. Regulatory Affairs Mgr for Excel Energy in July, 2022. Currently President of Moorhead Rotary Club, and working part-time for a local builder.

Married to MSUM alum Jane (Remark); we enjoy visiting our 3 boy's families and seeing our 4 granddaughters and 4 granddogs. Busy hiking, biking, kayaking and spending time at our lake place.

Ilo (Lewis) Myhra '83

I am a Principal Support Engineer for Precisely, Inc. For the past 20 years I have been providing support for our company's IBM software products used by clients all over the world. I currently work out of my home office in Moorhead, MN, and I am married to NDSU alum James Myhra.

'86

Katie (Carlson) Choi '86

Happily married to Sang Rog Choi, starting on our 5th year... Woo-Hoo! We own a Recycling Bottle Depot that I manage, work 3 days a week counting bottles and cans, do the books/accounting/payroll, shipping, etc. My husband and I enjoy traveling and doing Mission Work (building churches and getting Pastors placed) in Nicaragua, in small towns/remote areas. We just completed the 11th church from scratch/ground zero and church number 12 is being constructed right now.

I am gearing up for my final retirement within the next year or two (I hope) of my various life careers and looking forward to doing more traveling with my husband. I love living in Canada, but miss so many friends and family in the States that I don't get to see very often now.



Gary Seiler '86

Hello from a 2021 retiree!

I sure appreciate how the Mathematics Department prepared me for my career! Of course mathematics is needed by NASA, but it is also needed to put food on the family dinner table.

My work life was almost exclusively with Tyson Foods (merged with IBP). It started by providing statistical analysis for the hedging requirements of the company.

Then there was a period of doing general data analyses for sales departments as well as operational departments. While no high-level math was needed, the mathematical mind was integral at identifying many high dollar opportunities.

Work also included a multi-year project determining the optimal location of building a network of forward warehouses. Support was also provided from the actual construction to bringing them fully online.

Another job opportunity was in an IT area creating and supporting linear programming models which optimized specific production areas.

The last area involved demand planning utilizing statistical modeling and collaborating with several business departments. It forecasted what might be needed to help feed the world.

Now I am spending 100% of my time with my wife and four grown daughters. One is married and a second one will be in June. Someday I'm sure math will help as a grandparent too!

'87

Joel Langenfeld (Math) and Karen (Hostetler) Langenfeld (Philosophy, Special Ed) '87

We will be celebrating our 34th wedding anniversary this year. We live in Shoreview, MN, and would be empty-nesters if the kids ever stopped coming back. Joel is a data analyst for Delta Dental of Minnesota, and Karen is a policy analyst for MNSure. We have two children, Nathan, who is finishing a degree at Mankato State, and Betony, who is living in Denver while hoping to take up grad school in geology.

Kevin Linderman '87

I moved to State College in July of 2020 to take on the role of department chair for the Supply Chain & Information Systems department in the Smeal College of Business at Penn State University. Prior to that I was at the University of Minnesota in the Supply Chain Management department for 22 years.

'88 Ruth Hetland '88

Ruth is the Director of Product Management at Allegiance Group and a contributing author in the anthology "Deserts to Mountaintops: Our Collective Journey to (re)Claiming Our Voice". Ruth's chapter, titled "Nothing Really Happened", is one of 22 stories of strong, courageous, resilient women sharing their desert to mountaintop experience to help others.

'89 Paul Edwards '89

I received a letter regarding updating your newsletter. My husband Paul Edwards was a graduate, August 1989. Paul died in August of 2014 after battling leukemia for one year. Paul taught HS mathematics for 12 years, completed his masters in statistics at St. Cloud State University and worked as a marketing statistician. Michele Edwards

(Our deepest sympathies to you Michele.)



'90 Rod Oman '90

In September I will be celebrating my 25th year of ownership of The Imagery Portrait Studio. I am a 2-time MN Photographer of the Year and 7-time Twin Cities Photographer of the Year.



'93 Debra (Frank) Haglund '93

Deb moved to Denver, Colorado in August '93, and married Dave Haglund in April '94. She was hired by the Colorado Department of Transportation in December '93. She worked for their Accounting, Right-of-Way, and Human Resources offices as Accounting

Technician, Administrative Assistant, and HR Technician. Before leaving CDOT, she was work leader for the HR Tech Team. In February '22 Deb was promoted into the Governor's Office of Information Technology as a Developer II. Now she supports enhancements to SAP Human Capital Management (HCM) along with her co-worker husband. Deb & Dave moved to the Denver suburb of Parker, CO, in June 2012, and were assigned to 100% remote work in 2021.

Jeff Jacobsen '93

Chief Financial Officer, Allina Health | Aetna St. Louis Park, MN

'94 Flynn Dustrud '94

I teach math at Madison Area Technical College.

'08 Eric Eager '08

Vice President of Research and Development, SumerSports, Palm Springs, FL.

This fall I left my job at Pro Football Focus to join SumerSports. This was chronicled in the Wall Street Journal day of <https://www.wsj.com/articles/nfl-analytics-paul-tudor-jones-11663032922>.

I work at the interface of mathematics and football to help NFL teams optimize their rosters.

I live in Atlanta with my wife, Stephanie, and two kids, Madeline (10) and Chloe (9).

'12 Nicole Anderson '12

Nicole lives in Moorhead with her husband, Eric Hendrickson, their cat (Coley) and dog (Tardis), and the newest member of their family – baby Rebecca. Nicole currently works as the Project Manager with MSUM's Office of Institutional Effectiveness.

Rebecca was born in August 2022 and thanks to a union paid parental leave benefit and an understanding office, Nicole was able to be at home with Rebecca for a total of eighteen weeks. It was a truly wonderful and difficult time.

In her spare time, Nicole enjoys going for walks with her family, gardening, working on home improvement projects, and taking in the sunset on their backyard patio.

Heather (Johnson) Sauer '12

I have been working at the YMCA of Cass and Clay Counties in Fargo, ND for 10 years now. I am currently the Aquatics Director. My passion for water - swimming and diving throughout high school and college, water-skiing, and triathlons is still alive and well.

continued >>

I got married in 2017 and Nic and I currently live in the small town of Comstock, MN just south of Moorhead. I've come to miss mathematics, and have recently finished an online bookkeeping course. Although my job is in recreation management, my favorite part is the budgeting and watching trends with regards to any data!

'16 Shaochun Chen '16
Microsoft
Azure Sr. Technical Advisor - Fargo

'17 Kelli Vosberg '17
Following my graduation from MSUM in 2017, I enrolled in the Master of Engineering program at UND for Mechanical Engineering which I completed mostly online. I started working for Bobcat before I graduated, which is also 25 minutes from my hometown which I moved back to after graduating from MSUM.

'19 Sam Holen '19
I spent some time, 3 years, working as an engineer in Alexandria. Last fall (2021) I decided to return to school. I am now in my second semester of Graduate Studies at the University of Iowa pursuing a Ph.D. in Mathematics. I am thoroughly enjoying the program so far!

Leslie Miller '19

My 2022 summer included moving to Texas and getting engaged! I have continued working as an Actuarial



Analyst II for State Farm Life Insurance Company, and my free time still mostly consists of studying for actuarial exams. In 2022, I passed two FSA exams and am working hard to pass one last time. I am a mentor for the STEM Stars Actuarial Scholars Program, and I periodically mentor some of my co-workers as they study for their exams. I also recently

started a volunteer position on the Young Adult Advisory Committee with the State Farm Federal Credit Union. For any aspiring actuaries, do not underestimate the power of learning how to learn (a few professors can point you in the direction of a few resources I'd recommend), and I'd be happy to connect with anyone who may have questions about studying or the career!

'20 Luke Sanderson '20
I am currently working at Dakota Air Parts Inc. in Fargo, ND as a Procurement Specialist. I'm also serving my second term as township treasurer for Elmwood Township of Clay County.

'21 Jena (Backes) Infanger '21
Since graduating in December 2021, I had 2 long-term subbing positions in the spring of the 2021-2022 school year. The first was in Osakis Public Schools as a FACS teacher. This was a really good experience for me as I got to practice more of the management systems without having to focus on content. After this, I was a long-term sub at Melrose Public Schools as a high school math teacher. For the 2022-2023 school year, I got a full-time position at Long Prairie-Grey Eagle Schools in Long Prairie, MN where I am currently teaching a variety of algebra classes for 8th -12th grade students.

In more personal news, I have gotten married (now Jena Infanger) and bought my first home since graduating.

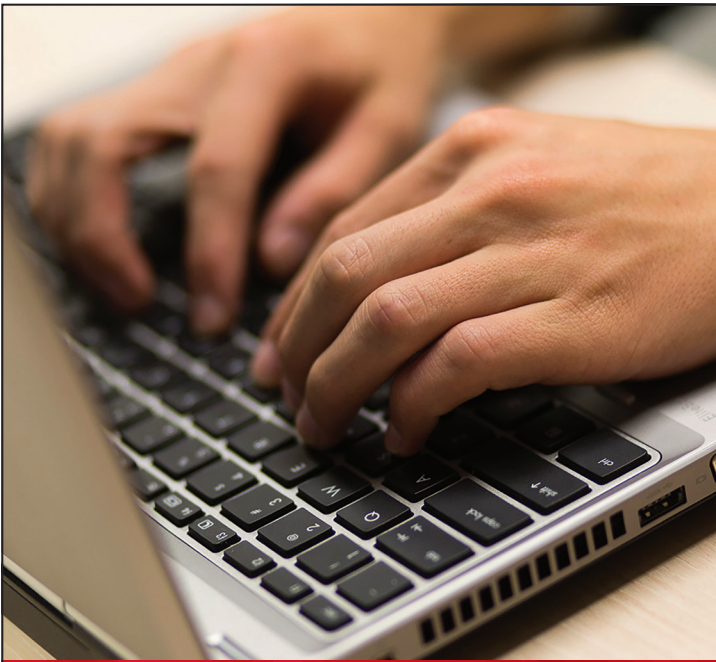


'22 Renzen Caughey '22
I have been working as an Actuarial Associate for Segal since May of 2022, working in their pension benefits department. I also got married in August of 2022 to Hannah Bankers (also an MSUM graduate). I'm able to work remotely, but I occasionally travel to Chicago for in-office get-

togethers. I recently passed the Pre-Actuarial Foundations Module and passed Exam SRM in January 2023. I'll be sitting for Exam FAM in July.

Emily Greene '22

In August 2022, I was offered my dream job as a math teacher at the Moorhead Alternative Learning Center, Moorhead Area Public Schools. We are in the 4th quarter of the second semester and it is a great fit for me! I'd like to take this opportunity to thank MSUM and especially the math department because it is truly one of a kind. Go Dragons!



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We encourage you to make a contribution to the MSUM Foundation when they contact you in their annual appeal. Please consider designating your donation to a mathematics department scholarship (there are several) or to the mathematics department discretionary fund. In fact, we now have an endowed fund for actuarial among them. The phone volunteer may not ask if you want to designate, but your expressed wishes will be honored. Thanks.

