

2022

The Wright Message, 2021-2022

University of Northern Iowa. Department of Mathematics.

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THE WRIGHT MESSAGE

DEPARTMENT of MATHEMATICS

2021-2022

UNI / University of Northern Iowa



Dear Alumni and Friends,

In the 2019-2020 edition of the Wright Message, I began my letter by lamenting what, at the time, seemed like daunting challenges we were facing. Whether by design or by happenstance (I cannot recall), I was curiously and uncharacteristically quite guarded and left unsaid what those challenges were. I must have been thinking about the sharply declining economy, the ferocious and largely mysterious deadly virus making its way from both coasts into the nation's interior, and a deepening sense of unease and trepidation about what lay ahead. After all, we had just been through a spring semester like no other, having basically shut the campus down after spring break and moving all our classes online.

I could not have known then just how much more challenging the Fall 2020 and Spring 2021 would be. I had no inkling then that our faculty would find themselves teaching in rooms scattered across campus to accommodate CDC's social distancing requirements. Neither could I have guessed that the now familiar vocabulary of *face-to-face*, *hybrid*, *synchronous online*, *asynchronous online instruction*, *Zoom classes*, *breakout rooms*, *masks*,

quarantine, and *isolation* would make its way into the lexicon of commonly used terms. And, of course, I was totally in the dark about what it would take to implement these modes of instruction and public health practices.

The logistics and mechanics necessary to meet social distancing recommendations, within the constraints of our minimum class size requirements, turned out to be quite difficult. Faculty teaching lower-level courses were given three options. They could hold their classes in fully online mode, if they had a medical reason, or they could teach in larger rooms outside Wright Hall (some of our faculty taught in the Commons, others taught in the big lecture halls in the Curris Business Building or in McCollum Hall, and yet others taught in the Tower Center (between Bender Tower and Dancer Tower, above the dining area) or they could teach in a hybrid mode — meeting face-to-face with a third (or half) of their class in each session and online with the remaining two-thirds (respectively, the remaining half) of the class for MWF classes (respectively for TTh classes). This meant that some of our faculty had to do two different preparations for each class session — a truly taxing task.

Students, too, found themselves having to adjust and acclimate to the new methods of instruction, new ways of learning and new learning environments. And overlaying these challenges and driving them was the omnipresent concern over the pandemic spread, which seemed to have no end in sight. These were truly trying times for

our students, faculty, and staff. The good news is that we survived it all and, in many respects, even succeeded. Better yet, we lost no faculty or staff and, to the best of my knowledge, no students in the department to Covid-19, even though several people, especially students, caught the virus.

We begin this edition of the newsletter with the "Around Wright Hall" segment in which we give a high-level summary of noteworthy activities in the department over the covered period. We follow this up (in no particular order) with spotlights on actuarial science major, Samantha Bennett, the winner of the Department of Mathematics 2021-2022 Purple and Old Gold award; secondary teaching majors (now recent graduates), Sydney DeBruin and Lauren Falck; (pure) mathematics major, Aaron Kirchman; elementary education major & (K-8) math minor, Baylee Smith; (pure) mathematics graduate student Carissa Cummings; and alumni Emily Bisenius and Nelson Colón. Our faculty spotlight this year is on Dr. Mike Prophet and our donor spotlight is on Diana Anderson. We round out the newsletter with articles on the latest retirees, Dr. Joel Haack and Mark Jacobson, and our latest hire, Dr. Justine Randunzel, who took over as the Professional and Scientific staff running the Statistical Consulting Center after Mark Jacobson retired.

As always, we are grateful to the people we feature in the newsletter and very much appreciate their willingness to abide our requests for information.

(Continued on next page)

We are also indebted to them for allowing us to share their stories with our readers. We hope that the stories will serve to showcase the promise of a UNI education and to highlight the generosity of friends and alumni who, year-in-year-out, help to reduce the cost of an education for more and more students. We also hope you will find the variety and uniqueness of the experiences portrayed in the stories as engaging as we found them.

We have been saying it so often in the last two years that it almost sounds cliché. But it is true. The Covid-19 pandemic has put us through the wringer. We hope it is now largely behind us, but we can't be sure. What is clear is that we may be dealing with its impact and aftereffects well into the foreseeable future. Notwithstanding the difficult challenges we have been facing, the state of the department is strong. We are a resilient lot and we are sure we will see our way through these difficulties, and come out better on the other side.

We continue to have retention and graduation rates that are much higher than those at our peer institutions. Our graduates are making their mark in all segments of the economy and leading productive lives. A major reason we are able to continue to do what we do, even as we face tough challenges, is because of the strong support we get from you, our alumni and friends.

Year after year, you have voiced your confidence in what we do through your donations to our UNI accounts. Your generous support makes it possible for us to significantly reduce the burden of debt that saddles many of our students. All told, we received \$80,929 in pledges & gifts and \$50,000 in planned gifts between July 1, 2020 and to June 30, 2021, and \$173,179 in pledges & gifts and \$30,000 in planned gifts between July 1, 2021 and now. Most of the money funds scholarships, the remainder goes to accounts that cover other expenses such as equipment, faculty professional development and travel.

The department awarded \$186,826 in scholarships to undergraduate and graduate students in the 2020-2021 academic year and \$213,717 in the 2021-2022 academic year. It is noteworthy that our alumni and friends not only continued to support us during the pandemic, but increased their donations. As you know, students across the nation are graduating with huge student loan debts. Here at UNI, current average indebtedness for undergraduates is \$24,593 per student. Our students greatly appreciate any financial support we can offer them. We are

appealing for your help again this year.

If you are able to contribute, please use the form that is included at the end of the newsletter to direct your contribution to the account of your choice. Again, thank you for your support. We hope the last two years were kind to you and that this year will be even kinder, and healthier for you. Stay safe.

Professor and head



Douglas Mupasiri

2021 - 2022 TENURE-STREAM FACULTY:

Kimberly Conner

Mark Ecker

Sam Eskelson

Heather Gallivan

Theron Hitchman

Elizabeth Hughes

Blair Izard

Syed Kirmani

Min Lee

Shangzhen Luo

Catherine Miller

Douglas Mupasiri

Vicki Oleson

Michael Prophet

Suzanne Riehl

Chepina Rumsey

Douglas Shaw

Marius Somodi

Adrienne Stanley

Olof Steinthorsdottir

Brian Townsend

Bill Wood

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AROUND WRIGHT HALL

Student research and presentations

Lydia Butters, a senior math teaching major, was awarded the Undergraduate STEM Research Scholarship from the Iowa Space Grant Consortium for the 2021-2022 academic year. Her project involved determining the impact of social justice mathematics lessons on high school students' and preservice teachers' understanding of social issues and how math can be used to explore those issues. She presented her work in poster format at the Iowa Space Grant Consortium Symposium on April 4, 2022.

Emily Terrones Moore, a senior math teaching major, completed her undergraduate honors thesis project during the 2021-2022 academic year under the supervision of Dr. Heather Gallivan. For her project, Emily's goal was to determine the impact of teaching a social justice mathematics lesson to high school Algebra I students on their perceptions of their own mathematics ability and confidence as well as their perceptions on the utility of mathematics to analyze social issues. She presented her project to UNI faculty and students on May 6, 2022.

The 15th annual **Research in the Capitol** event took place on February 28, 2022 at the Iowa State House. Among the 44 undergraduate students from the three Regents Universities, who presented their work to the legislators, were two UNI Mathematics majors: Samantha Bennett and Lydia Butters. The titles of their posters are below:

- Samantha Bennett: *Assessing and Meeting the Mental Health Needs of Student Athletes - A Case Study of The University of Northern Iowa*
- Lydia Butters: *Teaching Social Justice Issues Through Mathematics Curriculum.*

During the summer of 2021, Sydney Hauser, a math major, completed a research project under the supervision of Dr. Adrienne Stanley. The title of her project was *Visibility of Lattice Points*.

Congratulations! A UNI student won a Wiley Stay the Course Grant. Instructors across the country nominated students experiencing financial hardship for these \$500 emergency assistance grants. From a pool of nearly 350 candidates, 200 winners were selected. The goal of the program is to help students persist in their college careers, in spite of pandemic-related economic challenges. Calculus student Felicie Alexandre, nominated by Dr. Suzanne Riehl, very much appreciated the grant. Her comment -- *My goal is to be a medical*

care provider. I plan to go into family care. Helping others is a passion of mine and I will do all I can to make sure everyone has proper medical care when I am a physician.

The **UNI Math Club** met at Dr. Catherine Miller's house during the last week of classes in fall 2021. The participants made s'mores and played math charades. Students picked a math word or phrase out of a hat and had to act out the word to get other students to say the word.



Faculty awards

Congratulations to Dr. Catherine Miller for winning the 2022 Beverly Funk Barnes Educator Excellence Award! The Beverly Funk Barnes Educator Excellence Award is focused on rewarding university faculty who continually create new value for those they work with through dedication, passion, and creativity for the benefit of the University of Northern Iowa.

Congratulations to Dr. Olof Steinthorsdottir for winning a Northern Iowa Student Government Above and Beyond award! These awards are given by students to recognize faculty and staff for their commitment to student development and success. Two awards are given out, one focusing on student learning (won by Dr. Steinthorsdottir) and the other on student success.

Faculty presentations

Dr. Kimberly Conner: "Developing Students' Understanding of Proof through Revising Proofs Based on Peer Critiques", jointly with Brooke Krejci (Winona State University), PME-NA 43 Conference in Philadelphia, PA October 14-17, 2021.

Blair Izard, Heather Gallivan, and Chepina Rumsey: "Advancing Preservice Mathematics Teachers' Cultural Awareness Through an Embedded Methods Course Experience", PME-NA 43 Conference in Philadelphia, PA October 14-17, 2021, Virtual Poster Session.

Dr. Kimberly Conner: "Elementary and Secondary

Teachers' Questioning Patterns During Number Talks", jointly with Brandon McMillan (Brigham Young University) and Candace Joswick (UT Arlington), 26th Annual AMTE Conference in Las Vegas, NV Feb 10-12, 2022.

Dr. Shaw decided to try something new and auditioned for the Rocky Horror show at the Waterloo Community Playhouse. As a mathematician, he calculated that he was older than every other cast member by a factor of at least two. His role required him to frequently go off script and react to chaos, but teaching Math 1100 for a decade prepared him well for this task. The show was well received and the actor who played Frank N Furter recorded his voicemail message when it was all over.

Dr. Michael Prophet will participate in a workshop/seminar during the last week of June 2022 at Jagiellonian University in Krakow, Poland.

John Deere Symposium on Machine Learning, A Hybrid Virtual Conference was held on Friday, April 22, 2022, at Maucker Union Ballroom A. Speakers were

- Dr. Hridesh Rajan, Professor and Chair, Department of Computer Science, Iowa State University. His talk was on "Dependable Data Driven Discovery Framework."
- Dr. Zhengwei Hu, Senior Data Scientist, System Health Analytics Group, John Deere. His talk was on "Application of Machine Learning to Reliability Analysis in Smart Industry."
- Dr. Bijaya Adhikari, Assistant Professor, Department of Computer Science, University of Iowa. He spoke on "Data-Driven Real-Time Epidemic Forecasting."
- Dr. Aleksandar Poleksic, Department of Computer Science, UNI. His talk was on "On the Geometry of a Biological System."

Hosted by the UNI Department of Mathematics, the symposium was streamed live via Youtube. Dr. Syed Kirmani chaired the symposium's Program Committee and the Local Organizing Committee. The full proceedings can be watched at <https://www.youtube.com/watch?v=mb-ire-LQi7w>



IN MEMORIAM*



Diane Lee Baum
1932-2021

Diane Lee Baum, age 89 of Cedar Falls, died Wednesday, November 3, 2021, at MercyOne Waterloo Medical Center.

She was born on July 2, 1932, in Spencer, the daughter of Herbert and Blanche (Brunais) Sorenson. Diane earned her BA from Iowa State Teachers College in 1954, and her MA from State College of Iowa in 1957, both in mathematics. She attended Indiana University, leaving in 1970 after completing all requirements for a doctorate except a dissertation. Diane was united in marriage to Dale Baum on June 14, 1959, and they divorced after six years.

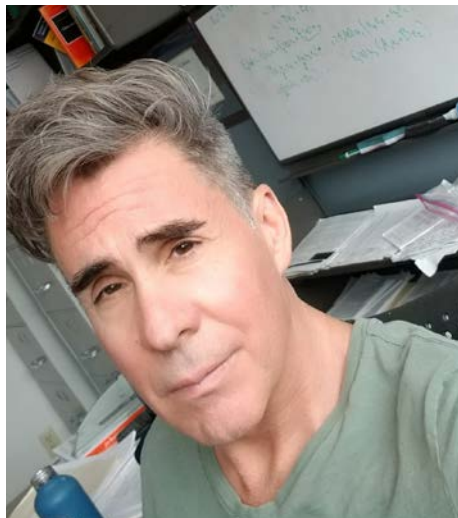
She taught in elementary schools in Iowa Falls and Duluth and then in the Mathematics Department at the University of Northern Iowa for 33 years. Throughout her teaching career, she was a powerful force, often working behind the scenes but sometimes in leadership positions. Her focus was on her students, her schools, and her professional organizations.

Diane was fascinated with trains and collected all sorts of railroad memorabilia. She traveled widely, visiting all seven continents. She loved her pets, rooted for her favorite sports teams, solved puzzles, and eagerly tackled any project that involved building or fixing something. She will be remembered for her strong opinions (stubbornness), elaborate stories, and her generosity. She enriched the lives of others; in her last years, her life was enriched by workers-who-became-friends who enabled her to remain at home.

Diane is survived by her nieces and nephew: Kristine Pigman (Garry) of Surprise, AZ, Linda (Michael) Herberth of Oregon, Danica Sorenson of Seal Beach, CA, and Randy Sorenson of Iowa and by many great-nieces and nephews as well as many friends and colleagues. She was preceded in death by her brother, Donald Sorenson, a great-nephew, Jabriel Sorenson, and a special friend, Augusta Schurrer.

* From Richardson Funeral Service website

FACULTY SPOTLIGHT



Dr. Michael Prophet

I arrived at UNI's Math Department fall 1999, leaving a (recently) tenured position at Murray State University in Kentucky. The teaching and research opportunities at UNI made the 'risk' of leaving a tenured job, for one which was only tenure-track, well worth it. And the decision to come to Cedar Falls is one that I've never regretted, as all elements of my faculty position have exceeded the expectations I had.

Before arriving in the Midwest, I spent time in every other time zone in the U.S.! I grew up near Gettysburg PA (EST) and was an undergraduate at the state school Shippensburg University. I graduated with a math degree in 1987 and then started my first job (at a software company) outside of Philadelphia. While the computer work was somewhat interesting, I missed doing mathematics so after only one year of industry work, I headed back to school in a Ph.D. program at the University of California, Riverside (PST). I finished my degree after five years and then in fall of 1993 I started a two-year Visiting Position at Idaho State University (MST). From Idaho, it was then to Kentucky and finally to Iowa (CST)!

My research area is Approximation Theory and, in particular, approximations done using (so-called) Projections. Just like a film projector converts three-dimensional action to a two-dimensional screen, mathematical projections attempt to approximate by removing dimensions, in a 'best-possible' way (just as the film projector removes the depth dimension, rather than height or width, which would produce a much worse result). Within this area, I have published a variety

of papers, several of which I have co-authored with UNI math faculty (as recently as 2021). This work has also allowed me to bring international experts to our department as well as travel to European countries such as Spain and Ukraine. In addition, I spent large amounts of time working on mathematics in Poland and Russia. Indeed I plan to travel again to Krakow, Poland, this summer to continue an ongoing collaboration.

With respect to teaching, one of the highlights of my career has been involving students with solving 'real world' problems which have been proposed by businesses both local and nationwide. Using contacts that I have established, I have been able to work with companies to offer to us problems or challenges they face and then collaborate with teams of UNI students as they attempt to find solutions to the problems. Solutions almost always take the form of some logic implemented in software, so students gained experience not only in optimizational math but also programming, typically in a LAMP environment (Linux Apache MySQL PHP). We worked with companies from our local HyVee to the global Koch Industries.

One of the highlights of this program was the success students had working with Shorts Travel Agency. The challenge was to find and implement an algorithm to efficiently route a fixed number of charter aircraft through a network of collegiate sporting events (for example, fly UNI basketball to their game in Raleigh, NC, and then return two days later). We submitted the students' solution to a competition sponsored by the Mathematical Association of America (MAA) and we received high marks and were subsequently invited to make a 'key-note' presentation in Boston MA during a national MAA conference. This was an amazing opportunity for our students - in fact it was, for a couple of students, the first time they had ever flown!

I have thoroughly enjoyed my time at UNI; I value the interactions I've had with our students and the relationships I've developed with the university faculty. I look forward to many more years of dynamics connected with belonging to the Mathematics Department at UNI.

IN HONOR OF THE REMARKABLE CAREER OF DR. JOEL HAACK



Dr. Joel Haack

by Douglas Mupasiri

First, congratulations to Dr. Joel Haack on his retirement in summer 2020, after an illustrious career spanning 29 years (1991-2020).

We had intended to publish this edition of the department newsletter in 2020-2021 academic year. Unfortunately, as it did to other aspects of our lives, the Covid-19 pandemic wreaked havoc on our plans. Now that our lives are somewhat back to normal (knock on wood!), we are delighted to have a chance to write an article in honor of your retirement.

To put things in context, we will begin with a timeline of your tenure of service at UNI and a summary of your record in mathematics research and scholarship. You served as head of the Department of Mathematics and Computer Science (1991-1992), head of the Department of Mathematics (1992-2000), as interim dean of the College of Natural Science (CNS) (2000-2001), as faculty member (2001 – 2004 (Dec.)), as interim dean of CNS (2005 – 2006), as dean of CNS (2006-2011), as dean of the College of Humanities and Fine Arts (CHFA) (2010 – 2011), as the inaugural dean of the College of Humanities, Arts and Sciences (CHAS) (2011 – 2014 (Dec.)), and as a member of the faculty (2015 – 2020). It is fitting to note that, very much true to your character, you said you left the deanship so that you could retire as a mathematics faculty member, because that was your identity across the years.

We would be remiss if we did not mention what set you on a path to your illustrious career, namely your love of mathematics – both the pursuit and the teaching of it. According to your publicly posted curriculum vitae, you wrote twenty-two refereed papers in the areas of the history of mathematics, connections between

mathematics and the arts, and non-commutative ring theory; you gave numerous addresses and invited presentations at professional meetings of the American Mathematical Society (AMS), the Mathematical Association of America (MAA), and the National Council of Teachers of Mathematics (NCTM), and at universities, colleges, and high schools; you refereed and reviewed research articles, received grants from NSF and NATO, developed mathematics programs for several junior and senior high school summer programs, including National Endowment for the Humanities (NEH)-sponsored Ancient Greece and Medieval Studies programs; you published papers in *The College Mathematics Journal* and *Humanities Education*; you conducted workshops on the History of Mathematics for college faculty and for college students at MAA sectional meetings; and you served on the Board of Governors for the MAA, as chair of the MAA Science Policy Committee, and as chair of the MAA Audit Committee.

In our feature of you in the 2015-2016 newsletter, you shared with us the following highlights of your nine years as department head: the move back to the newly renovated Wright Hall in January 1992, the extensive curriculum changes which included the adoption of a reformed calculus text and graphing calculators to provide the technology support the text contemplated, curriculum revision of all the tracks in the department and the addition of a separate statistics and actuarial science track, the decision to use a common core of courses consisting of Calculus I, II, and III and Linear Algebra to be shared by all major tracks in the department, the creation of the practitioner-focused M.A. in Mathematics for Middle Grades Teachers, and lastly, the success of the department in hiring its first choice in 11 consecutive faculty searches during that (almost) decade, among them Doug Mupasiri, the current head of the department.

We round out your list of accomplishments in this edition by adding to it the following impressive list of awards you received from UNI and elsewhere:

- Honorary Doctorate of Humane Letters, Allen College, 2021
- Faculty Administrator of the Year Award, United Faculty, 2015
- Investing in our Future by Serving Others Award, UNI Upward Bound program, 2013
- The Howard V. Jones Award for Leadership and Philanthropy in the Arts (with Linda Haack), UNI Foundation, 2013
- Commencement speaker at Allen College, 2013
- “Friend of Mathematics Award” from the Iowa Council of Teachers of Mathematics, for excellence in and support of mathematics

education, 2007

- Honorary member of Omicron Delta Kappa (leadership) and Phi Mu Alpha Sinfonia (music), 1998 and 2016
- Dean’s Award for Teaching Excellence in Departmental Programs, CNS, 1996
- (And for a humorous note) Most Likely to Have Already Succeeded, UNI Varsity Men’s Glee Club, 2016.

Did we capture all the achievements of the department in your tenure as head? If not, would you please fill in what we missed?

I have nothing to add to accomplishments as head. I might add, of course, that all of the accomplishments you mention are due in large part to faculty of the department during the time I was head.

By any measure, this is quite an impressive list of accomplishments. What accounted for your success in leading the department through these changes and in research and scholarship?

As I mentioned above, it’s the strong faculty of the department, with a real sense of community, building on David Duncan’s and others’ leadership before I arrived, that led to the department’s success while I was head. I also tried to smooth the way for us on campus by being involved in several cross-campus leadership positions, including chairing the Faculty Senate, chairing search committees for both Athletic Director and Admissions Director, serving as vice-chair for a Presidential search committee, co-chair for the Qualities of an Educated Person project, and on numerous other committees, so that I had good connections across the university. My research and scholarship tended to be a natural outcome of being interested in mathematics and in what I was doing, and then wanting to share what I had learned with others.

As dean, you oversaw the merger of CNS and CHFA. From the outside, the merger seemed seamless. Did it look and feel like that from the inside too?

The merger of the two colleges was largely seamless. What matters most at a university are the faculty teaching and pursuing their scholarship and the students learning and growing. Administrative structures, whatever they are, should be designed to facilitate those activities. In the case of the merger of our two colleges, it is true that they had developed different cultures during their more than forty years of independent existence, so the biggest challenge was to identify the best practices in the two colleges and continue those. Fortunately, there were faculty committees which helped identify the best practices. I consulted their reports throughout the time I was dean. And the willingness of the faculty, staff, and department heads to make the merged college the best it could be was critical to the process!

(Continued on next page)

We imagine that your tenure as dean had its own share of challenges. Would you be willing to share with our readers what some of the challenges you faced were, and if possible, how you resolved them?

There were indeed challenges during my tenure as dean. One clear challenge was the budgetary issues that led to closing a number of programs across the university, including in CHAS. While there was pain, we worked to minimize the damage to our students' education and to maintain our ability to function as a strong regional university. A second challenge, one which I would address regularly, was reminding the university community that we no longer had five colleges that were roughly comparable in size; rather, the merger created one large college and three much smaller colleges. Giving one of anything (monetary resources, faculty resources, student and faculty awards) to each college no longer made any sense. A third challenge, which we were able to address because of our size, was to create effective IT support, a strong marketing and promotions team, and a successful fundraising staff, all to support the success of our faculty and students.

As we mentioned in a previous edition, you returned to the faculty in fall 2015 after you stepped down as dean. You then went on phased retirement on January 1, 2016, and under the terms of your phased retirement agreement, you taught in the fall and had the spring off. We are struck by how fateful this decision would prove to be. Even though you officially retired in summer 2020, the last semester you taught was fall 2019. This meant that you escaped completely the Covid-19 challenges which began in spring 2020. As someone who had dealt with challenges as an administrator for 20 years, was there a part of you that made you wish you were back in the mix helping to solve pandemic-related problems?

I do regard myself as fortunate to have retired from teaching just before the pandemic began. My own health issues would have made it very dangerous for me to teach in-person. As to teaching in the pandemic, I start from the principle that the best teaching and learning occurs with Socrates and a group of ten or twelve talking in a grove of trees. Anything else involves some compromises; the challenge is to address the compromises in a way that creates the best learning in whatever the environment is. I have been very impressed by the creative and effective teaching done by my colleagues during the pandemic, and I'm sure that some of the lessons learned during that time will continue to enrich the teaching at UNI in the future.

You have interests in mathematics, history, the arts, and nature. We also know that you are a patron of the arts. Would you please share with our readers how these interests and your patronage of the arts have shaped or otherwise manifested themselves in your life?

The interests of mine that you mention have defined most of my activity throughout my life. Obviously, mathematics and the beauty found there has been foremost. Linda and I have decided that our interests in culture (history and the arts) and in nature will define our activities and contributions going forward. These interests have fed into our traveling (see more in the next answer), but in addition to the mathematics trips, we have explored Luther's Germany with the Wartburg Alumni Association and walked parts of the Camino in Spain and prehistoric paths in England with Road Scholar. I presently serve on the Friends Board for Hartman Reserve Nature Center, the Gallagher Bluedorn Advisory Board, and the Prairie Rapids Audubon Society Board. In addition to presentations about mathematics proper, I have made presentations on such topics as sizes of infinity, units of measurement, bird watching, Meredith Willson, the German-American Heritage Center, the Norwegian mathematician Niels Henrik Abel, and some of the accomplishments of Leonhard Euler. So, these interests have shaped much of my life.

You have also travelled extensively across the globe, sometimes with MAA groups on MAA study tours and, if memory serves me correctly, at least once to Iceland and Norway with the UNI Varsity Men's Glee Club. Would you share with our viewers some highlights of some of your trips abroad, especially the MAA study tours?

The MAA's Mathematical Study Tours were fascinating and rewarding. Especially with my interests in the history of mathematics, visiting Greece (and the site of Plato's Academy, Pythagoras's birthplace, and Thales's home in Asia Minor), England (especially for Newton and Herriott), the Maya region (seeing the symbol for 0 in numerous stela and codices), China (bringing the Nine Chapters to life), etc., were life-time highlights. I've also discovered that one can seek out mathematical sites and sights wherever one travels! These trips enriched both my teaching, as I could share experiences and photographs with my classes, and my professional activities, as I have written and spoken about them regularly. They also provided me with some national service, as I served on and then chaired the committee organizing the trips for the MAA.

It's been two years since you retired, how is life in retirement?

Life in retirement is rich and rewarding. We spend our time reading, bird watching, walking with our poodle, and playing piano duets. I sing with two choirs—the Allen College Chorus and the virtual Stay at Home Choir (based in England). I look forward to the time when Covid becomes even less of a threat so that it will be easier to resume more in-person activities safely, but until then, virtual offerings of performances and lectures through several life-long learning offerings from universities help fill the bill. And I remain involved in several MAA pursuits, including the editorial board for *Convergence* (an on-line journal for the classroom use of the history of mathematics), the Classroom Resource Material editorial board, the annual History of Mathematics Special Interest Group student paper competition, and writing reviews of mathematics books for the MAA website (32 at last count).

Do you have any parting words for our readers? After investing 29 years in UNI, maybe some reflections on what UNI means to you?

Parting reflections? Treasure and take advantage of the opportunities that present themselves. Continue to make UNI the institution you're proud to associate with. I remain impressed by what our students learn and by the contributions to research, creative activities, and scholarship made by our faculty, staff, and students.

As someone who was hired by you and reported to you as both my department head and my college dean, it has been my privilege to contribute to the writing of this article honoring your retirement. I am in awe of the fact that you have touched the lives of thousands of students who took your courses; you have hired, mentored, promoted, and otherwise positively impacted hundreds of faculty members; you have created and developed new programs; and you have collaborated with or encouraged others to do the same. On behalf of the department, I thank you for your many contributions to the department, to our students, to UNI, to the profession, and for exemplifying all that is right with our profession. We wish you a happy, healthy, and restful retirement. We imagine, you will be able to indulge your travel interests even more now. We will miss you.

FAREWELL TO

Mark Jacobson



After 14 years of service to the Department of Mathematics, first as a half-time statistical consultant from February 1, 2006 to September 14, 2009 and then as a half-time Coordinator of Statistics Consulting Center for the remainder of his years of service, Mark Jacobson retired on October 1, 2020.

In his time with us, Mark provided direct statistical consulting to faculty, staff, and students who needed guidance on statistical techniques, study design, data collection and interpretation of results. He also provided short courses on using statistical software packages to UNI clients, as well as short courses, workshops, classroom demonstrations and individual sessions on topics on descriptive and inferential statistics.

In this role, he made a significant contributions to some of our statistics courses. As coordinator, he served as a liaison between mathematics department faculty and campus users of the Statistics Consulting Center by connecting clients with problems requiring special expertise to appropriate mathematics department faculty members.

Mark also taught some courses in the department. Indeed, he deserves special commendation for his role in getting the course STAT 4772/STAT5772 Statistical Computing rolling when he agreed to teach it the first three times it ran, in Fall 2013, Fall 2014, and Fall 2015. Thus, Mark is credited with getting the course off the ground. It did not take long for the course to prove its value, as students started asking for more statistical computing content. In response, we decided to rename STAT 4772/5772 Statistical Computing I, and added a new course, STAT 4782/5782 Statistical Computing II, as a follow-up course. It is

worth noting that the course Statistical Computing I has become so popular, it now draws many graduate students from other departments. In a very real sense, Mark has left an enduring legacy in the form of this two-course sequence which will serve future generations of students.

Mark also contributed significantly to UNI's outreach efforts. Over many summers, he taught the course STAT 1772 Introduction to Statistical Methods for the Upward Bound Mathematics and Science program (a federal TRIO program serving students from low-income families) and for the Iowa Mathematics Science Association. Additionally, every summer Mark did an excellent job for us as the mathematics advisor at summer orientation sessions. His contributions in this regard earned him a well-deserved recognition in the form of UNI's Panther First Award in 2018.

We wish Mark a happy, healthy, and relaxing retirement. We are pretty sure he will be able to spend lots of quality time with his border collie, Terra.

WELCOME TO

Justine Radunzel



Justine Radunzel earned her BS in Mathematics from Truman State University and her PhD in Applied Mathematics with a Statistics emphasis from the University of Arizona. She has more than 20 years of statistical consulting experience that includes collaborating with researchers at the University of Iowa on their cancer-related projects and conducting validity and efficacy studies at ACT, Inc.

She enjoys helping others to better understand research design principles and statistical concepts as well as providing them with statistical advice and recommendations on their studies. In her free time, she enjoys taking long walks, traveling to new places, and spending time with family and friends.

"I am excited to be a member of the Department of Mathematics at UNI in the role of the Statistical Consulting Center Coordinator. I am looking forward to helping faculty, staff, and students with their statistical needs on their research projects."

ALUMNI SPOTLIGHT



Emily Busenius

You came to UNI in 2011. Why did you pick UNI over other colleges?

I toured a handful of schools but felt like home the moment I walked onto UNI's campus. The students were so nice compared to other campuses. There was a moment I got lost during my college tour and could not find where I was supposed to be. I stopped to ask a student for directions, and they were so kind and helpful! I found that to hold true throughout my years at UNI as a student too - it was the best choice I could have made!

You graduated from UNI in 2015 and started to work full time at the Global Atlantic Financial Group in Des Moines. What were your responsibilities on the job?

The crux of my role at Global Atlantic Financial group was to make sure the expected assumptions that fed our models held true. If they were off, it was up to us to track down why and to suggest a new assumption that accurately represented the environment. We were also in the midst of a data platform migration and helped pinpoint areas that needed to be corrected.

In 2019, you earned a Master's degree in Analytics from the Institute of Advanced Analytics, North Carolina State University. What were the reasons you decided to pursue a graduate degree in that field?

During the data platform migration at Global

Atlantic Financial Group, I really enjoyed working with the data but knew there was more information we could get out of it – I just didn't know how! I loved the Actuarial Science world but also wanted to pursue this thought along with opening doors in a similar field. That's when I decided it was time to pursue a graduate degree.

In 2019, you started as a Data Scientist at Elevate, in Fort Worth, TX, and were recently promoted to Senior Data Scientist. What are your current responsibilities?

I currently manage the Direct Mail team at Elevate, where we mail firm offers of credit for personal loans to potential consumers. We receive a mailable universe every month and determine who our target market is based on different risk and response triggers. Once they come in to apply, we then make sure they are coming through underwriting as expected. It's a very interesting and detailed process from start to finish!

What is the professional accomplishment you are most proud of?

I am always very proud when I can teach others and then watch them succeed. There have been a few new hires under my wing that have come through Elevate and it has been such a joy to watch them flourish! Teaching and mentoring has been a very fulfilling piece to my professional career that I am very proud to help contribute to.

What are your favorite memories from UNI?

There are way too many fond memories at UNI to fit within this newsletter! One that definitely sticks out was during a snow storm my freshman year – afternoon classes were canceled due to the snow so we took that opportunity to go sledding. We were forced to get creative with sleds since no one had any and used anything from lunch trays to garbage bags! It was such a fun time sledding from Campbell, down the hill to the dining hall!

Another is the semester one of my best friends and I took scuba diving our senior year. We laughed so much and had a wonderful time learning something new and fun!

While an undergraduate student, you spent one semester studying in Stirling, Scotland. What are some of the highlights of your semester abroad?

My time abroad in Stirling has such a special place in my heart – the memories will stay with me forever! We spent most nights hiking up to the castle at night to watch the sunset over the beginning of the Highlands. We would also take a bus to a random small town on the weekends to see what true rural Scotland life was all about. One of the best memories was going up to the Whisky Trail in the Highlands to tour distilleries and watch Highland Games. It's exactly like it is in the movies! I also had wonderful roommates and a tiny refrigerator, so we would trade off who cooked for all six of us each night. We tried to cook things special to our hometowns so it was fun to try German, Austrian, Australian, and Canadian specialties! We made a cookbook for the six of us to take back home with us and I still use mine all the time!

I also got really lucky and was able to travel around while there. Flights were cheap and I utilized every minute I could! Each country I spent time in was very different but wonderful in their own ways! However, Edinburgh, Scotland is still my favorite city (might be biased though).

Do you have any career advice for our current students in the Statistics and Actuarial Science program?

Stick to it! I know it's not always fun and can be really difficult at times but the hard work now really pays off in the future. It can be very rewarding in the workforce to do what you love! There's a reason not many people are in the field you are in but if you love it, it's 110% worth sticking it out!

What are your hobbies?

I love hiking! I've had the great fortune to be able to move close to the mountains in North Carolina, so hiking is such a treat for me! I just love being outside and enjoying the fresh air. I also enjoy 'garage projects' – anything that has to do with fixing or building things. My next big project is to build side tables for my living room!

ALUMNI SPOTLIGHT



Nelson Colón

What is/are the main reason(s) you chose UNI as the place to do your master's degree in mathematics?

An Iowa State University professor, Dr. Leslie Hogben, visited my undergrad institution, the University of Puerto Rico, during my senior year, to give a series of lectures and she recognized that I was passionate about math and offered to help me explore and find opportunities to go to grad school. UNI seemed like a good program and the people I met from the department really cared about the students so it felt like a good fit for me.

What were your first impressions of UNI? Have these impressions changed over time?

I thought the campus was beautiful and everyone I met was just so nice and friendly. I haven't been back in years but I bet that still holds true.

Is/are there any course(s) in our department that you feel made a significant impact on your growth as a mathematician?

Probably the Analysis course from Dr. Mupasiri. The knowledge I gained in that class was very useful for a few of my Ph.D. courses.

Do you have any particularly memorable experiences at UNI?

Some of my best memories at UNI were with the international student community. We organized cookouts, games and even got together to sing and play music together.

After completing your master's degree in mathematics at UNI in 2010, you went to Florida State University for a year and then decided to transfer to the University of Iowa to complete your graduate studies there. Can you tell our readers what went into your decision to come back to Iowa?

There were a couple of things, their research aligned better with my interests but also there was an economic factor, Teaching Assistants at the University of Iowa got paid better wages and had better benefits so that also made the decision to transfer easier.

You received your second master's (an M.S. degree in mathematics) in 2014 and your Ph.D. in mathematics with a focus on quantum topology (under the supervision of Dr. Charles Frohman) in 2016 from the University of Iowa. Your credentials include the fact that your Erdős number is 4, can you explain to our readers what an Erdős number is?

Sure! It's sort of like the Six Degrees of Kevin Bacon but with Paul Erdős, one of the most prominent mathematicians of our time. My Erdős number 4 just means that I have published a paper with someone who published a paper with someone who has published a paper with someone who published a paper with Paul Erdős.

You then somehow decided to switch to data science, AI and cybersecurity, how did that happen?

I was always on a Pure Mathematics track but I took a lot of programming courses and a lot

of applied math and statistics courses just for the fun of it and I have been working with computers since I was in high school, so even though the transition looks like a big leap it was actually fairly natural for me. Once I decided that I wanted to go to the private sector, I applied (and got accepted) to a Data Science fellowship that helped me prepare for the transition. By then I knew I wanted to be in the space of cybersecurity so I focused my search on cyber security startups because at a small company you truly have to learn every part of the business, not just the one thing you were hired for and I wanted to develop that breadth of knowledge.

In the six years since you received your Ph.D. degree from the University of Iowa, you served as a White House Presidential Innovation Fellow for almost three years – first as an AI Innovation Lead detailed to the Office of Chief Technology Officer and the US Department of Veterans Affairs (Jan 2019 – Oct 2020) and then as an Entrepreneur in Residence detailed to the Intelligent Transportation Systems Joint Programs Office at the Department of Transportation (Oct 2020 – Nov 2021). Would you please tell our readers how you attained this remarkable achievement?

The White House Presidential Innovation Fellowship aims to bring Subject Matter Experts from the Private Sector to serve for up to 4 years driving innovation initiatives at different Government agencies. My particular area of expertise is in the development of AI/ML (Artificial Intelligence / Machine Learning) products to improve operational processes most recently at Microsoft. In the private sector, my expertise had been mainly applied towards Cyber Security and Fraud, Waste & Abuse operations. I was brought to the VA mainly to help with the modernization of the Fraud Detection operations but, while there, I ended up contributing to a lot of other projects with direct impact on our veterans lives.

What advice would you offer a student in his/her early years at UNI who may be considering a career in AI and/or cybersecurity?

Both of these fields are extremely multi-disciplinary, so the best advice I can give anyone is to develop a breadth of knowledge and figure out if depth is truly needed later. Allowing yourself to know the fields as a generalist will make you a more effective communicator; you'll be able to draw from different places to explain what needs to be done and this is extremely important in a product environment whether it is in the public or private sector. Bonus tip: Read "Range: Why Generalists Triumph In A Specialized World" by David Epstein.

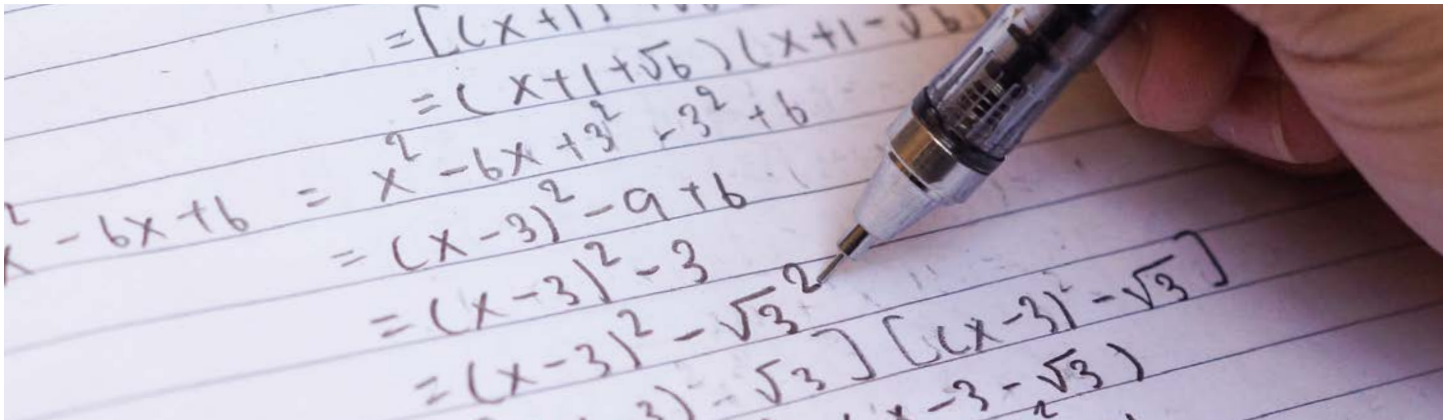
What do you enjoy doing in your free time?

Playing gigs. I play shows around DC and NYC, sometimes by myself with my guitar, other times with different musicians as part of their ensemble.

Is there anything else you would like to share with our readers?

Stay curious!

NEWS FROM THE Center for Teaching and Learning Mathematics



By Julie Creeden

"When the going gets tough, the tough get going!" is a familiar quote attributed to Joseph Kennedy. Some may also remember Coach Mike Krzyzewski, the former head men's basketball coach of the Duke Blue Devils, yelling it out to his team when things got hard during a game. This sentiment could not be more true when it comes to the entire staff of the Center for Teaching & Learning Mathematics (CTLM) over the past couple of years; and it is most certainly true regarding ALL of the teachers whom we have served.

Upon the recent successful completion of the Making Sense of Mathematics & Teaching (MSMT) K-8 contract in Mascoutah, Illinois, the Mascoutah district asked the CTLM to help them expand this good work to include both special education teachers and high school teachers of mathematics. This work was made possible through a grant from the Department of Defense Education Activity (DoDEA) to support this military-impacted school. We had recently expanded the MSMT K-8 work that was started in Mascoutah to a neighboring district, O'Fallon 90 School District in O'Fallon, Illinois, thanks to another DoDEA grant. So just prior to March of 2020, about the time when the COVID-19 pandemic began taking its toll on the world, the CTLM partnered with five other military-impacted school districts to submit FIVE grant proposals to support teachers in improving mathematics instruction. These grants would allow the Center to provide mathematics professional development (PD) for both general and special education teachers through March of 2025.

Of those five submitted grant proposals, TWO were fully funded:

1. All Students Can Succeed: Making Sense of Mathematics & Teaching Mascoutah 2.0 in Mascoutah, Illinois is an award from DoDEA to the Mascoutah school district which supports

a contract with the CTLM to provide professional development. It consists of two separate course series:

a. The first part of this project includes a pilot program expanding the original MSMT K-8 work into the high school grades. Megan Balong is developing and teaching the following four courses:

- Making Sense of Number, Algebra, & Functions
- Making Sense of Geometry & Measurement
- Making Sense of Statistics & Probability
- Making Sense of Reasoning & Proof

b. The second part of this project includes a pilot program for special education teachers known as Teaching Mathematics to Struggling Learners (TMSL). Connie Terry is developing and teaching the following three courses as well as training teachers for the delivery of a summer camp:

- Teaching Mathematics to Struggling Learners: Building Your Confidence
- Teaching Mathematics to Struggling Learners: Addition, Subtraction, & Place Value
- Teaching Mathematics to Struggling Learners: Multiplication & Division
- Teacher training for Mind Benders Summer Camp

2. Making Sense of Mathematics and Teaching at Central 104, in O'Fallon, Illinois is a DoDEA subaward to the CTLM for military-impacted schools. It is an expansion of our MSMT work into the Central 104 School District. The following four courses, from our MSMT K-8 series of eight, are being taught by Annette Louk:

- a. Making Sense of Numbers
- b. Making Sense of Operations
- c. Making Sense of Rational Numbers
- d. Making Sense of Algebraic Thinking

It has always been the vision of our director, Dr. Vicki Oleson, to seek out the needs of teachers and school districts, and then do the very best possible to meet those specific needs. It is that service mentality — coupled with the desire to help teachers understand and implement current pedagogy, teaching strategies, and formative assessment into their classrooms — that has been the bedrock of our mission over the years.

While COVID-19 forced us to change the delivery of our PD courses from face-to-face to online learning for a while, we never once stopped serving, and more importantly, our teachers never stopped learning. While Vicki Oleson has never barked those words out to us quite like Coach K did on the basketball court, her encouragement and dedication to serve during even the toughest of times motivate us to step up and get going! Those words rang true when we submitted five grant proposals in early 2020, they rang true in the midst of COVID-19 shutdowns, and they still ring true for the CTLM and its teachers today: "When the going gets tough, the tough get going!"

Please visit the CTLM website www.ctlm.uni.edu for more information about our PD courses, as well as many free resources we provide to teachers and families across the country.

Director: Dr. Vicki Oleson
Assistant Director: Karis Townsend
Writing Coordinator: Julie Creeden
Editor: Amy Frohardt-Schafer
Facilitators: Megan Balong, Annette Louk, Connie Terry
Assistant Facilitator: Amie Smith
Student Assistants: Emily Churchill, Alex Urbaneck
Video Production: Around the Corner Productions
Graphic Designer: Dana Lechtenberg

STUDENT SPOTLIGHTS



Samantha Bennett

What are the main reasons why you chose UNI over other colleges and universities?

I knew coming into college that I wanted to major in Actuarial Science, so my options were first limited by which universities could offer it as an area of study. The primary reason I chose UNI was because of affordability, and the financial aid they were able to offer me. However, that's not to say I wasn't still excited about my choice. What made me feel confident in my decision to become a Panther was a meeting I had with Dr. Kirmani when I was still in high school. He was gracious enough to schedule time out of his day to meet with me while I was here on a visit, and we sat in his office while he answered all the questions I had about the major and what the course of study looked like at UNI. He was able to tell me exactly what to expect when I came here, which helped me to better picture myself at UNI. It was nice knowing I already had faculty at UNI who were invested in my future before I even started my first year.

What were your first impressions about UNI?

I was already fairly familiar with UNI since my brother and both of my parents attended here. Initially, that familiarity seemed like a hindrance since the campus did not seem as exciting and new as other university campuses I was seeing for the first time. However, I found there is still plenty to explore, and despite my previous experiences here I was still able to build my own. I also thought that UNI's comparatively smaller size would mean less opportunities to find my niche, or to meet new people, but that also couldn't be further from the truth! Now, UNI's size feels "just right" - where I'm not lost in a sea of other students, but it's not

so small that there isn't still a good variety of people to connect with or organizations to get involved in.

Is there any course in our department that you found particularly challenging?

I was told by other actuarial students that Math Stats would be the hardest class I take at UNI and they certainly weren't kidding about that! It was hands down the most difficult course I have ever taken in my life, but it showed me how disciplined and resilient I could be - which are incredibly useful attributes for this field. You have to be disciplined when preparing for and taking actuarial exams, and you have to have the resilience to push through those especially tough concepts. The class also allowed me to become closer with my peers, as we leaned on each other to help understand the material. As frustrating as some of the homeworks could be, it felt a lot more manageable when I had my friends in the library with me to commiserate - late nights at ROD alone are nowhere near as fun as late nights with buddies. So while math stats was brutal at times, I'm grateful for it in the sense that if I made it through that course, I can make it through anything.

You passed two actuarial exams. What was your recipe for success?

It's best to give yourself plenty of time to get familiar with the material. Both times I purchased Coaching Actuaries material months ahead of when I planned to sit for my exams, and used their study calendar to pace myself on subjects. It's important to set up that schedule so that you aren't rushing to cram subjects in - these are tough concepts that you need to give time to sink in. I would pace myself to complete the manual material at least a month before my sitting so that I could take quizzes and practice exams leading up to the exam. For my second exam, I did a practice exam a day for the final month - in hindsight, that was overkill, but it guaranteed I felt confident going into the test!

I also recommend scheduling specific time to study during your day, and tailoring it to when you know you'll be most productive. For example, I know I'm most productive in the mornings, so I would study first thing after breakfast for a few hours. Then, I was free to enjoy the rest of my day, and if I happened to get more studying in during the afternoon? Great! But if I didn't? That's alright,

because I already got some good hours in that morning.

During the summers of 2020 and 2021, you participated in internships at Sammons Financial Group. What are some of the projects you worked on?

This last summer I was an intern on their Annuity Product Development team, where I got to work on their replication tools. These are tools that replicate potential payout structures of annuities they offer, based on variables policyholders can elect for like payout frequency, payout percentage, and different index allocations. I ran different annuity products through these tools and confirmed that the outputs were as expected. If there were discrepancies, it was my job to go into the tool (which was built in Excel) and figure out what formulas needed to be altered to produce the desired results.

I also got to work on some side projects that got me more familiar with VBA coding - something I had never worked on prior - and a group project with other interns that gave me ALFA modelling experience. For the group project, we investigated how different market conditions and assumptions affected the profitability of two different annuity products, and suggested changes to these products which could protect profitability given specific assumptions.

You are currently a senior, planning to graduate this May. Do you have any advice for students who are just starting in our actuarial program?

Go to the actuarial career fair!! I know it can seem counterintuitive to go when you're a freshman or just starting out in the major, but even if you don't have exams passed yet or a lot of "relevant" experience it is still super beneficial to participate. I initially built my connection with Sammons when I was a freshman two months into college with a resume that still consisted primarily of high school involvements. I talked to them at the fair and got acquainted with their company, so that when I came to the fair the next year with a better resume and an exam under my belt they already knew me and had an interest in recruiting me to their program. Do not underestimate how helpful those initial conversations with companies can be down the road.

(Continued on next page)

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You have been elected the NISG student body president. What are your thoughts or plans at the beginning of the term?

I feel very fortunate to be entrusted with this role, and I'm super excited for the year ahead! The semester has gotten off to a good start - NISG had some great engagement from students at the student org fairs we participated in, and from there we were able to get some stand-out applicants for our senate and board of directors! I'm looking forward to the amazing work I know our members will be doing this year, as we are currently gearing up to get senators forming and working on initiatives. My vice president, Alisanne Struck, and I plan to stay busy this year but my experience with exam studying has me more than prepared to manage my time.

Do you have any particularly memorable experiences at UNI?

A lot of my favorite memories come from my time working with sustainability on campus. I met some of my best friends through the Student Sustainability Engagement Committee (SSEC) and it was also through that group that I was able to have some truly incredible experiences. My sophomore year I was fortunate enough to represent UNI at the AASHE conference in Spokane, Washington, where I met students from universities all across the country and talked about what sustainability looks like on their campus. I also had the honor of introducing Erin Brockovich when she came and spoke at the GBPAC, and I even got to have dinner with her beforehand! (She was SO cool!) Almost every memory with my sustaina-pals - as we lovingly called each other - is one of my favorites, and it was through those experiences that I'm where I am now: serving as President.

What are your professional plans after graduating from UNI?

I will be starting full-time with Sammons Financial Group in West Des Moines this June. I am already looking forward to picking out apartment furniture and exploring the downtown area! ■



Carissa Cummings

You earned your BA in Mathematics from UNI. Why did you decide to enroll at UNI for both your undergraduate and graduate degrees?

When I initially toured the UNI campus, I realized that this was where I wanted to study. The campus was beautiful but not too large, and everywhere we went, the tour guide was greeted by other students. I could immediately tell that UNI was a close-knit community that had all of the opportunities I was looking for. While earning my Bachelor's degree, I established numerous connections with both faculty and other students. The decision to continue my education through graduate school at UNI was an easy one when I considered who would be guiding me through this journey and who I would be learning next to.

During your senior year, you participated in undergraduate research under the supervision of Dr. TJ Hitchman. What was your research project about?

My undergraduate research with Dr. Hitchman was focused on knot theory. I began by studying the inner workings of knot theory and learning why knots are so important to the study of mathematics. We found a handful of questions to limit my research to. The majority of them focused on a specific diagram that can be used to demonstrate individual knots. We questioned whether or not the diagrams could be drawn differently while still representing the same knot. Overall, we hoped to relate a diagram with specific requirements to a variation of this diagram with fewer restrictions.

Are there any challenges you encountered as a graduate student in mathematics?

Earning a master's degree is not an easy feat, especially during a pandemic. My first semester of graduate coursework was a combination of half online and half in-person classes. This challenge was even more difficult when factoring in my assistantship, which required me to tutor undergraduate students throughout the week. On top of this, I discovered shortly after the start of the academic year that I would be expecting a son right around the final exams for the spring semester. Thanks to the community I had already built at UNI, specifically in the Mathematics Department, I was able to create a spring schedule opposite to my husband's, who is currently pursuing his Bachelor's degree in English Education. I was met with flexibility from my professors and was still able to safely provide tutoring to other students. As my due date approached, I became much more worried about balancing a newborn and the remainder of my classes. However, thanks to the pandemic, most of my professors were already offering Zoom classes for those who could not make it to class. My son was born a week before the start of finals (perfect timing in my opinion), and I was able to finish all of my projects and finals in the last couple of weeks of the semester.

You are the recipient of a UNI Graduate Student First award. What does that award mean to you?

I am honored to have received this award. The UNI Graduate Student First Award was given to me for excellence of commitment, initiative, and engagement. However, these are attributes that I try to bring to the table on every occasion. At the start of my graduate program, I was not sure if teaching and/or tutoring would be right for me. As such, I figured that working as a graduate assistant and tutoring undergraduate students would be an amazing opportunity to explore this field while continuing my education. From the beginning, I could tell that education jobs are all about what you put into them. I could tell when students were not understanding the concepts with my initial explanation and knew I needed to find another method of communication. With this in mind, I tried my hardest to tailor each tutoring session to the specific learning style of each student. This was not something I necessarily expected my supervisors to see;

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however, this engagement and understanding of educational styles was necessary to help the students to the fullest extent.

Any favorite memories from UNI you would like to share with our readers?

Most of my favorite memories stem from Math Club. Some of the most memorable meetings were the "Set" tournaments and the guest speakers. Math Club always had a very relaxed environment, and the guest speakers provided insightful, brief conversations. I especially enjoyed Dr. Shaw's discussion of his book about conversation ideas.

What are your longer-term professional goals?

Long-term, I am looking forward to continuing to pursue my Master's in mathematics. If I stop there, I will most likely become a private tutor; otherwise, I will go on to earn my doctorate and teach at a college or university.

What are your hobbies?

The majority of my time is currently devoted to my son, who has recently begun crawling. I also enjoy reading and hiking the local trails, and am always looking for new ways to be a life-long learner, including learning new languages and coding. ■



Sydney DeBruin

When and why did you decide to become a mathematics teacher?

Most of my life I have known I wanted to be a teacher mainly because I was raised by an amazing teacher. My mother was the first person I looked up to. She was my first role model. I saw how important her job as a teacher was from a very young age. Seeing her ability to touch and impact the lives of so many of her students, gave me the inspiration to pursue teaching as a career. During high school is when I knew I wanted to become a math teacher. I had two awesome math teachers, one who had been teaching for a long time, and one who had just recently graduated from college. Both teachers had a positive impact on me, and I realized I wanted to do the same for my students in the future. Throughout high school and college, I realized how important a positive relationship with my teachers and professors was to me. I genuinely believe my future would have turned out differently if I had less meaningful relationships with my professors. Cultivating positive and genuine relationships with my students is the reason I have become so passionate about my career. I have always said, "I am passionate about building relationships with students, and it just so happens that I am pretty good at math, so why not do what I am passionate about while also doing what I am good at." Everyday I try to remember this as I use the knowledge and relationships with my students to help them understand mathematical concepts.

You are originally from southern Iowa. What were the reasons you chose UNI over other colleges?

I chose to go to UNI for three reasons. The first

one being my older sister, who I have always looked up to, attended UNI, the second were the professors I met during my visits, and the third was the size of the campus. I did not feel the connection toward other universities like the one I felt during my tours at UNI. When I toured the campus of UNI, I liked how I did not have to get on a bus to get from one side of campus to the other. Another important feature to me was the support of the professors. When I visited other colleges and met with the professors, I did not feel like I would have the opportunity to get to know my professors and experience their support one-on-one. When I visited UNI, I knew, because of the smaller class sizes, I would have an opportunity to get to know and connect with the professors. The opportunities for the supportive relationships with faculty and staff is why I chose UNI.

Which mathematics courses made the greatest impact on your development as a mathematics teacher?

This is a tough question to answer because the greatest impact on my development as a teacher was not so much the courses, because all of them were helpful in their own ways, but the way each professor cared about the success of their students and ensured the content was relevant to us. This is ultimately what made many of the courses I took so beneficial.

To name a few classes that really stand out are:

- Connections: University Mathematics and the Secondary Curriculum
- Discrete and Argumentative Mathematics

These courses gave me an insight into what the world of teaching should and could look like for me in the future.

What are your favorite memories from UNI?

I will forever cherish my time at UNI. I could write many pages about the memories I have from my time at UNI, but I will not do that to the readers. A few things I really enjoyed were: being involved in Dance Marathon, welcoming new students to UNI through Cat Crew and as a UNI STEM Ambassador, late nights in Rod Library, spending hours working on one proof with classmates, and the greatest gift of all was meeting my fiancé. *(Continued on next page)*

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While in high school, you went on a mission trip to Africa. Was that the only experience abroad you have had?

I took the trip to Africa during my junior year of high school, but while I was at UNI I was intending on traveling internationally for student teaching. I was accepted into the international student teaching program and had been officially placed in Thailand when COVID hit, which canceled the student teaching opportunity.

You are currently a mathematics teacher at Oskaloosa High School. How was the transition from college to your first full time job and what are your first impressions about being a high school teacher?

This transition has been a challenging but rewarding experience. One reason this transition has gone smoother than expected is due to the fact that I am teaching at the same school I student taught at. This allowed me to go into the first year of teaching with some knowledge of the students, relationships with the staff and faculty, and knowledge of how the school district runs. I believe my education while at UNI and my experience during student teaching prepared me in the best way possible for the first year of teaching.

I love being a high school teacher and building relationships with my students. My favorite part of my job is that there is not one day, or even one class period, that I do not laugh. This makes going to work every day very exciting. I also have really enjoyed getting involved with the school and community outside of the classroom. Attending my students' sporting and extracurricular events has been such a joy. One reason I enjoy high schoolers so much is because I have the opportunity to connect with them in many different ways depending on what each student is passionate about in their life.

What kind of teacher do you aspire to be?

I aspire to be a teacher who creates positive, impactful, and meaningful relationships with my students while cultivating a teaching environment that engages students to want to learn. Some days it is extremely challenging to motivate students, to make them want to learn. I have learned in my first 5 months of teaching that the best way to motivate my students is to develop

positive relationships with them and tie those relationships into my teaching. I do my best to incorporate the hobbies and interests of my students into the content. When creating culturally relevant lessons, I have seen the motivation of my students increase. I accept the fact that not all students are going to love math, but I still make it a priority for them to learn mathematical concepts in a positive and engaging environment.

What do you enjoy doing in your free time?

I love spending time with my 7-month-old bulldog named Dunkin, I enjoy remodeling and renovating my house that my fiancé and I bought over the summer, and I enjoy being an aunt to two nephews and a niece on the way. ■



Lauren Falck

When did you decide to become a mathematics teaching major and what made you pick this major?

I have always wanted to be a teacher my entire life because my mom was a teacher. Teaching is a career where you can make a significant impact on a lot of people. The only thing I wasn't for sure on was what I would be teaching. Ironically, I did not choose mathematics because it was my best subject in school. I was good at it, but I had to work hard to be good at it. I have found that, since mathematics has not always come easy to me, I have been able to make better connections with students and show them multiple perspectives for solving problems. I also think that students tend to have a dislike for math because they don't understand it. I hope that, if I can help students understand the subject better, they will grow fonder of the subject.

What is the main reason you chose UNI over other colleges and universities?

I chose UNI because it is the perfect size; it is a small school with big school opportunities. Since I come from a small high school, I was concerned about constantly seeing the same people in all of my classes. However, I also didn't want to have huge classes where I didn't know a single person in my class or my professors didn't know me. I am glad I chose UNI because I got to have a lot of different experiences since I had many different people in my classes, and I also had several familiar faces in my classes including my professors.

Is/are there any course(s) in our department that you feel have made a significant impact on your growth as a mathematician and/or teacher?

I really liked my Discrete and Argumentative Math class as well as my Euclidean Geometry class. These classes are proof-based classes where students are able to present their proofs to the whole class. The proof portion of the class taught me not to make any assumptions and to always have a reason behind everything. This has helped me show all of my students the reasoning behind everything and not just assume they will make the connections. The presentation portion of the class really helped me gain confidence talking about math in front of people. Talking about math in front of people is a lot more challenging than just giving a basic presentation in front of others.

In 2019 you were a participant in the UNI summer undergraduate research program. What project did you work on and what did you accomplish that summer? Who were your mentors?

In 2019 my project was "Factors Impacting Students' Mathematical Performance & Belief." I worked with fellow student Alexis Steinlage. We reviewed fraction, measurement, and Geometry tests from UNI math reasoning courses and compared their test scores to their preferences on math subjects/teachers. We found a relationship between a student's performance on a particular math subject and their preference on that subject, a relationship between students' preferences of teachers and preference of math subject, and qualities of least and most favorite teachers. Our mentors on this project were Elizabeth Hughes and Olof Steinthorsdottir.

STUDENT SPOTLIGHTS

I also participated in this program in 2020. My project that year was "Maximizing Participation in an Online Mathematics Course." I was a teaching assistant in an online Graph Theory course through the Michigan Math and Science Scholars Program. I used this class to look for ways that students might participate more in a virtual mathematics setting. I looked into three different areas. The first result was that students who attended out of class social events participated more in class. The second result was that students participated more in groups when there were two female students present in the group. The final result was that students who tended to have lower participation participated more when they were in groups with people who have higher participation tendencies.

Speaking of the Michigan Math and Science Scholar program, what were your contributions to the program and what did you value most about that experience?

I was a teaching assistant for both the summer of 2020 and 2021. I helped with an online Graph Theory course. I helped group students up and assist them in those small groups. I really valued getting the chance to practice strategically grouping students so each student gets the most out of the learning. I have used the grouping skill I developed from this experience many times as a teacher.

Is there any particular moment during a field experience or during the semester of student teaching that you think was an important learning experience for you?

I think it is difficult to pick just one moment that was an important learning experience. Overall, I was thankful to get to experience the battle of getting students to discover mathematics rather than be given the information to regurgitate on a test later. It is a battle that I have to face on a regular basis as a high school math teacher.

What was your favorite extracurricular activity in college?

My favorite activity in college was being a part of my residence hall activities board. I really enjoyed getting to plan and participate in fun free events with the people who lived in the same building as myself. My favorite extracurricular activity in college was the Campus Activities Board. I really

enjoyed getting to go to unique events that I had never experienced before.

What is your favorite memory from UNI?

I really enjoyed participating in homecoming activities. It is always a blast watching the various Pride Cries that student organizations put together, running in the Amazing Race Traditions Challenge, and decorating a golf cart for the homecoming parade. My junior year I was on homecoming court for UNI, so I got to experience all the various different homecoming traditions I may have not experienced in the past. I even had the honor of being selected as homecoming queen. I remember standing on the stage and not even realizing that they said my name since I was not expecting it.

What kind of teacher do you aspire to be? What course(s) do you particularly enjoy teaching and why?

I aspire to be a teacher who inspires students. I want my students to feel safe and loved in my classroom. I want them to know that they can do anything as long as they put their minds to it. I really like teaching Geometry so far. It is a class that the majority of students have to take in order to graduate. Therefore, there are many different types of students in the classroom, both students who want to be there and students who don't want to be there. I really like helping students enjoy a class they at first didn't want to go to. I also believe that Geometry is the most applicable math course. I love showing students exactly how they might use the skills in my class outside of school.

What are your professional goals during your first semester of teaching at North Fayette Valley High School?

My number one professional goal for my first semester of teaching at NFVHS, is to avoid teacher burnout. It is very common for beginning teachers to feel overwhelmed by the amount of work and the high expectations for our profession. Therefore, I am working hard to take care of myself while still going above and beyond in my role as a high school math teacher.

What do you enjoy doing in your free time?

In my free time, I enjoy getting together with my friends from college, painting, going for walks, and watching Netflix. ■



Aaron Kirchman

What are the main reasons you chose UNI over other colleges and universities?

Being an out-of-state student and coming from Wisconsin, I regularly consider this question as UNI wasn't an obvious choice when I was graduating from high school. The easy answer is that the school simply felt right when I came to visit. In terms of logistics, it's the right distance from home as well as being the perfect sized school for me. It wasn't until I arrived at UNI that I truly began to see all the opportunities UNI could provide me that other schools simply couldn't. From scholarship opportunities to access to undergraduate research, I began to see opportunities arise that none of my friends from high school had at other schools. UNI has made it incredibly clear that the university's goal is to help students succeed and reach their goals, and this is exactly why UNI has been an excellent fit for me.

You came to UNI in 2018. What were your first impressions about our school?

The thing that amazed me the most about UNI was the amount of pride everyone had in the school. From students to alumni to faculty to the community in general, everyone is proud to be involved with UNI and wants the university to succeed. As someone who didn't know anyone else on campus when I first arrived, this made it easy to feel welcome on campus and to immediately get involved with activities and groups throughout the year. Because of this, the pride for UNI has rubbed off on me and I am incredibly proud to represent UNI in everything that I do. *(Continued on next page)*

STUDENT SPOTLIGHTS

You double major in Physics and Mathematics. What drew you to these fields of study?

I initially came to UNI as a pure physics major and ended up adding the math major as a second major during my sophomore year (2019-20). Ever since elementary school, I've always loved science and how it describes and explains the world around us. Physics specifically caught my interest as it combined theoretical ideas and mathematical concepts to explain the real world. This method has always fascinated me and that is what drew me to the double major of physics and mathematics. The two subjects can work so well together, and I think many people who focus solely on one area aren't able to recognize the interaction between the two. My math classes have drastically benefitted me in my physics classes, and vice versa. While it can certainly be stressful at times to balance classes in the two difficult majors, it has also been an incredibly valuable experience that I have ultimately enjoyed.

Are there any courses in our department that you feel have made a significant impact on your growth as a mathematician? How about some math professors who a difference for you?

I've had multiple math courses that have positively affected me in different ways. Obviously, some courses are immediately applicable to my physics courses or a future career (such as calculus, or differential equations), but some courses challenge me in a completely different way and don't seem to have direct applications to physics. The courses that have challenged me the most and forced me to grow the most have likely been Advanced Calculus as well as Modern Algebra. These courses have encouraged me to think about mathematics in a completely new way that I've never done before. Specifically, Dr. Stanley and Dr. Prophet have done an excellent job of sharing new ways to think about problems in class or mathematical concepts in general. They truly show how much they care about their students and want them to succeed, while also being excited about the subjects they teach. Their teaching styles have encouraged me to continue to learn more about mathematics and to continue to push myself in each of my classes, no matter the subject.

Do you have any particularly memorable experiences at UNI?

One of the most memorable experiences I've had through UNI was the opportunity to travel with the spring basketball pep band to the Missouri Valley Conference Men's Basketball Championship in St. Louis, MO. This was my freshman year of college, and it was a thrilling experience to travel to St. Louis to do something I love and to represent UNI. It wasn't something I expected to do, so it was a new experience for me. The idea of new experiences, in general, has tended to be a theme of my most memorable moments at UNI. There are so many opportunities and activities to take part in that aren't available elsewhere but now I couldn't picture not having them. Both in and out of the classroom there are so many moments that make my experience at UNI so memorable.

Since the summer of 2020 you have been involved in undergraduate research in Physics. Can you give us a few details about the project you have been working on?

Since the summer of 2020, I have worked with Dr. Ali Tabei of the UNI Physics department conducting undergraduate research in a subdiscipline that I would describe as "computational biophysics". Through my project, I've worked with a computer program (MATLAB) to accurately simulate dynamic interactions between nucleoproteins as they compete to saturate single-stranded DNA during the DNA repair process of homologous recombination. This process is naturally stochastic, so we've worked to take a purely deterministic model and turn it into a stochastic Monte Carlo model. It's been an incredibly fascinating and valuable experience to take part in this project and I am very glad I've had the opportunity.

You are currently a senior on track to graduate next May. What are your plans after graduation?

I currently plan on continuing my education in graduate school after I graduate this next spring. I'm still narrowing down where exactly I'll be studying, but I do plan on studying Atmospheric Science focusing specifically on Atmospheric Dynamics. This will continue to utilize topics and skills that I've learned in my time here at UNI. After graduate school, I hope to find a career that will allow me to continue with the applications of these skills. While it's still a little unclear exactly what type of career this will lead me to, I would

enjoy being able to perform scientific research in some capacity. Being able to spend my career continuing to learn math and science and how they apply to the world we live in would be the ideal situation for me.

You have been a member of the UNI Marching Band since you came to UNI. What instrument are you playing and what role does music play in your life?

I have played the trumpet in the Panther Marching Band (PMB) for all four years that I've been at UNI. The band, and music in general, has always provided me with something else to turn to and work on when I begin to get overwhelmed with schoolwork or other stressful things. Music, in general, has always played an important part in my life but the PMB has a very specific role by requiring a significant amount of work while also being something that helps me to relax.

What do you enjoy doing in your free time?

Outside of classes or work I have a wide variety of interests. As mentioned previously, I enjoy participating in the marching band and other bands on campus (basketball pep band and spring concert band), but I also enjoy staying active and moving around. From running to rock climbing, I would say most of my free time is spent doing some sort of physical activity. Music and working out are just different ways for me to take my mind off the stress of classes or work and simply work on something else. They have also connected me with some amazing people that have become some of my closest friends.

Any other information that you think our readers would like to know about you?

I'm ultimately very thankful for everyone in the math department as well as everyone who supports the department in whatever way. The department has provided me with huge amounts of opportunities and support throughout my time at UNI, so I'm very thankful for the work they do for their students. ■

STUDENT SPOTLIGHTS



Baylee Smith

In December 2021 you graduated with a BA in Elementary Education and Middle Grade Education. Why did you decide to become a teacher and study the dual track?

I decided to become a teacher back in high school. I have always been a student who loves education and realized around junior year that I had a passion for working with children. Through my school district, I had the opportunity to work in an elementary classroom for several hours every day for an entire semester. This opportunity confirmed that I loved working with and teaching children in a multitude of subjects. While I was fairly positive that I did not want to focus on high school education, I was unsure of what grade would fit me best until later in my college career. After completing both my Level 1s and Level 2s at UNI, I realized that while elementary school students are amazing, I love teaching middle-level curriculum. Creating lesson plans and activities for my students to participate in is much more rewarding when I am working with the middle-level ages.

Why did you add a math minor?

I added my math minor soon after completing Math Reasoning 1 my first semester at UNI. Taking calculus in high school had left me feeling rather burnt out from math. Going into college, I was certain I would minor in science or literature. It was Math Reasoning 1 that showed me that I never truly understood math before. My K-12 education never explained why long multiplication worked. I was never shown why fractions work. My education experience showed me all of the steps without ever actually explaining the “why”.

Math Reasoning 1 made me want to teach students how to think about the subject differently. Whether working individually with a student or talking in front of an entire class, it is impossible to miss the “lightbulb” moment. My favorite part about teaching math is when I get to see those lightbulb moments as students finally understand why math works. In my experience, as soon as they understand why, the actual process becomes so much easier.

You served as a president of Student Association of Middle Level Educators (SAMLE) for two years. What are some of the group’s accomplishments or activities you are most proud of?

My favorite part about working for SAMLE is the Middle-Level Conference that the group holds every spring. Unfortunately, we were not able to hold the conference in 2020 or 2021 due to COVID-19, but my experience at the 2019 conference is actually what led me to run for the presidency position in the first place. This conference gives middle school students the opportunity to develop leadership skills and gives UNI students hands-on experience working with middle schoolers. I am also very proud of the active role that SAMLE played in the College during the 2020-21 school year. As an executive board, we felt as though it would not benefit our student members for us to host yet another weekly Zoom meeting for them to attend. Instead, we used our funds to create free resource kits for students to use in their future classes. These resources kits included free books, lesson plans, and other supplies. We had one kit during the fall semester and then one kit every month in the spring semester. Each kit was themed differently with themes like racial inclusivity in the classroom, LGBTQ+ representation, Earth Day, etc. I felt as though UNI education students were actually excited about these packets and that SAMLE found a creative way to continue providing resources to our members during a difficult school year.

You serve as an undergraduate research assistant at UT Arlington. What project(s) are you working on?

I am working at the UT Arlington as a research assistant for a project currently called Virtual Number Talks. Dr. Candace Joswick is my main contact as she is the coordinator for the project at UT Arlington. However, I am also able to work with Dr. Kimberly Conner here at UNI as she is working

along with Dr. Joswick. My main role currently is to create transcripts for the pre-recorded videos that teachers have sent in for the project. Each teacher who participates in this project worked with three-four students in virtual meetings. The researchers for this project made assignments for each teacher to complete with their students and then the teachers made a video for each assignment over a number of months. My job is to create clear transcripts for each video so that the researchers can look for patterns in student thinking/understanding without having to constantly refer back to the videos. Through this work, I am able to view how a large number of teachers approach math with their students and I am able to see the extremely varied approaches that students use when it comes to solving mathematics problems. This project still has a lot of work to be done, and I look forward to continue working with Dr. Joswick and Dr. Conner as they delve into student thinking.

What is your favorite UNI memory?

My favorite UNI memory was working with the Honors and Scholar Program. Being in the Honors Program allowed me to make a lot of close connections with both peers and mentors that I do not think I would have otherwise had access to. I love learning and being around people who are passionate about the things I am passionate about. The Honors Program allowed me to be around those people. Additionally, it was my mentor within the Honors Program that inspired me to continue my education after student teaching and pursue my master’s degree in Student Affairs. Hopefully (pending admission), I will be able to continue making favorite memories at UNI as a graduate student in the Fall of 2022. ■

DONOR SPOTLIGHT



Diana Lott Anderson

Diana was born about 75 years ago in Ann Arbor, MI, while her father was pursuing his doctorate in Mathematics. “I was very fortunate to grow up with two loving parents, Kathryn and Fred Lott. They gave me a positive look at life with a solid support foundation that gives me the confidence to tackle anything that comes my way” says Diana. Her family moved to Cedar Falls in 1949, when she was two years old. Diana’s father, Fred W. Lott, taught Mathematics at UNI for 35 years, the last thirteen years of which he served as the Assistant Vice President for Academic Affairs while continuing to teach Statistics. “As a math professor, my father was a very proper man with the highest integrity. He always did what he thought was right. As an administrator, his job included making decisions about student problems. Although I do not know any details, I do know that he agonized about some of those decisions. He was compassionate and really cared about the students.”

Diana began her education with Kindergarten on the UNI campus. She completed grades 1-12 at the newly built UNI Malcolm Price Lab School. She was accelerated in Math and did not take any math class during her Senior year of high school because she had already taken all the available math classes. “Because we lived in Cedar Falls, my parents thought it would be best that I do my first year in college at Iowa City. I tested out of several basic math classes and took Calculus as a freshman. Mathematics was my major. After that first year I took a short break from college and got married.”

When her first daughter, Julie, was a few months old, Diana enrolled at UNI but changed her major to elementary education with a math emphasis, as recommended by her father. When she asked about applying for a scholarship to UNI, her father said the University had already done so much for him and his family that he wanted to provide for her and her education. “So, there were no scholarships for me” recalls Diana. As a student, she was in two honor societies: Mathematics

(Kappa Mu Epsilon) and Education (Kappa Delta Pi). “It was really tough getting my degree while raising my daughter” says Diana. “When Julie dropped her morning nap, I dropped a five-hour class so I would have time to study. Since I did not know how difficult it would be, I just kept going, even taking classes in the summer.” By the time she graduated from UNI, Diana was pregnant with her second daughter, Dottie, and Julie was almost four years old.

Diana and her siblings affectionately called Fred by the honorific “Daddy”. “Daddy loved his family more than anything. He was always teaching us something. He continuously asked me questions and if I could not figure out a question, he would tell me the answer and say, “You would have gotten that if I had given you enough time.”

Daddy taught us about trees and flowers and plants in his beloved huge garden. We were constantly learning from him. At one point, Daddy taught me about the probability of rolling each number 2 – 12 using two dice. I spent hours rolling the two dice and placing one white chip in a pile for each resulting number. If a pile had five white chips, I replaced them with a red chip and if a pile had two red chips, I replaced them with a blue chip. Naturally, I was able to end up with a blue chip in the pile for 7, but never in the pile for 2 or the pile for 12.”

After graduating from UNI, Diana moved to West Des Moines where she did some substitute teaching. When both her daughters were in school all day, she started her career in Information Technology (IT). “I took one beginning Cobol class and learned on the job at the Iowa Department of Education starting in 1980. I worked for several different companies. One of my favorites was the Iowa Department of Revenue where I headed their Y2K project and wrote their code updating process that they used for the next two decades. As companies wanted to replace Cobol programs, I learned dot net and wrote numerous new programs for their new systems until I retired on my 69th birthday.”

While working at the Iowa Department of Education, Diana met Carl Anderson. “I was very fortunate to meet Carl. Eventually we married in 1986 and had 25 glorious years together before he passed away three days before my 64th birthday in 2011. He was only 56 years old.”

Carl and Diana enjoyed traveling and traveled a lot. “We went on a cruise for our honeymoon. Then we went on a cruise practically every year. Carl taught me to ski – first at a little hill in Boone, IA, then at Afton Alps in Minnesota. Soon we went on a ski trip every year, usually driving

to Colorado. Once we skied in Europe. We also traveled to Las Vegas once or twice a year.”

Carl was an excellent duplicate bridge player attaining his Life Master in his twenties. Diana had played party bridge, but not much duplicate. “Duplicate bridge really appealed to my mathematical mind and soon I played with several different partners at the Bridge House. I became a Life Master. Carl and I enjoyed playing in many bridge tournaments both at home and during our travels.”

In 1990, Diana became a grandma and Carl became a grandpa without having children himself. Carl was only 36 years old and was not excited about being a grandfather. “That completely changed when his 13-month-old grandson called him “Gampa”. From that time on, he was thrilled to be a grandpa. While the five grandkids were young, we would get together with them and their parents every Memorial Day weekend in a place between our three locations. Carl and I also took each of the two families to Disney World. We both thoroughly enjoyed the grandkids!”

Carl and Diana always lived in West Des Moines. “Carl never told me what to do” recalls Diana. “When I asked him if I should wear the red dress or the blue one, he said, “You should wear what you want to wear.”” In 1999, they built a new house on a golf course. Carl wanted to join the country club, but Diana felt it was too expensive to join for just one person. “Carl gave me golf clubs for my next birthday. I learned to play golf when I was in my fifties. On weekdays, we each played in separate golf leagues. On the weekends, we played together.”

After Carl died, Diana added several new activities. She started playing handbells, Mah Jongg, and setting up Zoom meetings. “I began playing handbells with a church group. We practice once a week and perform once a month September through May. I took a Mah Jongg class with three of my friends. We took a break for the pandemic, but now play once a week. I learned how to set up Zoom meetings for several groups. One of the groups continues to meet every Friday to play a zoom card game that I made up.”

Diana’s mother and father established the Fred W. Lott endowed scholarship in mathematics in 1970 and they continued contributing to this UNI endowed fund. “After both my parents died, I began making large donations to this wonderful fund. God has blessed me abundantly and this endowment has provided me with a way to give back. I have thoroughly enjoyed attending the annual luncheon that UNI uses to show appreciation to donors of scholarships. In the last several years I was able to meet some of the scholarship recipients. Meeting these very deserving mathematics students convinces me that I am doing the right thing and my donations are making a difference.”



Kathryn and Fred

KU ENGINEERING PROFESSOR BECOMES FIRST WOMAN TO WIN INTERNATIONAL MESHING AWARD*



Suzanne Shontz, professor of electrical engineering & computer science.

by Rylie Koester
KU Office of Research
785-864-0375
ryliejk@ku.edu

LAWRENCE — Meshing wasn't always at the center of University of Kansas engineering professor Suzanne Shontz's research. She wasn't even familiar with the concept when she enrolled in graduate school at Cornell University.

Now, she's the first woman to receive the 2021 International Meshing Roundtable Fellow Award in the male-dominated engineering field.

"It makes it more special knowing that I'm the first woman," said Shontz, professor of electrical engineering & computer science at KU. "I'm hoping it's a sign that more women will get more involved in the field over time."

Mesh generation — or meshing — is the mathematical and computational process of building items out of many shapes. Shontz compares it to building with Legos.

"We're putting blocks together," she said, "and we're building some kind of geometric object."

Although Shontz was once unfamiliar with the

concept of meshing, numerical methods for moving meshes eventually became the focus of her graduate school dissertation. She earned master's degrees in computer science and applied mathematics and a doctorate in applied mathematics.

Meshing is used for simulation analysis and rendering models in the fields of engineering, medicine and even fashion — leading to better understanding of structures and processes, industry advancements and more.

"Mesh generation is a very important step in computational fluid dynamics (CFD). For complex, real-world configurations, it is often the bottleneck in the CFD simulation process," said ZJ Wang, the Spahr Professor of Aerospace Engineering. "Professor Shontz's research on mesh adaptation, parallel and high-order mesh generation addresses critical needs in the CFD community."

Sandia National Laboratories gave out the International Meshing Roundtable Fellow Award at its annual conference this past year. The award recognizes an individual with a distinguished record of research accomplishments in mesh generation and exceptional service in the meshing community.

Shontz has attended the conference for about 20 years. During that time, she has served on the organizing committee, submitted and reviewed papers, taught a short course and given talks. This year, she served on the steering committee and was invited to give a keynote speech on cardiovascular mesh generation algorithms and applications.

"Suzanne's list of accomplishments and contributions to her research community is impressive both for its breadth and depth," said Erik Perrins, chair of KU's Department of Electrical Engineering & Computer Science. "We are fortunate to have her leadership here at KU."

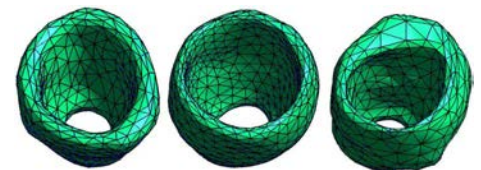
Shontz's KU lab has advanced knowledge in the field. Researchers created a mesh of the human heart that simulates the motion of a beating heart and have designed algorithms for high-order mesh generation, parallel meshing, mesh optimization and mesh untangling.

In 2012, Shontz received the 2011 NSF Presidential Early Career Award for Scientists and Engineers from the White House for her 2011 NSF CAREER project on parallel dynamic meshing algorithms, theory and software for simulation-assisted medical interventions.

A decade later, Shontz is in the midst of another award-winning year. She received the 2021 KU School of Engineering Miller Professional Award for Service and was promoted to full professor at the beginning of the fall semester.

She hopes to encourage young undergraduate engineering students, especially women, to pursue graduate school and additional education in the field of meshing. She does this by involving undergraduate researchers in her lab.

"I hope more women over time will get to know about these opportunities and see if it's something that they might like to do," Shontz said, "and hopefully grow the field that way."



High-order tetrahedral meshes of the left ventricle myocardia of a normal heart, a heart with dilated cardiomyopathy which manifests as stretched and weakened heart muscle, and a heart with hypertrophic cardiomyopathy, which exhibits abnormally thick heart muscle. Credit: Fariba Mohammadi, a doctoral candidate in Shontz's lab, generated these meshes.

* Article reprinted from <https://today.ku.edu/2021/11/18/ku-engineering-professor-becomes-first-woman-win-international-meshing-award?fbclid=IwAR2OG2UIS99GvWJK4xtQmYRWa9Dq3koloDqGscs3-OcOxZTXAFDVTpP9ws>

Contributions to an Account – Recognition 2020-21*

210174 - E.W. Hamilton Quasi-Endowed Scholarship

Lowell & Mary Doerder
Judith & Samuel Seymour

210474 - Wanda & Carl Wehner Mathematics Teaching Endowed Scholarship

David and Lois Charitable Fund
Nancy J Hoing
Ronda & William Moss
Karen Page
Bryan & Christine Redemske
Paul & Joyce Scherner

210976 - Patricia Lange Memorial Mathematics Endowed Scholarship

Reuben & Nancy Collins
Stephen & Karrie Mullenberg
James & June Smith

211124 - Fred W. Lott Endowed Scholarship in Mathematics

Diana Anderson
Eldon & Lynne Meyers

211292 - Augusta Schurrer Endowed Scholarship for Mathematics Excellence

William & Joy Carter
Lowell & Mary Doerder
Mary Helfter
IBM Corporation (Matching Gift Company)
James & Sally Lockwood
Susan Rock (Deceased)
James & June Smith

211516 - John F. & Ruth Cross Endowed Scholarship

Terry & Janice Gambaiani
Richard Sundblad

211718 - Michael Millar Endowed Scholarship

Gene & Ellen Carey
Paula & James Coombs
Terry & Janice Gambaiani
Debra & David Hill

212205 - FINE Foundation Middle Grades Mathematics Graduate Student Endowed Scholarship

Matthew Hanawalt

212220 - Rich and Dee James Secondary Mathematics Teaching Endowed Scholarship

Marina C Bernard-Naden
Rich & Dee James
Dave & Kay Kofoed
Paul & Joyce Scherner

212418 - Robert A. and Carol L. Hendrickson Crane Scholarship in Secondary Math Education

Carol L Crane

212528 - John C & Marla Putzier Peterson Math Education Graduate Student Scholarship

John & Marla Peterson

212673 - Athene Actuarial Scholarship

Athene USA

212828 - Robert R. Johnson Endowed Scholarship for Mathematics

Robert & Barb Johnson

212909 - Thiessen Elementary Mathematics Education Scholarship

Linda A Proudfit
Paul & Joyce Scherner

212924 - Nathan McCay Mathematics Scholarship

McCay Fund

213121 - Coaching Actuaries Scholarship

Coaching Actuaries

213482 - Mary & Jason Theilen Actuarial Science Endowed Scholarship

Jason & Mary Theilen

213742 - Jim & Sharon Scherbring Math Education Scholarship

James & Sharon Scherbring

220127 - Math Quasi-Endowed Fund

Linda & Jon Ahlquist
John & Beverly Anderson
Judith & Daniel Ashford
Ed & Nancy Berry
Russell Campbell
John S Cross
David & Helen Duncan
Rita & Larry Don Durchenwald
Mary Gilles
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Nancy J Hoing
IBM Corporation (Matching Gift Company)
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Marilyn & Michael Kelley
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Norman H Rutz Charitable Trust
Lee & Rebecca Okerlund
Norman & Linda Schmidt
Jon & Laura Scoles
Kim Sprain
Kathryn Trier
Charles & Nancy Weber
Vicki A Williams
Chun-Kwan & Colleen Yee

221015 - Mathematics Education Leadership Endowed Fund for Excellence

Charles E Streeter Fund
Kristin & Jay Dreyer
IBM Corporation
Roger L Larsen
Robert & Marjorie Nelson
Bryan & Christine Redemske
Paul & Joyce Scherner
Kim Sprain
Chun-Kwan & Colleen Yee

221162 - Math Leadership

Dave & Kay Kofoed
Paul & Joyce Scherner
Kim Sprain

221288 - Actuarial Science Fund

American Family Insurance Group (Matching Gift Company)
Marshall & Theresa Blaine
David & Carol Clayton
IBM Corporation (Matching Gift Company)
Nationwide Insurance Foundation (Matching Gift Company)
Brad N Nieland
Luke & Lindsey Peterson
Randall & Julie Holmes Donor Advised Fund
Andrew & Jennifer Schafer
Kim Sprain

221293 - Augusta Schurrer Endowed Mathematics Grant

James & June Smith

222452 - Mathematics Undergraduate Research Assistant Fund

Kim Sprain

222460 - Dr. Hyo Myung Family Endowed Mathematics Faculty Enrichment Fund

Kim Sprain

222973 - Kappa Mu Epsilon Endowed Fund

Russell Campbell

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210174 - E.W. Hamilton Quasi-Endowed Scholarship

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John Deere

We tried to include everyone who contributed to Mathematics Department Funds.

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Department of Mathematics Funds

The following funds and scholarships are named for UNI emeritus faculty members:

Diane Lee Sorenson Baum Endowed Scholarship – scholarships for elementary education majors with a K-8 mathematics minor (213897-30)

E.W. Hamilton Quasi-Endowed Scholarship – scholarships for students enrolled in any mathematics program (20-210174)

Bonnie Litwiller Mathematics Teacher Endowed Scholarship – scholarships for students majoring in Mathematics-Teaching (30-212639)

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)

Augusta Schurrer Mathematics Grant – scholarship for math majors with 65 hours of completed work at UNI; preference to secondary teaching major (30-221293)

Thiessen Elementary Mathematics Education Scholarship – scholarships for elementary education majors with a K-8 mathematics minor (30-212909)

Carl and Wanda Wehner Math Teaching Endowed Scholarship – scholarships for juniors or seniors majoring in Mathematics – Teaching (30-210474)

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

Robert Allender Mathematics Teaching Endowed Scholarship – scholarships for sophomore, junior, or senior students majoring in Mathematics-Teaching (30-211638)

American Society for Quality Control-Endowed Math & Computer Science – scholarship for juniors or seniors majoring in mathematics (30-210419)

Athene Actuarial Scholarship – scholarships for students majoring in Actuarial Science (21-212673)

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Carol Woolson Beck Endowed Scholarship – scholarship for junior or senior in mathematics education (30-212611)

Robert W. Bettle Math Education Endowed Scholarship – scholarships for seniors in mathematics education (30-211269)

Glenn Boysen Endowed Math Scholarship – scholarships for students majoring in mathematics (30-211136)

Alice & George Brown Endowed Math Scholarship – scholarships for a declared major in the Department of Mathematics (30-211526)

Irvin and Dorothy Brune Mathematics Education Endowed Scholarship – scholarships for mathematics education majors (30-211613)

Coaching Actuaries Scholarship – scholarships for actuarial science majors (21-213121)

Robert and Carol Hendrickson Crane Scholarship in Secondary Math Education – scholarships for juniors or seniors in secondary mathematics education (21-212418)

John F. and Ruth Cross Endowed Scholarship – scholarships for Statistics and Actuarial Science majors (30-211516)

Elementary Mathematics Education Scholarship Endowment – scholarships for elementary education majors with a minor in mathematics at UNI (30-213313)

FINE Foundation Middle Grades Mathematics Scholarship – scholarships for graduate students currently employed as math teachers in Iowa (30-212205)

Rich and Dee James Secondary Mathematics Teaching Endowment – scholarships for juniors or seniors in secondary mathematics education (30-212220)

Robert R. Johnson Endowed Scholarship for Mathematics – scholarships for juniors and above majoring in mathematics teaching with a concentration in statistics (30-212828)

Jerry Jurschak Actuarial Science Scholarship – scholarships for students majoring in actuarial science (21-221288)

Patricia Lange Memorial Endowed Math Scholarship – scholarships for juniors or above in any mathematics major (30-210976)

Patricia J. Larson Mathematics Scholarship – scholarships for students majoring in mathematics (21-213890)

Nathan McCay Mathematics Scholarship – scholarships for students majoring in mathematics (21-212924)

George and Mary McCoige Endowed Mathematics Education Scholarship – scholarships for sophomores and above majoring in Mathematics-Teaching (30-213979)

Gladys Mittman Endowed Math Scholarship – scholarships for juniors and above majoring in mathematics (30-212708)

John C. & Marla Putzier Peterson Mathematics Education Scholarship – scholarships for graduate students in mathematics education (21-212528)

Prem Sahai Actuarial Science Endowed Scholarship – scholarships for actuarial science majors (30-211550)

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Department of Mathematics Contribution Form

If you would like to support a Mathematics Student and/or the Department of Mathematics,

please fill out the form below and return it to :

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\$_____ **Actuarial Science Fund** (provides non-endowed scholarships, and covers student fees on successfully completed actuarial exams) 21-221288

\$_____ **Mathematics Leadership Fund** (for the enhancement of teaching secondary mathematics) 21-221162

\$_____ **Mathematics Undergraduate Research Assistant Fund** (for general undergraduate research assistance) 21-222452

\$_____ **Dr. Hyo Myung Family Mathematics Faculty Enrichment Endowment Fund** (provides faculty enrichment support for young (3-5 years) pretenured mathematics faculty members at the University of Northern Iowa) 30-222460

Online: If you prefer, you may give via our website: www.uni.edu/math. Use the "Donate to Mathematics" button at the bottom of the homepage. Please specify designation and dollar amount within the online form.

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

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Department of Mathematics
University of Northern Iowa
Wright Hall 220
Cedar Falls, IA 50614-0506

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Let us know what you have been up to. You can email us at mathematics@uni.edu or return this form to:

Department of Mathematics
University of Northern Iowa
Wright Hall 220
Cedar Falls, IA 50614-0506

First Name _____ Last Name (maiden) _____

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The following person has been designated to handle inquiries regarding the non-discrimination policies and serves as the University Title IX Officer: Leah Gutknecht, Assistant to the President for Compliance and Equity Management, Office of Compliance and Equity Management, 117 Gilchrist Hall, UNI, Cedar Falls, IA 50614-0028, 319-273-2846, leah.gutknecht@uni.edu

In compliance with the Jeanne Clery Act, UNI publishes an Annual Security & Fire Report. The report contains information regarding campus safety and security including crime prevention, crime reporting policies, drug and alcohol abuse, sexual assault and student disciplinary procedures. The report also contains the three previous years' crime and fire statistics for on campus locations and certain off campus locations owned or controlled by UNI. To obtain a copy of the report, contact the UNI Department of Public Safety located at 030 Gilchrist Hall, Cedar Falls, IA 50614, call 319-273-2712 or visit www.vpaf.uni.edu/pubsaf/crime_stats/clery.shtml.