



the Alworth REPORT

ALWORTH MEMORIAL FUND NEWSLETTER

FALL 2022

What Can You Do with a Mathematics Major?

Let's start here: According to the U.S. Bureau of Labor Statistics, **Employment in math occupations is projected to grow 28 percent from 2020 to 2030**, much faster than the average for all occupations.

Part of the reason for this is the sheer number of industries requiring the quantitative, analytical skills of Math degree graduates. **Technology, government, manufacturing, science and medicine, financial services, aeronautics, economics** and many other areas all require expertise in math. And the applications for a math degree continue to expand. Data analysis is used in virtually every field that exists in the modern world. Mathematical expertise is needed in everything from producing electronic billboards to creating computer algorithms to forecasting the behavior of the stock market to building next-generation airplanes, rockets and spacecraft. And what's more, the need for mathematics skills is projected to continue to grow.

We have highlighted two recipients, math majors, so that you can see the possibilities are endless to work in an interesting career with an ability and love for math.



► Madison Roy

Alworth scholarship recipient **Madison (Maddy) Roy** is a young woman who operates in logic.

She was drawn early to science and math because "there's only one right answer" and it all works out perfectly. She enjoys clarity.

So, after graduating from Cook County High School in Grand Marais, Madison knew she wanted to explore science and math, but wasn't sure which direction was right for her. She was attracted

to the medical area, but not to direct patient care. The Guidance Counselor and teachers at her school had made her aware of the

multiple opportunities for study and financial help.

As Madison pondered her next move and all the options before her, she may have wished there were "only one right answer." But alas, this was a question that had many possible right answers.

As part of the college selection process, she toured the campus of the University of Wisconsin at LaCrosse, and she fell in love with it. The brilliant student of logic made an instantaneous decision on gut instinct and emotion, utterly subjective in every way. She loved the vibe and had found her college home. She settled in and became known as

MATH MAJORS: Madison Roy continued on page 5...

► How To Apply for \$20,000

Go to our website to fill out the application.

Applications are accepted from November 1 to January 15.

Recipients receive \$20,000 distributed over eight semesters providing they maintain our eligibility requirements in a STEM field of study.

www.alworthscholarship.org  

Dream it. Achieve it.



► Emma Korhonen

Emma Korhonen: Following A Dream

It is not hyperbole to say that Emma Korhonen is a spitfire. She is enthusiastic, smart, funny and passionate about her work. Growing up in Brainerd, she would join her father and grandfather when they tinkered in their garage workshops. They built things, working with wood and sheet metal, they fixed things. Her love of tinkering is real.

At Brainerd High School, she participated in "Project Lead the Way," a STEM learning curricula. During this time, a teacher encouraged her to join the robotics team. By the time she was a senior, she was the Lead Electrical for the team and would compete in a robotics tournament in Duluth, where she met faculty members from Michigan Technological University. This meeting will be important later.

Despite her many successes during high school, Emma had more than her share of personal setbacks to overcome. In her sophomore year, she lost two close friends, Levi and Jake, to suicide. It was a terrible loss for Emma and her entire community. She was emotionally torn up, but she was also determined to keep going and pursue her dream of a college degree in engineering.

On holidays and breaks, she scoured her school's list of scholarships. The Alworth Scholarship was at the top of her list, and people she knew had been past recipients. Emma admitted that she was not entirely confident of her chances when she decided to apply, but she applied anyway.

When she did receive the Alworth Scholarship, she was overjoyed that it would allow her to attend her first-choice school: Michigan Technological University. She had met some faculty members during the robotics tournament in Duluth, and so she toured the campus. Emma knew that her major would be robotics engineering, and wanted the "hands on" approach that Michigan Tech offered. She is deeply grateful for the opportunities afforded by the Alworth scholarship.

Emma will be a junior at Michigan Tech this fall. As the Head Teaching Assistant in the Engineering Fundamentals Division at Michigan Tech, she sees students every day who have no passion for engineering, only being in it for the money. She said she feels sorry for them. She believes the old saying, "If you love what you do, you'll never work a day in your life."

Emma also has an ongoing internship during summer and school breaks with Graphic Packaging International. She has a wonderful mentor there and is challenged every day to build, test, refine, and debug custom packaging machinery, a job she loves.

Emma wants to be a leader in building machines to create new and sustainable products. As for herself, she is sustained by time spent in nature - enjoying the outdoors while hunting, fishing, hiking or camping. But her life experience has taught her that people and communities also need to be sustained. And it's why you'll find her playing softball on behalf of "Smiles for Jake," a suicide prevention program named for the friend she lost in high school. ■

WORDS OF ADVICE from Alworth recipients

“ Stop putting limits on yourself. Try everything that is of interest to you and you will find that thing that lights your fire. ”

- ANNA HALL, 2017 graduate of South Ridge School and Alworth recipient

Max Salzer: Engineering Solutions

Growing up on a 1,000-acre farm and cattle ranch in Barnum, Minnesota, problem-solving was a fact of life very early for Max Salzer. He and his father handled their farm, the ranch and the constantly failing equipment needed to keep things running. He learned everything from welding to setting fence posts. Everything had to be accomplished with what they had on hand, and Max's passion for engineering was born out of the frequent necessity to find creative solutions with the tools available.

As a student at Barnum High School, counselors and science teachers urged him to apply for the Alworth STEM Scholarship. But Max was unsure about his course of study, with dual interests in agricultural engineering and biomedical engineering. Aside from his work on the farm, he had watched his grandparents deal with various health issues and he had a strong desire to pursue the engineering of medical devices that could improve lives.

Max was overjoyed when he received the Scholarship and says it has made the most significant impact on his college life. He stressed how much the funding mitigated his financial stress and allowed him to take jobs that were related to his field of study, as opposed to making choices based on financial pressure.

He landed on North Dakota State University to pursue his degree



and ultimately chose mechanical engineering as his undergraduate focus. He is still interested in the biomedical engineering area, and is considering whether to pursue a graduate degree or go directly into the manufacturing/engineering sector.

Seeking out every opportunity, Max joined the Society of Automotive Engineers. Through this work, he has learned a great deal and enjoyed being part of a team that designs and builds Formula 1 racing cars. Additionally, his internship with Abbott Laboratories in Plymouth, Minnesota, has Max involved with developing a new type of catheter that can create a 3-D model of a human heart and identify blockages.

It's all part of the engineering and problem solving work that Max has thrived on his whole life. When asked what he liked to do to relax, Max said he had just completed building a 3-D printer, which can create almost anything he can design. Clearly, the term "relaxation" has different meanings for all of us. But he's not all work. He loves watching Twins baseball, and enjoys playing the game, too.

What Max loves most about the STEM fields of study is the excitement of learning the skills to solve real-world problems. It's easy to believe that Max will be solving those problems for many years to come. ■



Nelson Isaacson: Taking the Right Steps

Growing up on the Iron Range, Nelson Isaacson's parents made their children aware of a variety of machinery in their environment - everything from snowmobiles to mining equipment came into their consciousness. Eventually, curiosity led him to start taking things apart - small electronics and equipment - and he wondered "How could I make this better?" This love of tinkering remains with him to this day.

At Mountain Iron-Buhl High School, Nelson's teachers encouraged him, allowing "side experiments" in science classes. When a school counselor suggested that he apply for the Alworth Scholarship for the study of STEM fields, Nelson was nervous. He worried how his small town education would stack up against students from bigger schools and bigger cities.

Nelson's education and keen interest stacked up just fine. He received the Alworth Scholarship. Nelson went on to complete his undergraduate work and then earned a master's degree in materials engineering. Materials engineering is an interdisciplinary field involving the properties of material (matter) and its applications to various areas of science and engineering. He works now as a Senior Manufacturing Engineering Technician for ThermoFisher Scientific.

However, the journey was not all smooth sailing. Like millions of others, Nelson had dealt with feelings of depression and anxiety throughout his high school years. Because his schedule and work load

at North Dakota State University were intense, his symptoms became more pronounced. When he failed a couple of his classes, Nelson knew he had to take action to get back on track. He sought the help of doctors and counselors, and with the support of his family, he faced the issue head on. He was officially diagnosed, received treatment and worked with counselors to get back on his feet.

Nelson gave himself permission to take small steps, to slow down when it was necessary. In fact, one of his favorite books is *Small Steps* by Louis Sachar. He credits his wife as a key to his success, along with his family, a love of classic science fiction, and his continued dedication to tinkering.

Nelson credits pursuing his master's degree and landing his first professional job to his interest in 3D printers. When asked, what advice would he give to high school students, he said, "Go for it." STEM fields will lead you to things you didn't even know existed. Find something that interests you and start exploring. You'll be amazed at what you find. ■



Megan Gates: A Scientific Approach

As a student at Duluth East High School, Megan became intrigued by science. Her chemistry and anatomy teachers made science fun and their joy in teaching the subjects was infectious. Megan would go to her chemistry teacher's room well before class began so they could chat. Those chats piqued her interest and gave her the confidence to think about science as a future career.

During high school, she participated in athletics & band, community volunteering, and working part time, all while maintaining a 4.0 GPA.

Megan's parents, both educators, encouraged her to apply for a variety of academic scholarships. During one recent chat, Megan made a point of saying that she was proud of herself for "taking the leap" of applying for the Alworth. She had assembled letters of recommendation, both academic and extracurricular, and felt she had given herself the best shot possible. "Confident, but unsure," was how she put it.

Megan had made some decisions about her eventual college choice. First, she limited her applications to schools within Minnesota. She wanted some distance from home, but not so much that travel home would be a big challenge. Secondly, she wanted a school where she could continue her athletic activities, as she had done all through high school.

When she received the Alworth Scholarship, she chose Moorhead State University, where she pursued double majors of ecology & evolutionary biology, along with double minors in math

and chemistry. She graduated from Moorhead in 2020, and is now a graduate student in Veterinary Medicine at the University of Minnesota. She also works the overnight shift at an emergency veterinary hospital.

When asked to talk about obstacles she has overcome, she said she has struggled (and still does) with the expectation of

perfection. She characterizes herself as "driven" and throughout her high school and college years, Megan often pushed herself relentlessly to achieve her academic and athletic goals. She related how the first time she failed to achieve a 4.0 GPA, she laid awake really beating

herself up over it. In what she called a bit of an epiphany, she awoke the next morning to find that the sun still rose, the earth still spun on its axis, and it was not, in fact, the end of the world.

Now, she has a healthy appreciation of doing her best, while knowing that not every single day will be at 100% peak performance. She says it's just fine to make mistakes and to try new things without the expectation of perfection. She's learned that it's okay to change your mind, and it's okay not to have everything figured out.

As for the future, Megan does know that she wants to work with dogs and cats and/or therapy animals. She's considering being an emergency doctor, working in oncology, or focusing on a more research/clinical pathology role. As she heads for year three of her graduate program, Megan is happy with where she is and ready for whatever comes next. ■

"It's just fine to make mistakes and try new things without the expectation of perfection."

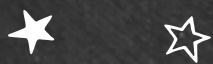


► Megan Gates

WORDS OF ADVICE from Alworth recipients

“ I wasn't the most confident in myself when applying for the Alworth Scholarship because that's so much money. Do I deserve it? I did it anyway, it's not going to hurt me if I don't get it. **”**

- LORI HUSEBY, 2017 Alworth Scholarship recipient



MATH MAJORS: Madison Roy *continued from page 1*

$$a^2 + b^2 = c^2$$

"Momma Maddy" in her dorm, because she kept a watchful eye on her friends.

Although her original thought had been to major in Biomedical Engineering or Medical Statistics, she was unable to get into Biology courses in her freshman year. In a happy accident, she ended up walking the math road with Physics courses, which led to a Statistics class, where she truly found her passion.

As perfect timing would have it, UW-LaCrosse launched a new program that very year. Through a concurrent enrollment program, students could begin graduate level courses while still completing their undergraduate work. This was a tremendous cost savings, basically allowing students to complete Undergraduate and Graduate degrees in five years, and Madison jumped at the chance. Between the Alworth Scholarship and working two jobs every summer at home, she

graduated debt-free.

When her instincts led her to UW-LaCrosse, Madison had no idea how closely her school was tied to the world-class Mayo Clinic. Upon completion of her undergraduate and graduate degrees (Statistics and Applied Statistics, respectively), she was hired by the Mayo Clinic as a Biostatistician, and she is doing work that she absolutely loves, remotely from her home in LaCrosse. She supports lab work in investigating a variety of illnesses and diseases, and is currently working on a population based research project to quantify how economic and living circumstances impact health outcomes.

When she is not using logic to improve world health, Madison enjoys hanging out with her friends, rollerblading, weight lifting and "anything water-related." Sometimes she just goes with her gut. ■



► Liam Prato

From a very young age, Liam Prato viewed math as a really fun game. As a pre-schooler, he was "obsessed" with counting out loud. His mother listened daily as he practiced counting as high as he possibly could.

By the time he was in fifth grade, he was part of the "Math Masters" program. The group was led by his grandfather, who volunteered his time to

teach. Liam explored advanced math through the classes and competitions. At Grand Rapids High School, his math teachers helped him create a class schedule that could accommodate telepresence math courses. This allowed him to take advanced courses that weren't available at his school.

Liam's mother was a counselor at the high school, and she made him aware of the many scholarships available. He applied for several, including the Alworth. At the same time, he was recruited by a number of smaller schools to play basketball, and he assumed that's what he would ultimately do.

That plan changed when he received the Alworth Scholarship. Suddenly, much better schools were possible, and he chose Amherst College.

Liam says he was a bit overwhelmed upon arrival at Amherst. Because many Amherst

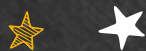
students had come from wealthy backgrounds and attended the very best preparatory schools, he experienced "imposter syndrome," unsure if he could compete at their level. At the same time, he was tremendously excited to meet students from all over the country and the world, people he hadn't had much exposure to in his small town.

And then Covid arrived. Many of his courses became "remote," which meant spending more time in the dormitories. Like so many have experienced during the pandemic, Covid brought both silver linings and sadness. According to Liam, one silver lining was that more time in the dorms meant getting to know students across a multitude of major programs. He enjoyed spending time with such a variety of personalities and said that too often, students from different study areas never even meet in college.

But there were also terrible challenges. While away at school, he lost his grandmother and grandfather to Covid. When he spoke about this, he said it was very hard for him because he was not home to lend support to his family during that time. It was a struggle, but he kept working hard on his academics.

Now, Liam is heading towards his junior year with a double major in Math and Physics. Though he is unsure which direction his future career will take, he is grateful for the variety of choices available to him, due in part to the Alworth Scholarship. His advice to students in school is to "work as hard as you can, stay out of trouble, and take advantage of every opportunity." At the Alworth Memorial Foundation, we think this is sound advice indeed. ■





Gracie Bahr: NASA Internship Tracking Satellites

When I spoke to Gracie Bahr, she was walking between classes on the first day of her junior year at the University of Minnesota-Duluth, where she is pursuing a double major in Math and

Mechanical Engineering. Oh, and she just completed a summer internship with NASA at the Goddard Space Flight Center in Maryland.

How did a UMD Sophomore from International Falls end up working for NASA? Well, as she honed her resume for work and/or internships, she sought feedback from a Twin Cities acquaintance who worked for a government subcontractor. Instead of giving her resume tips, he sent her resume on to others in his company and the next thing Gracie knew, she had a job with the company working on NASA projects. She was sent to the Goddard Space Flight Center in Maryland as part of the Operations team for the "LandSat" mission. This mission operates satellites that continually monitor Earth's land mass, circling the globe every 99 minutes. Gracie generated coded instructions for satellite movements and tasks, as well as tracking and analyzing the data continuously coming back.

She says one of her greatest challenges came through learning



to "code" for the satellites in the special language they speak.

She had a wonderful experience at NASA. While it provided tremendous learning opportunities, she also saw "how much she didn't know" and the many different options open to someone with a STEM background.

Gracie says she will apply to work for NASA again next summer, and that this, along with her undergraduate work is helping her choose a career focus for Graduate school. For now, she's enjoying the exploration. ■



Reflecting on

STEMtalks

with Professor Alworth

The last few years so many things changed very quickly, and the world had to change in response. I was wondering how our students are faring. Were they finding their footing or were they surrendering? So, I was happy to have the opportunity to interview Alworth Scholarship recipients and hear their stories, their stumbles, and lessons.

These students are, understandably, proud of their accomplishments. A sentiment well-earned once you hear the fears and self-doubts that kept them awake at night. Many experienced failures and setbacks, both personal and academic. But they persevered. They managed issues. They sought out help, leaned on and helped their friends. They found a way through.

Successfully navigating these experiences made them stronger and contributed to achieving their goals.

These students are inspiring, not because they are super heroes where everything comes easy, but because they are human and imperfect. And despite the challenges they faced along the journey, they never gave up on themselves – a quality that I greatly admire.

To access their stories, go to www.alworthscholarship.org. Whether you click on the STEM Talks, Newsletters or watch a short video clip, it is my hope that you find them so motivating that it inspires you to apply for the Alworth Scholarship. ■

SCHOLARSHIP SPOTLIGHTS



COLE BAUMAN, Grand Rapids, MN

According to Cole's Physics professor, his love of learning and ability to connect with others are the recipe for exceptional academic achievement. Now in his senior year at UMD with a Biology major and a Communications minor, Cole credited the Alworth scholarship with giving him the time and space to "learn to be an adult." Without the stress and pressure of holding an outside job during his education, Cole was able to find his true calling, a process that involved changing majors multiple times. Cole's skills, both in science and communication, will allow him to bring varied interests together at the intersection of science and effective messaging. His ability to collaborate and communicate will empower his efforts, and at the Alworth Foundation, we can't wait to see where the future takes him. We'll also be following the development of what promises to be an impressive bow tie collection. ■



MARIAH MARTIN, Proctor, MN

Mariah's passion and determination are inspiring to behold. This determination showed itself recently when she and all her roommates were stricken with Covid during final exams, and despite this, Mariah powered through her illness and successfully completed her finals! Her devotion to science is matched only by a fiery passion for public health. In addition to her intense academic schedule, Mariah has already begun volunteering in the public health area. One of her teachers wrote of her that "Mariah is an excellent student who is dedicated, and enhances our school climate with her positive attitude." Perhaps her instructor was referring to her deep desire to help others. Or perhaps they were speaking of her enthusiasm for being a mentor to those needing support. What we know for sure is that Mariah's talent and dedication will serve us all well as she pursues her passion for addressing important societal issues through science and public health. ■

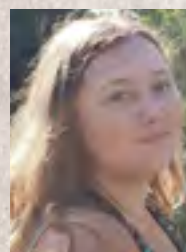
"The scholarship wasn't just receiving money, it was receiving an entire support system that will be there to help you through your entire four years of college."

Go to YouTube Alworth Scholarship, Mariah Martin shares Steps for Success for applying for scholarships.



JORDAN BOLOS Cloquet, MN

It was a high school Chemistry teacher who ignited Jordan's interest in Chemistry, and also pointed him toward applying for the Alworth Scholarship. Receipt of the scholarship allowed Jordan to get his education without the need for a job outside school, something for which he expressed his deepest gratitude. Because he had the support of the Alworth Foundation, Jordan decided he would treat his academic pursuits as a job, and he did. He dedicated himself to it completely, and has thrived in his academic work, graduating last fall with honors. Now, he has joined the American Institute of Chemical Engineers, and works as an Engineer for Crown Iron Works in Blaine, Minnesota. Crown Iron Works extracts oils from seeds such as soybeans, canola and sunflowers for use across a multitude of manufacturing sectors. As the future of biofuels and food manufacturing continues to rapidly evolve, Jordan will bring his tremendous talent and dedication to bear re-engineering a better future for all of us. ■



SAMANTHA HOLLINDAY Big Fork, MN

Samantha faced hardships early in her life. Her father passed away when she was young, leaving her mother struggling alone to support her and her brother. Samantha feared that her dreams of going to college were not achievable. But she applied for and received the Alworth Scholarship. Samantha says that receiving the Alworth Scholarship made her feel like she had more people behind her and beside her - people who had faith in her, who believed in her potential. And that made all the difference. She still faced struggles - the stresses of academics, a global pandemic and the loss of a family member at home. But she carried on and she will graduate this fall from UMD with a dual focus on Biochemistry and Chemistry. She hopes to attend Medical School after taking a gap year to gain work experience. And just like earlier in her life, we at the Alworth Foundation have faith that she will overcome any obstacles in her path to achieve success. ■

His whole life, **Carsen Jones** has been captivated by human engineering achievements.

Carsen Jones' interests include everything from bridge construction to modern technology (such as cellular devices) and electronic medical appliances. As a student at Esko High School, Carsen was introduced to Robotics that exposed him to learning about design skills. When scheduling issues complicated his efforts to learn Computer-Aided Design (CAD) in the classroom, a conscientious teacher made some accommodations so he could instead utilize online resources and a CAD program textbook provided by the school.

Now in his sophomore year at Michigan Technological University, he is one of only two people this school year preparing to take the Certified SolidWorks Associate (CSWA) Exam. A professional certification exam that testifies to skills in 3D modeling, design concepts and sustainable design.

Carsen embraces the world of 3D printing technology, especially as it pertains to the newer metal printers and biomedical



applications. He enthusiastically shares how exciting it is to be able to fabricate something new, and useful, from your own design. He is very motivated to use his education and skills to improve lives.

His interest in the BioMedical field is apparent. When asked about his dream job, he excitedly pointed to a number of intriguing areas using new advanced technology: designing and creating new prosthetics, tissue engineering, "bio-printing," which uses cells to generate organs, stem cell research and therapies.

Like a good engineer, Carsen recognizes the need to design a work-life balance. So he also schedules time for outdoor activities like soccer and rock climbing. He belongs to a number of

clubs at school and will be looking for summer internship and work opportunities that will allow him to meet new people.

Carsen is an intelligent and personable young man who is fun to talk to. He has way of connecting with people that will help with his ultimate goal to make a positive contribution to the world. ■

IN MEMORIAM

June Hendrickson

October 24, 1929-July 2, 2022

This year, we lost a champion of education and a lifelong friend to the Alworth Foundation. One of the first recipients of the Alworth Scholarship in 1949, June Hendrickson went on to earn degrees in Education and Mathematics from UMD, and began a teaching career in Hibbing, Minnesota, that would span 44 years. During her long career, she taught Mathematics, was instrumental in bringing technology education to the district, and showed generations of students the value that education could bring to their lives.

Following her teaching career, she served 17 years on the Hibbing School Board, for a total of 61 years serving education in the Hibbing area. She was a lifelong learner, an active volunteer in her community, and belonged to a variety of local organizations. June presented the Alworth Scholarship to worthy students nearly a dozen times, and she embodied the spirit of education that we value so highly.

June loved learning and believed strongly in the work of the Alworth Foundation. And we believe she truly exemplified the spirit of the Alworth Scholarship. ■



The Alworth Scholarship has been supporting students since 1949 and we intend to continue changing lives well into the future! If you're thinking about applying for an Alworth Scholarship, we say GO FOR IT!

The Alworth Scholarship has made college possible for thousands of students, and we want to add your name to the list. To get you started, check out these **Tips for Applicants** from 2022 Alworth Scholarship recipient Grace Hrabik... <https://www.youtube.com/watch?v=IdBwfBWoC34>. And we've got ideas for parents, too! Grace's mom Kelsey, a 1998 Alworth Scholar, shares her **Parent to Parent Tips** for helping your special student through the application process... <https://www.youtube.com/watch?v=IRPiLgZ8gTU>. Check them out!