



the Alworth REPORT

ALWORTH MEMORIAL FUND NEWSLETTER

FALL 2020

Passion + Determination + Self Control = Success

What makes people successful? Recent research has shown that it is a combination of being fueled by passion and undeterred determination toward reaching a goal, plus having the self-control to stay on track to achievement.

In other words, successful people have grit.

Over the past 14 years at the Foundation, I have seen this formula play out time and again with great success in our recipients. Affixed with a deep love of learning, Alworth scholars work the formula embracing both the joys and the challenges of the learning process.

Below are common beliefs and characteristics that successful Alworth scholars share.

They:

- Believe they can achieve anything they put their minds to;
- Learn from their mistakes and the mistakes of others;
- Persevere through challenges, and see them as opportunities to learn and grow;
- Believe setbacks promote greater learning;
- Are disciplined in their effort to reach a goal;
- Believe that one can always learn more, do more and improve;
- Tackle challenges beyond one's current skill level and welcome them.

We are proud of our recipients and their hard-earned success and accomplishments. In this issue we highlight several alumni and current students who have, well, grit. They inspire us every day and we hope they inspire you, too. ■



Patty Salo Downs

Patty Salo Downs
Executive Director



“ A dream doesn't
become reality through magic; it takes
sweat, determination and hard work. ”

- COLIN POWELL

www.alworthscholarship.org  

Dream it. Achieve it.



ALUMNI SUCCESS STORIES

For Dr. Tori Bahr, MD also stands for Mentoring Dedication

We're not quite ready to issue pom poms and megaphones to our scholarship selection committee, but Tori Bahr, MD, would understand if we did.

The graduate of Brainerd High School, Augsburg College and the University of Minnesota Medical School's Class of 2014 credits that committee with keeping her going during her arduous studies.

"Every semester when I'd turn my grades in to the Alworth committee, it was as if I had this team cheering for me," says Dr. Bahr, who now practices in St. Paul at the complex care clinic of Gillette Children's Hospital. "When you're studying, you think you're doing it yourself. But then you'd realize the people supporting you were bigger than just you. The Alworth folks kept reminding me that they believed I could do this."

Could she ever! Her dedication and success have been so impressive that she received Augsburg University's 2019 First Decade Alumni Award "for making significant progress in their professional achievements and contributions to the community."

It's a wonder Dr. Bahr found time to accept the award, though, because she has taken the concept of giving back to new heights. She now mentors many others through the challenges of getting into medicine.

"Med school is its own little world of navigating how to get in. It's extremely expensive to apply and quickly gets cost prohibitive in terms of tests you have to take, application fees and traveling to different med schools," she says. "Students with parents in medicine get guidance from their families, but those of us who didn't have that advantage can quickly get overwhelmed. There are a lot of logistics regarding how the system works, and you have no way of knowing them until you're in the middle of it all."

She frequently hosts informational sessions with 30 to 40 undergrads thinking of going to medical school. She gives them input on their application letters, conducts mock interviews to



► Dr. Tori Bahr, enjoying the outdoors at Lake Louise in Alberta, Canada with husband Paul Sanft and their daughter, Eleanor.

help them prepare and invites them to contact her for one-on-one advice.

"It gives me a lot of joy to help people get to the place they want to. I couldn't have gotten this far without people who provided mentorship, who asked me tough questions. I just want to return the favor. Medicine is far better when it includes more diverse backgrounds and experiences."

Doctor, mentor and Alworth Scholarship recipient are just three of her titles. She's also wife to Paul Sanft and mom to their young daughter, Eleanor. They're now in the early stages of visiting all 59 U.S. National Parks in the coming years.

Does anyone doubt they'll accomplish this? We certainly don't. Thank you, Dr. Bahr, for carrying on Marshall W. Alworth's tradition of so generously giving back to others. ■

“ A clear vision, backed by definite plans, gives you a tremendous feeling of confidence and personal power. ”

- BRIAN TRACY, Motivational Speaker & Author

Already successful, **Katie Bourdreau-Fors** pursues dream to be a medical examiner

Katie Bourdreau-Fors is on the fast track to the professional life she has wanted since she was a teenager. In two years, after graduating from Eveleth-Gilbert High School in 2014, she obtained a mortuary science degree from the University of Minnesota. It helped that she took a lot of Mesabi Range Community College courses during high school, enough to earn an associate degree. It also helped, once in the throes of college and staying on track, that her tuition was supplemented by an Alworth scholarship.

"It's the only way I could have gone through schooling," she said of the scholarship. "It's absolutely a great organization."

She said her big dreams to attend medical school and eventually work as a medical examiner are "first generation." She didn't come from a family of doctors. Her father is an insurance actuary and her mom was home with the kids and worked as a dental hygienist.

Katie's still amazed that she's been able to get this far, this fast, in the medical field.

She's been on track since she was a child. She remembers attending a funeral service for her great grandmother and the funeral director making an impression on her. "He explained what happens after death and how the body is prepared," she said. "Most people would just skirt around the topic versus actually addressing what happened."

She said she uses what she saw then in her work today as a licensed "funeral director for hire." It means she provides relief for overworked funeral directors

and staff, most recently back home in the Virginia area. She recently moved to the Twin Cities area and is starting a company to do the same there. While other Alworth Scholarship recipients featured in this newsletter have interests in such areas as electrical engineering and ecology research, Katie's focus on mortuary science reinforces the compassionate aspects of math and science.

Katie often thinks back to that experience as a child. It's "getting a feel for the family" and "dealing with children," she said of her work. She said coming back home was a way for her to "give back to the community" that did so much for her. Her childhood allowed her to have dreams and make them come true, she said. "It put me on a career path."

She recently got married and is buying a house, so she needs some time to get a firm financial base before taking on medical school and forensic pathology and eventual work as a medical examiner. It's a different pace, she admits, but her passion towards her dream remains steadfast.

She knows all about saving money and finding ways to earn it. She knew students at the U who took part-time jobs in their field, like night attendant at a mortuary, to make ends meet. With the scholarship, she was able to get her work done efficiently, she said. Without it, she imagines a lot of juggling and stress. "I would have had to do some kind of work," she said.

And that would have created a drag on her fast-track educational life. ■



► Katie Bourdreau-Fors

“ Your conscience shouts, 'Here's what you should do.' While your intuition whispers, 'Here's what you could do.' Listen to that voice that tells you what you could do. **”**
Nothing will define your character more than that. **”**

- STEVEN SPIELBERG, speaking at Harvard's commencement



ALUMNI SUCCESS STORY

► Dr. Greg Ojard, holding two Ceramic Matrix Composite nozzle pieces for a NASA experimental aircraft.

Dr. Greg Ojard is transforming how gas turbine engines power airplanes

"As a kid, I loved seeing engineering in action," says Greg Ojard, Ph.D., of his formative years in Knife River. "I'd run down to the railroad tracks and watch trains go back and forth between Two Harbors and Duluth. I'd watch ships on Lake Superior and F-101 Voodoos from the Air Force Base fly overhead."

Decades later, the graduate of Two Harbors High School still loves seeing engineering in action, but now he's also transforming it. Dr. Ojard has two patents and more than 70 conference papers and journal articles to his name, and just published a book on how to make the gas turbine engine more efficient.

Titled "Ceramic Matrix Composites: Characterization, Analysis, and Applications" and co-authored with his colleague, Dr. Yasser Gawayed, the book details the technical elements needed to engineer ceramic matrix composites (CMC) for aerospace and other applications.

"Yasser and I have worked on CMC programs since the mid-nineties, and in this book we focused on gas turbine engines that power airplanes," says Dr. Ojard, who now lives in Vernon, Connecticut. "As you start to get more powerful engines, you have to increase the temperature and the materials need to survive those higher temperatures. The design community says there's no place else to go to handle high temperatures, so you need a new material. That's where CMCs come in."

CMC advancements, which are improving safety and efficiency

on everything from spacecraft to race cars, could soon save you money, too.

"Airplane technology has always been progressing. The use of gas turbine engines to power airplanes changed the nature of air travel. The current focus in aerospace is improved fuel efficiency," says Dr. Ojard, 56. "This is where ceramic matrix composites can have a huge role in allowing gas turbine engines to operate at higher temperatures, extracting more power with less fuel. As less fuel is used, these savings can be passed on to the passenger."

After getting B.S. and M.S. degrees at Michigan Tech University, Dr. Ojard earned his Ph.D. in Metallurgy from Iowa State University. His career has taken him from Ames, Iowa, and West Palm Beach, Florida, to East Hartford, Connecticut, where he's worked for 28 years with the former United Technologies - Pratt & Whitney, now known as Raytheon Technologies. He's also been an adjunct professor in Material Selection at the University of Connecticut since 2012.

He's never forgotten what got him started, though.

"I've thanked people at Michigan Tech for everything they did for me, and I feel the same way about the Alworth organization," says Dr. Ojard. "I'm very thankful for what their scholarship made possible. I hope students who read this article will want to go into engineering." ■

“ Perseverance is not a long race; it is many short races one after the other. ”

- WALTER ELLIOT, 19th Century Scottish Politician



CURRENT STUDENTS

Sam Ward's perseverance could make the world a cooler place

A favorite pastime of many of us living in this part of the country is to talk about the weather. But Sam Ward is different: he's studying to do something about it!

The 2019 Duluth East grad and UMD sophomore is pursuing a degree in electrical engineering, with a focus on becoming a renewable energies engineer.

"I'm studying to find alternatives for power other than fossil fuels, to help solve the climate crisis," says Sam, now on his second year as an Alworth Scholarship recipient. "I'd like to specialize in solar cells and photovoltaic energy, helping design efficient new products."

Sam says he chose to head down this path based on a combination of his own desires and what teachers saw in him.

"I had an interest in environmental protection, and because I was good at math and physics, my high school teachers kept nudging me toward taking harder, college-level courses," he says.

Those harder courses became a hard reality once Sam got to UMD, though.

"Although I took college-level Calculus I and Spanish in high school, I was not expecting how tough the transition to Calc II



► Sam Ward

and Advanced Spanish would be at UMD," he says. "The pace was triple what it was in high school, and my massive homework load took up almost all of my time. While I had a 4.0 GPA my senior year in high school, I was actually prouder of the 3.3 GPA my first semester at UMD, because it took a lot of hard work to get there."

Perseverance - there's that word again that's so common with our scholarship recipients - got him past those early hurdles. So has not having to worry about paying tuition.

"I'm very thankful that the Alworth folks saw me as worthy of a scholarship," says Sam.

His excellent grades were just part of what led us to offer Sam a scholarship. Another factor is that he has always made time to help others. Sam was honored by Duluth East for doing 200 hours of volunteer service to the community, including tutoring, serving meals at the Damiano Center and more.

He's an Eagle Scout who mentors other area Scouts and is and a member of the Order of the Arrow, the National Honor Society of Boy Scouts of America. He also does a little singing while playing his bass guitar, although not in any bands.

As you'd expect from someone pursuing an electrical engineering degree, Sam's guitar is electric. So is his future. ■



► Emma Greenlee

Mesabi East High grad Emma Greenlee is pursuing a field studying fields

When the Greenlees took their daughter, Emma, on walks around their Aurora neighborhood when she was little, they included some teaching at the same time. Her parents would point out interesting aspects about plants and birds along the route, which spurred a curiosity about nature that Emma has turned into a rewarding field of study.

Actually, she's studying many fields. The 2017 Mesabi East grad is using her Alworth Scholarship to learn about the health, diversity and future of prairielands. It's exactly the kind of science-based research Marshall H. and Nellie Alworth sought to nurture when they established their scholarship fund in 1949.

Emma, who is attending Carleton College, has expanded on her studies by landing three valuable internships that have taken her around the upper Midwest.

At Cedar Creek Ecosystem Science Reserve in East Bethel, Minn., she worked on what's called the BioCON experiment to explore how plant communities respond to environmental changes. She then interned with the Nature Conservancy, moving among prairies in Minnesota, North Dakota and South Dakota, collecting data on plant community composition to share with land managers.

Most recently she interned in Kensington, Minn., with the Echinacea Project, named after a plant that laypeople may recognize as a light purple daisy, but which is actually a coneflower.

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CURRENT STUDENTS

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"We're studying how prairies continue to change and helping scientists predict what they might look like in the future," says Emma. "It's important to see how challenges like climate change and habitat fragmentation are impacting plant life around the world, to learn how we can best care for ecosystems."

Nearing her ecology research degree at Carleton, Emma appreciates how her Alworth Scholarship has made her college experience less stressful.

"I am super thankful for the Alworth Scholarship, because it helped me go to Carleton without having to pay off loans the rest of my life,"

she says. "The scholarship provided me security that has allowed me to focus on my studies."

She'll study ecology in grad school after getting her Carleton diploma in 2021. And after that?

"I love prairies, plants and native grass species, to see how all they all coexist," she says. "They're all over the world, so I might want to do research in the U.S. or I could put my Spanish minor to work in the prairies of Mexico and South America."

Then she adds, "But I really love northern Minnesota." ■

Shelby Bjerke takes distance learning for electrical engineering all the way to Alaska

Bemidji High School graduate Shelby Bjerke had enjoyed her first two years attending the Milwaukee School of Engineering (MSOE), but with the university now offering classes online as a concession to COVID-19, she decided to really put the distance in distance learning during her junior year.

Shelby is now participating in MSOE classes from her laptop computer in Minto, Alaska! With her love of the outdoors and the fact that her older sister recently moved to Minto and had an extra room, Shelby has been able to make lemonade out of coronavirus lemons.

"COVID's been a rough time for many students, but I kind of hit the jackpot," says Shelby. "The only downside is that my 9 a.m. class in Milwaukee is now at 6 a.m. in Alaska."

The wilderness life she's again enjoying may have given Shelby the confidence to pursue an electrical engineering degree in the first place.

"When I was a teenager, I went to the Boundary Waters and fell in love with an outdoor outfitters camp for Girl Scouts," she says. "I've gone back every summer for many years, showing other girls the wilderness. I almost cry when some of them say they'd never seen stars until then."

"Without those wilderness adventures to build my confidence, I probably wouldn't have had the confidence to take engineering in

high school. Girls didn't want to be the only one in class with a lot of guys. It's too bad, because if girls don't take those classes, they won't continue into STEM fields



► Shelby Bjerke sea kayaking next to the Columbia Glacier in Valdez, Alaska.

a career director at Bemidji High noticed Shelby as "one of the only females hanging around the tech department, making robots" and told Shelby she'd be a perfect candidate for an Alworth Scholarship.

"I went for it and I'm grateful every day that you chose me," she says.

She's one of five women who are electrical engineering juniors at MSOE, working alongside over 70 male students.

"But we're all a tightly knit group, hanging out and studying together," she says. "We're like a family. But we don't get that this year with distance learning."

Shelby hopes to pursue a career working in green energy and developing cleaner power systems. When asked what her ideal job would be 10 years from now, she said, "Maybe a company like Tesla that does a lot with alternative power. There are other companies stepping up and doing things like that, too. It would be good to make a product that you and I use, making our lives easier." ■

► How To Apply:

Go online to www.alworthscholarship.org 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.