

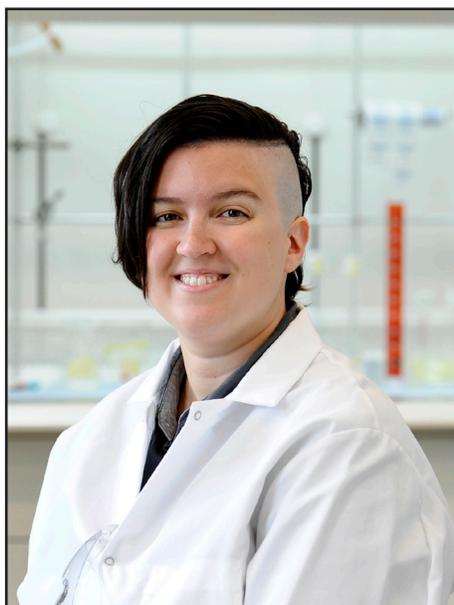


Excellence In Research

First author on peer-reviewed journal articles. Presenter at national conferences. Avid volunteer. It reads like a checklist of an experienced faculty member. It's also the budding resume of Mary Hedrick, a senior majoring in chemistry at NDSU. She's an example of the breadth and quality of research undergraduate students are immersed in at NDSU.

Hedrick started pursuing research opportunities as soon as she arrived on campus. She was a chemistry major, so she joined the lab of Svetlana Kilina, assistant professor of chemistry and biochemistry. There she learned about quantum chemistry calculations, including theories, techniques and modern computational software. Her work resulted in her first paper, with her as first author, published in the *Journal of Physical Chemistry* in 2013. That's a significant accomplishment to publish a paper as the lead researcher. But Hedrick likens it to one of her hobbies, art. She views computational work as a way to become creative. "I see the same beauty in art and the beauty in science," she said.

Hedrick's research applies to solar and fuel cell technology. She worked in Kilina's lab for three years, during which she became a member of the McNair Scholars program and received two awards from an international conference on computational chemistry.



featuring Mary Hedrick

In order to expand her research repertoire for graduate school, she began working with Alan Denton, associate professor of physics. She again published a research paper as first author in the *Journal of Chemical Physics* in 2015. Hedrick also worked with professor David Wells and graduate student Andy Dalman in the Department of Industrial and Manufacturing Engineering. She applied her chemical expertise to their work on materials compositions for fabrication of artificial bone.

"Making switches is OK," Hedrick said. "You may have a set path, but keep your options open. Faculty and staff are vital to the success of the student. If you're on this campus doing research, the next experience tends to present itself."

This article was originally published in NDSU's News Banner and can be found in its entirety at https://www.ndsu.edu/news/banner_stories/maryhedrick/

McNair Scholars 2015-2016

Hashim Adam, Pre-pharmacy
Dr. Yanga Jarajapu, mentor
Brandt Berghuis, Biotechnology
Dr. Andrew Friskop, mentor
Abigail Boateng, Pre-pharmacy
Dr. Jagdish Singh, mentor
Gabriel Branco, Sports Management
Dr. Brad Strand, mentor
Cassandra Coghill, Women & Gender Studies
Dr. Michael Yellowbird, mentor
Georgia Starr Davis, Natural Resource Management
Dr. Kjersten Nelson, mentor
Ruben Flores, Music
Dr. Bradley Benton, mentor
Halley Fritze, Chemistry
Dr. Artem Novozhilov, mentor
Mary Hedrick, Chemistry
Dr. Chad Ulven, mentor
Bradley Hoffmann, Engineering
Dr. Amanda Brooks and Dr. Long Jiang, mentors
Danielle LaFromboise, Psychology
Dr. Clayton Hilmert, mentor
Angel Mfon, Biological Sciences
Dr. Robert Dvorak, mentor
Josephine Osei, Biochemistry
Dr. Carl Dahlen, mentor
Zachary Persson, English
Dr. Verena Theile, mentor
Anna Peterson, Animal Science
Dr. Kimberly Vonnahme, mentor
Mishell Quiridumbay V., Biotechnology
Dr. Ben Balas, mentor
Jazmyne Reinke, English
Dr. Kelli Sassi, mentor
Megan Sennie, Psychology
Dr. Robert Dvorak, mentor
Celena Todora, English Education
Dr. Amy Rupiper Taggart, mentor
Caitlin Wachsmuth, Pre-pharmacy
Dr. Yanga Jarajapu, mentor
Sierra Walker, Chemistry
Dr. John Wilkinson, mentor

Remembering The Challenger

January 28th marked the 30th anniversary of the Challenger explosion this year. North Dakota State University in Fargo, North Dakota, is one of the 14 original universities chosen in 1989 to host a Ronald E. McNair Post baccalaureate Achievement Program. The program was established by Congress, funded by the United States Department of Education and named for astronaut and physicist Dr. Ronald E. McNair (bottom, right). Ron McNair was one of seven crewmembers aboard the Challenger during its fatal flight in 1986.



Grad School Here We Come!!

Brandt Berghuis,
North Dakota State University

Bradley Hoffman,
North Dakota State University

Angel Mfon,
University of Minnesota

Anna Peterson,
University of Minnesota

New Commencement Tradition



The 2015 December Commencement marked the beginning of a tradition for TRIO McNair Program at NDSU. During commencement ceremonies, each graduating scholar will now wear a special gold medal on a red ribbon around the neck. The medallion is meant to recognize McNair scholars for contributing outstanding undergraduate research to their academic field as well as their commitment to pursuing a doctoral degree. Congratulations Scholars!

Megan Sennie (above) was TRIO McNair's first graduating scholar to walk adorned with the new medallion during the December 2015 commencement. The medallion also bears a quote by Ronald E. McNair: "You're eagles! Stretch your wings and fly..."

"Whether or not you reach your goals in life depends entirely on how well you prepare for them and how badly you want them. You're eagles! Stretch your wings and fly to the sky."

- Ronald E. McNair

Alumni News

Jane Loueng (below), a former alumni of NDSU and McNair Scholar, has written a journal article, "Evaluation of Health Literacy Tools for Correct Prescription Understanding" that has now been published in the Journal of American Pharmacists Association.



Former McNair alum, **Matt Baines** (below) was the overall winner of the NDSU Three Minute Thesis Competition. Participants were allotted 180 seconds to present years of research. They had to explain it logically so that lay audiences could understand it easily. Matt Presented his complicated research on the microbiomes of the body. This was quite a task to accomplish in just three minutes!





Scholar Interview

Name: Brandt Berghuis

Major: Crop and Weed Science-Biotechnology

Hometown: Farmington, MN

Mentor: Dr. Markel and Dr. Friskop

Research: Phenotypic and genotypic diversity of *Uromyces appendiclatus* (common bean rust) in North Dakota

“Through McNair research, I was able to make the transition into a new major with confidence...”

I decided to attend NDSU after a track team recruiting visit. I thought the people here were really friendly and knew I would like it. I am a thrower on NDSU’s track and field team. It is my last year and I have enjoyed every bit of it. Being a college athlete was something I always wanted to do growing up and it was a fun experience to have. When I am not participating in track and field, I enjoy fishing. In fact, if I could be any animal, I would be a bear just so I can fish every day.

I decided to become involved with the McNair Scholars Program at NDSU when I found out that it helped students get research experience and there were many McNair students who got into graduate school. I thought of it as an opportunity to learn and improve myself. Through McNair research, I was able to make the transition into a new major with confidence in something I would be passionate about. I initially had a disease problem in my garden at home. I brought samples in to work and isolated them. In my McNair research project I was able to take the samples out of cryopreservation and use them. I found work with pathogens interesting and I got to see how it can directly impact people. The research also helped me decide what I wanted to go to graduate school for.

I was very fortunate, through work and McNair, to have professors that have had a huge impact in my life. I would really enjoy teaching college someday and most importantly reach out and help students like my professors have done for me. For my career work I would like to work in plant pathology research and in 50 years hopefully look back at my life and know I made a difference because the world is a better place. The words of wisdom I have to offer my fellow McNair colleagues and future participants is to make the most of every opportunity and follow your passion. In the words of Robert Louis Stevenson, “Don’t judge each day by the harvest you reap but by the seeds that you plant”.

McNair Scholars

North Dakota State University
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Ceres Hall 331
Fargo, ND 58108-6050

Return Address Requested

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TRIO

McNair Scholars Program
Student Support Service
Upward Bound



Dr. Amy Syvertsen

Amy Syvertsen, PhD, is the Director of Applied Quantitative Research and a Senior Research Scientist at Search Institute. Search Institute is a research-to-practice non profit that aims to

Scholar Spotlight

featuring Dr. Amy Syvertsen

discover what kids need to succeed. Syvertsen has a PhD in Human Development and Family Studies and a MED in Youth and Family Education from Penn State. She received her undergraduate degree in Family and Consumer Science Education from NDSU.

Syvertsen's program of research blends the themes of developmental theory, adolescent civic engagement, and positive youth development. Her research focuses on understanding

the core values and behaviors that promote social responsibility and participatory citizenship in young people. Her work seeks to advance our understanding of the contextual (family, school, community) and developmental underpinnings of thriving in childhood and adolescence.

Dr. Amy Syvertsen will be honored with the McNair Achiever Award during this year's TRIO Day celebration.

#TRIOWorks
