

Anticipation

Summer often provides a change of pace for faculty and students, allowing them time to focus their efforts on research projects, internships, work experiences, catching up with a summer class, or taking much-needed time to reflect and plan for the upcoming academic year. Now, late summer ushers in another semester as students and faculty across the state prepare for their new classes, tackle the next step in research efforts, and reconnect with the campus community.

When a new academic year arrives, there is often a sense of excitement. At the ND EPSCoR State Office, we share this optimism for the coming months and look forward to engaging in more in-person events. This year especially, there is much anticipation about the opportunities the term will offer. Last autumn, faculty, staff, and students once again began under uncertain conditions. Virtual class options and a mix of mitigation strategies (face coverings, physical distancing, and plexiglass partitions) were all components of the new normal for institutions across ND as new COVID variants emerged. We all worked together to create research, work, and learning environments that kept everyone well.

Beginning a new academic year is an exciting time to assess new opportunities for growth and development, and the ND EPSCoR State Office will continue to seek opportunities for collaborative efforts with researchers and students across the entire state. This October, the ND EPSCoR State Office will be hosting a virtual New Faculty Open House. This event will provide new faculty members with information about our RFP process and much more. There will also be time for networking with peers from institutions around the state. Join us on October 13 at 3:00 pm CDT. Registration is available [at this link](#). There are several current funding opportunities available for faculty and students. Visit our [Funding Opportunities for Researchers](#) and [Funding Opportunities for Students](#) pages for details and plan to join us for the open house event.

Over the past year, the ND EPSCoR State Office has been proud to partner with Emerging Digital Academy. Emerging Digital Academy currently offers a 20-week immersive technical training course in which students learn the concepts of coding and software design and how to use cutting-edge software tools to build modern web applications. This past spring, the ND EPSCoR State Office supported two students from Emerging Digital Academy who graduated with full-stack software engineering certificates. You can read more about these students' stories [on page two of this issue](#).

Also, this academic year, it is with great excitement that we continue the work of the CIRCLES Alliance. Formed in 2020 with support from NSF's EPSCoR and INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science) programs, the CIRCLES Alliance will continue to serve students and educators at the kindergarten through undergraduate levels with \$10 million in new funding through the NSF INCLUDES program.

**CIRCLES**
ALLIANCE

You can read more about the CIRCLES Alliance, and this new \$10 million NSF INCLUDES award on [page 8 of this issue](#).

We send you best wishes for a productive and exciting new academic year of opportunity. I hope that you are, and will continue to be, well.

Regards,
Kelly A. Rusch, Ph.D., P.E., BCEE
Executive Director
ND EPSCoR State Office



The ND EPSCoR State Office provides scholarships to students at Emerging Digital Academy

The ND EPSCoR State Office is proud to partner with **Emerging Digital Academy**. The mission of Emerging Digital Academy is to serve its students, the region's technical community, and the state's economy by addressing the growing demand for skilled software developers. Emerging Digital Academy fulfills its mission by teaching its students how to learn new technologies to equip them for today's needs and keep their skills relevant, by hosting relevant free events and workshops within the region, and by using state resources, like those from the ND EPSCoR State Office, to develop a talented technology workforce within ND. In addition to on- and off-site events and workshops, Emerging Digital Academy currently offers a 20-week immersive technical training course in which students learn the concepts of coding and software design and how to use cutting-edge software tools to build modern web applications.

This past spring, the ND EPSCoR State Office provided scholarships to two students at Emerging Digital Academy. These students, **Bryant Nupdal** and **Nick Zahnow**, both graduated with full-stack software engineering certificates. In the certificate program, Nupdal and Zahnow learned HTML, CSS, Javascript, jQuery, Node.js, Express, React, Redux, and Redux-Sagas.

"I think I am most proud of graduating from Emerging Digital Academy. EDA is a lot of work, but I recommend it to anyone looking into web/software development," said Nupdal.

Zahnow is a software developer working for Codelation in Fargo. "I think the biggest accomplishment was building a foundation to build upon in the future. Very few things in this industry stay the same, so the greatest skill is being able to learn technology and adapt to changes, which is definitely something EDA equips graduates with," said Zahnow.

Congratulations to both Nupdal and Zahnow on all of their recent achievements. The ND EPSCoR State Office is proud to have provided scholarships to these promising students.

"I am grateful that Emerging Digital Academy is more than a coding boot camp. EDA taught me how to write a resume that gets noticed, how to prepare for a technical interview, and how to create a LinkedIn profile that works in my favor. EDA introduced me to guest speakers to connect with on extremely interesting

topics and organized a career day for us in our final week of the program. Overall, EDA has helped me grow both personally and professionally, develop new friendships, and has prepared me for the workforce," added Nupdal.

Learn more about our partnership with Emerging Digital Academy [here](#).

ND-ACES partnerships and collaborations feature



ND-ACES Computation, Machine Learning, and Predictive Modeling Pillar researcher **Trung Bao Le** (NDSU, pictured left) recently visited the Medical College of Wisconsin after receiving a Travel Award for ND-ACES CCBSE Faculty Participants. To

underscore the importance of collaborations in the sustainability of the ND-ACES effort, travel seed awards of up to \$3,000 are available to the ND-ACES Center for Cellular Biointerfaces in Science and Engineering (CCBSE) senior personnel to facilitate the development of research-based engagement with potential collaborators.

"The benefit of visiting in person is that you share the experience as a person not just working, but it's an intellectual connection. I benefitted a lot from these connections, and because of these connections, I believe that it helps with creativity when people can know each other," said Le.

Le is collaborating with several researchers at the Medical College of Wisconsin, including Amit Joshi, Dash Ranjan, and Bing Yu. Le and his collaborators are planning to submit a proposal to the National Institute of Health in hopes of finding a better way for drug delivery and ultimately, the treatment of cancer.

The goal of Le's proposed work is to develop a comprehensive model for cancer cells, including the oxygen change process. "The problem is that when the tumor grows, it consumes more oxygen, and therefore, at the core of the tumor the inspiration of oxygen is low. That process can have a lot of implications for many treatments, for example, it creates issues with drug delivery," noted Le.

Additionally, with this project, Le plans to incorporate additional training opportunities for graduate and undergraduate students. We wish Le and his collaborators much luck with their upcoming proposal.

2022 ND EPSCoR State Office STTAR internships continue

The ND EPSCoR State Office is finishing another season of internships through the STTAR program. We are featuring a Q&A series from our participating companies. In this month's issue, we're featuring **Dakota Growers Pasta Company, ComDel Innovation, Moore Engineering Inc., Sitting Bull College, and WCCO Belting**. This year, 12 companies hired students from across North Dakota. Twenty-six students who represent six separate colleges are participating in the 2022 STTAR program as interns – the highest number since 2013.

The STTAR program provides juniors, seniors, and graduate students who are majoring in STEM disciplines a valuable opportunity to apply their academic training and experience in order to address science and technology-based problems faced by ND companies. The internships, which take place over a minimum of eight weeks, are supported by a cost-sharing agreement between the ND EPSCoR State Office and our industry partners.



Q. Tell us about your company.

A. Dakota Growers Pasta Company is a leading manufacturer of Semolina and pasta products for retail, food service, and ingredient markets. The Carrington mill and production facility was started in 1992 by 1,100 durum wheat growers and has continued to grow into a corporation that is now a part of 8th Avenue Food and



Provisions. The facility is now producing 290 million pounds of finished pasta products per year.

Q. What are the benefits of having STTAR interns (to your company and the student)?

A. There are multiple benefits to having STTAR interns as a part of our team. The company benefits from having young ambitious talent that is willing to research, quantify, validate, and help improve our processes. In addition, our continuous improvement culture benefits from having new talent to ask questions and seek solutions. The students (pictured below) benefit from hands-on involvement in processes that provide experience and growth for future success. They also gain knowledge in the



development and implementation of safety, quality, and productivity solutions that improve the workplace standards for our manufacturing staff. This summer, Dakota Growers Pasta Company has three STTAR interns, **Chase Rygg** (NDSCS), **Ian Johnston** (NDSCS), and **Isaac Mimong** (UJ).

Q. During their internship what will the students be working on?

A. Topics vary widely, we like to keep the students involved in continuous improvement projects. Ergonomics, updated technologies, and machine guarding enhancements are focus topics from this year's project list. Our goal is to get each student involved in daily work that provides the learning tools to make them successful in their field of study.

Q. Have you partnered with the ND EPSCoR STTAR program before (if not, how did you hear about it)? What are the benefits of this partnership?

A. Yes, Dakota Growers has participated in the program.



Q. Tell us about your company.

A. ComDel Innovation is a contract manufacturing company that began operations in December 2007 on a

30-acre manufacturing campus in Wahpeton, ND. The site was founded in 1977 as a 3M manufacturing facility and later, Imation, in 1996. Using this history and knowledge base, the company provides integrated services relating to the full life cycle of the product. From design, fabrication of tooling and manufacturing equipment, packaging, and distribution, ComDel provides a complete array of product support and solutions for customers all in one location.

ComDel Innovation brand of the company services medical, commercial, and aerospace customers under ISO standards 13485 and AS9100. Heartland Precision brand provides threading, forming, and zinc plating manufacturing services for agricultural and commercial customers under NADCAP and AS9001 standards.

Q. What are the benefits of having STTAR interns (to your company and the student)?

A. Being able to cost-share through STTAR is hugely impactful for the company. When the students get on-site, they can experience the manufacturing systems that are used to design, define, improve, and analyze products, moving from the theory of the classroom into real-world applications. The other benefit of STTAR is the fresh eyes to look at the operation and find better ways to conduct business based on their studies and research.

For the participants, these intern experiences give students the ability to interact with a large variety of processes, equipment, mentors, customers, and market segments. The opportunity is extremely valuable when the student returns to the classroom and when deciding where they want to focus their future efforts. The networking contacts that the students gain can also be beneficial when applying for potential employment.

Q. During their internship what will the students be working on?

A. Evan Erlandson (NDSU, pictured below)

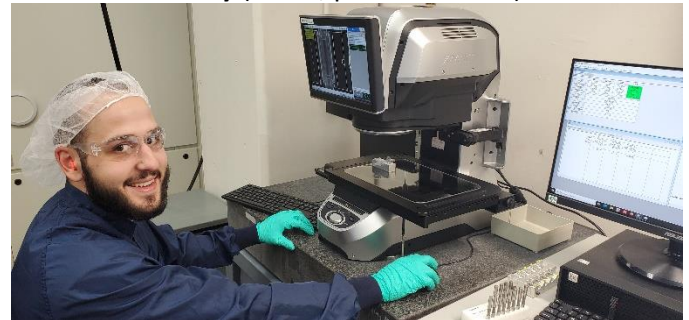


This is Evan's third summer at ComDel Innovation, having previously worked as an operation technician. With this experience, he was able to jump into his summer project with a familiar product. As he was assigned to streamline a plastic injection molding manufacturing line to reduce scrap and increase

production output. Evan was able to see both sides of the process, as an engineer, along with his prior production technician experience, to see how these potential changes impacted the overall performance of the system. This process involved studying assembly machine alarms, labor inputs, and press settings to reduce overall cycle time. Data was collected and analyzed to identify potential areas of improvement. Coordination between departments and coworkers was vital to completing these tasks.

Evan stated, "Practicing these skills has been extremely beneficial personally and is something that I can carry with me in the future. In addition, I had exposure to several of the products which gave me insight into how different perspectives can be beneficial in finding solutions."

Quinton Olsby (NDSU, pictured below)



Quinton has been working on the integration of a new bar forming machine into the production process. This new machine requires validation activities to be performed. This ensures that the machine is capable of operating within established limits, demonstrates the production of acceptable parts, and produces consistent components.

Quinton said, "I have learned the importance of the validation process for product quality, production efficiency, and safety of the operator. I have also gained valuable experience in utilizing SolidWorks, 3D printing, metrology equipment, and statistical analysis software."

Kelsey Baker (UND, pictured below)



In Kelsey's projects, she has used lean manufacturing and 5S principles in things as simple as creating labels for better organization of a packing area

to more complex tasks such as establishing and mapping product flow between stations to eliminate waste. This summer, she has been able to experience injection molding and practice iterative problem solving by making process changes to work out issues within molded components. Kelsey's work focused primarily on medical manufacturing. She has been able to apply much of her course knowledge to her projects and has also gained exposure to new equipment and practices that she did not have access to at school.

Kelsey states, "As an intern, I have also gotten to participate in various meetings with customers as well as reach out to vendors for product information; these skills will be extremely helpful in my upcoming process and plant design courses. After graduation next spring, I am hoping to work in the manufacturing field, specifically with medical devices, so the experiences I have had during my internship with ComDel will certainly be valuable in the future."

Q. Have you partnered with the ND EPSCoR STTAR program before (if not, how did you hear about it)? What are the benefits of this partnership?

A. The STTAR program has been utilized at ComDel for several years. Several of our recent full-time engineering hires have greatly benefitted from participating in the STTAR program or similar intern experiences throughout the region.



Q. Tell us about your company.

A. Moore Engineering is an engineering and land surveying consulting firm. We work in the following disciplines: municipal, water resources, transportation, environmental, water & wastewater, land & site development, GIS, and surveying.

At Moore Engineering, we turn infrastructure problems into an opportunity to improve communities. We have completed more than 20,000 civil and environmental engineering projects in Minnesota and North Dakota, advancing the region's water, municipal, and transportation infrastructure.

We devise quality and sustainable solutions to minimize headaches and alleviate client challenges. This includes everything from funding and permitting to implementation and maintenance. We know how to work with local, state, and federal entities to make a project happen, and understand that the work we do for you today is an investment in your future.

Our expansive portfolio of developing, building, and managing water resource projects in the upper Midwest is proof that the past 55 years of working with water resource districts and local, state, and federal governments have been successful.

Q. What are the benefits of having STTAR interns (to your company and the student)?

A. The goal of Moore Engineering is to provide students with an opportunity to utilize and apply the knowledge they are gaining through their coursework to gain professional, "hands-on" experience while also contributing to the success of the organization. We strive to support students in continuing to build their knowledge and skills each summer so they are in a position to successfully start their engineering careers following graduation.



*STTAR interns at Moore Engineering Inc. work in the field. Moore Engineering Inc. has three STTAR interns this summer, **Connor Wilson** (NDSU), **Jordan Miranda** (NDSU), and **Seth Welder** (NDSU).*

Q. During their internship what will the students be working on?

A. GIS (geographic information system) analyzing and mapping – this is important now as well as for the future for engineering students to learn. GIS mapping of infrastructure will be taught to interns using a Trimble R2 GPS unit and ARC GIS software. Progress measurement will consist of training and also independent data collection, analyzing the data, and producing a final product for a client or for testing purposes.

Interpret plans and specifications – The ability to read and interpret the plans and specifications is imperative for a person entering the engineering world. Training will be provided using new as well as existing projects to teach the basics of understanding for plans

and specs. Progress measurement will consist of weekly meetings to discuss questions and continue to add more depth on an active project. Independent work will also be a measurement of success in teaching how to perform this task. Typical exercises would include reading plans to make sure they make sense and are able to be constructed, checking elevations and grades to make sure we are building to intent, and redlining or marking any plan deviations for a final record set.

Construction Administration – the intent is to teach interns how a project is bid, constructed, and presented for final payment. Hands-on training is the best method for training staff on how to properly administer a project. Daily meetings will be held to teach or reinforce a topic as it relates to a real-time construction project. Progress will be measured by feedback from the intern as well as progress on administrative procedures, including the ability to work independently.

Q. Have you partnered with the ND EPSCoR STTAR program before (if not, how did you hear about it)? What are the benefits of this partnership?

A. This is our first year partnering with ND EPSCoR STTAR. We heard about the program word-of-mouth – the CEO of Moore Holding Company worked in an organization in the past that partnered with ND EPSCoR.



Q. Tell us about your company.

A. Sitting Bull College (SBC) is a Tribal College located in Ft. Yates, ND on the Standing Rock Sioux Reservation (SRSR). In the Sciences, SBC offers an Associate Degree, Bachelor's Degree, and Master's Degree in Environmental Science. The SBC Analytical Laboratory has been certified by USEPA for the analysis of drinking water samples. Students at SBC can receive training in the analysis of water samples using modern analytical instrumentation. Students can learn to analyze up to forty or more analytical parameters of water. They learn to develop a standard curve for these

parameters and how to use quality control measures to ensure high-quality results.

Q. What are the benefits of having STTAR interns (to your company and the student)?

A. The students learn to generate high-quality data and information that is useful to the people in the community. They gain confidence in themselves. They gain skills that make them highly eligible for jobs as laboratory technicians. Labs across the USA are always looking for well-trained technicians.

Q. During their internship what will the students be working on?

A. The students are learning to use modern analytical instrumentation for the analysis of water samples and other environmental samples. They are also learning to develop a standard curve for these parameters. They learn to use quality control and quality assurance in the development of analytical data. Additionally, they learn the basics of running a business.



Kennedy Pleets (SBC) works as a STTAR intern in the lab at SBC.

Q. Have you partnered with the ND EPSCoR STTAR program before (if not, how did you hear about it)? What are the benefits of this partnership?

A. I have not partnered with the ND EPSCoR STTAR program, but I have worked with ND EPSCoR programs in the past. In particular, I worked with the NATURE program. I learned about the STTAR program from an email sent out by ND EPSCoR.



Ohitika Lewis (SBC) is a STTAR intern this summer at Sitting Bull College.



WCCO Belting, Inc.

Q. Tell us about your company.

A. WCCO Belting, a global rubber product manufacturer based in Wahpeton, has been an employer of choice in the area for decades, earning the Prairie Business Magazine 50 Best Places to Work distinction for eight years. The company was recently acquired by the technology company, Continental, to strengthen its conveying solutions business in the agricultural industry. Through this acquisition, opportunities for expanded careers and continued professional growth as an employee abound!

Q. What are the benefits of having STTAR interns (to your company and the student)?

A. The benefit of interning at WCCO Belting is the opportunity to have a high-value learning experience working on real-world projects. Students are side-by-side with not only professionals in their area of study, like product development, but collaborating and communicating with other areas. For WCCO, the benefits of STTAR interns in the additional support they can provide to business-impacting goals and projects.

Q. During their internship what will the students be working on?

A. Our STTAR interns are within our business development team which drives new product development. Students are helping to design new products, create prototypes, test products both internally and in the field, and more. For example, our intern this year is testing new rubber compounds for our products.



Gabriel Lothspeich (NDSU) is a STTAR intern at WCCO Belting this summer.

Q. Have you partnered with the ND EPSCoR STTAR program before (if not, how did you hear about it)? What are the benefits of this partnership?

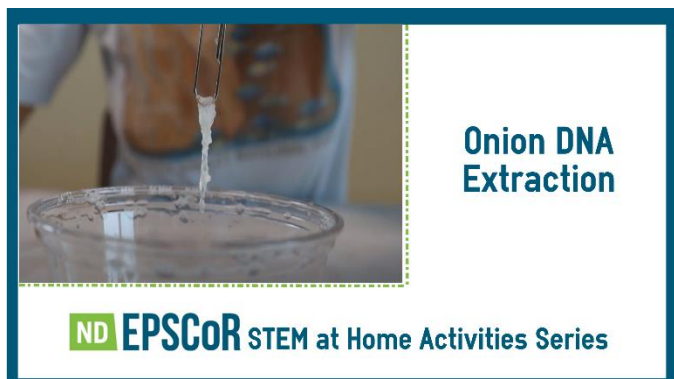
A. Yes, we have partnered with the ND EPSCoR STTAR program before. The WCCO team truly appreciates the ability to mentor students early in their careers, the students' support on projects, and the curiosity they bring to the table.

The ND EPSCoR State Office wishes the 2022 STTAR student interns well as they finish their internships! You can learn more about the STTAR program on our [program webpage](#) or contact the ND EPSCoR STEM Grant Writer & Program Manager, [Josh Wayt](#).

The STEM at Home video series continues

Our STEM at Home series is a video-based learning series that creates fun content centered on projects which incorporate STEM. These simple projects allow younger audiences to use critical thinking skills and potentially spark a lifetime interest in STEM.

Each video in this series is accompanied by a list of simple materials and goes through a step-by-step process for completing the project successfully. We hope to create a fun and easy way for families to engage in STEM projects through this video series. This month, our featured video is Onion DNA Extraction.



Get the complete shopping list for the STEM at Home activity [here](#).

[Subscribe to our YouTube channel](#) and visit our [STEM activities page](#) for shopping lists. You can also see our [STEM Education Portal](#) and [NATURE Sunday Academy](#) pages for more activities and lesson plans that strengthen the STEM pathway for students across ND.

Turtle Mountain Community College implements new equipment

Each year, the ND EPSCoR State Office accepts competitive proposals for equipment that helps advance scientific inquiry and R&D. Preference is given to proposals that: 1) show collaborative use across multiple institutions/colleges/departments; 2) request equipment not currently available on the proposer's campus; and 3) engage a large number of undergraduate and graduate students in research and learning.

Turtle Mountain Community College (TMCC) received an award to procure a carbon flux measurement instrument (pictured right), which was received at TMCC in June 2022. This instrument is designed to provide detailed measurements for carbon and water fluxes at a field scale, as well as detailed weather and soil information important to climatic effects on net ecosystem carbon gains and water losses. TMCC is working with the Tribal Agriculture and Natural Resources Departments to assist them with research



pertaining to environmental quality and the effects of land management on carbon sequestration. The goal is to encourage collaborations among the University of North Dakota, TMCC, the Tribe, and others while providing training and research opportunities for students and faculty.

ND EPSCoR receives funds to work with Indigenous communities on STEM education

The National Science Foundation (NSF) awarded \$10 million to the Cultivating Indigenous Research Communities for Leadership in Education and STEM (CIRCLES) Alliance, a six-state collaborative, to address the under-representation of American Indian and Alaska Native (AI/AN) students in the science, technology, engineering, and math (STEM) disciplines and in the workforce.

The award began on August 15 and the North Dakota EPSCoR State Office will receive \$2.08 million of the total funding.

Formed in 2020 with support from NSF's EPSCoR and INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science) programs, the CIRCLES Alliance is poised with this new funding to serve students and educators at the kindergarten through undergraduate levels.

The Alliance builds on existing partnerships with tribal communities in six EPSCoR jurisdictions in the western half of the U.S. (Idaho, Montana [lead institution for this collaborative research], New Mexico, North Dakota, South Dakota, and Wyoming).

Aaron Thomas, Director of Indigenous Research and STEM Education and Professor of Chemistry at the University of Montana (UM), noted that the goal of the CIRCLES Alliance is encouraging "AI/AN students to identify academically and culturally with being a Native scientist, technician, engineer, or mathematician so that more AI/AN students will enter and persist in STEM-related fields and workforce." Thomas is the lead Principal Investigator of this collaborative effort.

"The CIRCLES Alliance has worked for the past two years to create a strong and mutually respectful and



collaborative environment amongst the six states and between the Alliance and our tribal community partners. While we are just beginning, we are excited to continue work with our tribal community partners on formal and informal activities framed around a holistic experiential and Indigenous-based approach to STEM to encourage more AI/AN students to think about STEM careers,” noted **Kelly A. Rusch**, Executive Director of the ND EPSCoR State Office, Associate Chair and Professor in the Department of Civil, Construction and Environmental Engineering at North Dakota State University (NDSU), and the NSF INCLUDES Principal Investigator for ND EPSCoR and NDSU.

Through the CIRCLES Alliance, the ND EPSCoR State Office in conjunction with **Ryan Summers**, Assistant Professor of Science Education at the University of North Dakota, will work collaboratively to build on strong, existing partnerships with tribal communities and create a network for developing and disseminating STEM educational resources, as well as implementing longitudinal programming, and mentorship and teacher preparation, to support AI/AN student success.

The ND EPSCoR State Office will also serve as the administrative backbone for this six-state alliance.

Ultimately, the project aims to support tribal communities in producing a STEM-ready workforce to meet their communities’ unique economic needs. The ND EPSCoR State Office has long-standing collaborations and programs with the state’s tribal communities. “We are well positioned to use our current NATURE (Nurturing American Tribal Undergraduate Research and Education) programming as a springboard to re-think and dialogue with our tribal community partners on how we engage and encourage AI/AN students to pursue STEM in ways that are grounded in each student’s cultural identity,” said Rusch.

Ultimately, through research and collaboration with tribal communities, the CIRCLES Alliance aims to inform educational institutions and the NSF in AI/AN cultural understanding and humility and to shift approaches toward AI/AN education.

Funding for the award comes from the NSF’s INCLUDES community. Learn more about the [North Dakota CIRCLES effort here](#).

News of note

ND-ACES participants publish

Congratulations to the following ND-ACES faculty and student participants on their recent and upcoming publications:

- *Transfer Learning Pre-training Dataset Effect Analysis for Breast Cancer Imaging*
Lu Liu, Chanaka Sampath Cooray Bulathsinghalage (all NDSU) (Conference Proceedings)
- *A Coarse-Grained Model for the Mechanical Behavior of Na-Montmorillonite Clay*
Sarah Ghazanfari, H. M. Nasrullah Faisal, Kalpana S. Katti, Dinesh R. Katti, and Wenjie Xia (all NDSU). (Langmuir)
- *On the Impacts of Flow on the Migration and Growth of Cancer Cells*
Lahcen Akerkouch, Haneesh Jasuja, Trung Bao Le, Kalpana S. Katti, and Dinesh R. Katti (all NDSU). (ASME Conference Proceedings)
- *Computational Methods for Fluid-Structure Interaction Simulation of Heart Valves in Patient-Specific Heart Anatomies*
Trung Bao Le (NDSU), Mustafa Usta, Cyrus Aidun, Ajit Yoganathan, and Fotis Sotiropoulos. (Fluids)

NASA EPSCoR R3 CAN proposal selected for funding

Congratulations to Omid Beik (NDSU) and the team, whose NASA EPSCoR R3 CAN proposal has been selected for funding. Congratulations!

Hossain joining a discussion panel at the 27th NSF EPSCoR National Conference

Khwaja G. Hossain, Professor of Biology at Mayville State University and a researcher in the ND-ACES Materials Design at Biointerfaces Pillar, has been invited to join a discussion panel at the 27th NSF EPSCoR National Conference which will be held in person in Portland, Maine, on Nov. 14-15. The panel, “Building Research Capacity at PUIs,” will offer short, focused talks to showcase the successes of faculty at smaller colleges who conduct independent research or incorporate research in their classes.

Congratulations ND-ACES summer graduates

Congratulations to the ND-ACES summer 2022 graduates.

Graduate students

- **Krishna Kundu** (NDSU)
- **Sarah Reagen** (UND)
- **Farid Solaymani** (NDSU)

Undergraduate students

- **Kincaid Rowbotham** (UND)
- **Brooke Roeges** (Mayville State University)

Thank you for your contributions to the ND-ACES RII Track-1 cooperative agreement and many congratulations on your achievement!

Events and trainings

September training on online thought leadership

An upcoming training session will explore how developing a professional presence online can help scholars become established as thought leaders in their respective fields while also navigating the challenges of communicating in today's cluttered social media environment. ND-ACES



Communication and Dissemination Lead **Justin Walden** (pictured above, right), Associate Professor of Communication at NDSU, will offer practical tips for growing one's networks on social media and for communicating about science and research in online spaces. **This session is scheduled for September 15 at noon at the Zoom link below.** Attendees will be provided with suggestions on avoiding the common pitfalls that come in developing an online presence, tips for breaking down complex research findings into public-accessible information, and suggestions on how to deliver meaningful messages about their research and teaching to various stakeholders on social media. To participate, visit <https://zoom.us/j/9577792634>.

Additional resources, including supplemental readings, are available on the [Communication & Dissemination Training page on Symposium](#).

New Faculty Virtual Open House

You are invited to the



Virtual Open House

October 13th, 2022
3:00 p.m. CT - 4:00 p.m. CT

The ND EPSCoR State Office would like to extend an invitation to new faculty members to join us for a virtual open house on Thursday, October 13th at 3:00 p.m. CDT.

Here is a [link to a short video with more information about this event](#). We will be sharing information about our RFP process and much more. There will also be time for new faculty members to network with peers from institutions around the state. [Register here](#). Please share with interested new faculty members!

Responsible Conduct of Research (RCR)

RCR training is available upon request to augment initial campus or Collaborative Institutional Training Initiative (CITI) RCR trainings. Please [get in touch with ND EPSCoR](#) to schedule.

Funding opportunities

Funding Opportunities come from three sources:

1. The National Science Foundation (NSF)-funded New Discoveries at the Advanced Interface of Computation, Engineering, and Science (ND-ACES) RII Track-1 cooperative agreement, which consists of two broad components: 1) Center for Cellular Biointerfaces in Science and Engineering (CCBSE), which consists of three research pillars: materials design, cellular systems, and computational approaches and 2) PROMoting Sustainable Partnerships in Education and Research (PROSPER), which consists of four connected project elements: education and workforce development, broadening participation, partnerships and collaborations, and communication and dissemination.
2. ND EPSCoR State Office
3. [EPSCoR and EPSCoR-like federal funding agencies](#), which include: Department of Energy (DOE), National Aeronautics and Space Administration

(NASA), National Institutes of Health (NIH), NSF, U.S. Department of Agriculture (USDA), and Department of Defense (DoD).

Rural Student Teaching Experience (RSTE) Program

The ND EPSCoR National Science Foundation (NSF)-funded RII Track-1 cooperative agreement New Discoveries in the Advanced Interface of Computation, Engineering, and Science (ND-ACES) Rural Student Teaching Experience (RSTE) program provides unique learning experiences for up to two teacher candidates. The goal of the RSTE program is to provide an exceptional learning experience for teacher candidates in a rural school and community while they complete the requirements of their undergraduate programs. For more information, see the [Request for Applications](#) and the [informational flyer](#).

Application Deadline: noon on September 23, 2022

Distributed Research Experiences for Undergraduates (dREU)

The Distributed Research Experience for Undergraduates (dREU) program is designed to strengthen North Dakota's STEM ecosystem by catalyzing bioscience research and career development opportunities for undergraduates. Selected students will conduct science, technology, engineering, and mathematics (STEM) research projects under the supervision and guidance of faculty researchers from the New Discoveries in the Advanced Interface of Computation, Engineering, and Science (ND-ACES) Center for Cellular Biointerfaces in Science and Engineering (CCBSE). Like all ND-ACES programs, dREU is committed to building a diverse pool of engaged students and competitive researchers. Minorities underrepresented in STEM (e.g., women, first-generation college students, persons with disabilities, rural populations) are thus strongly encouraged to apply. For more information, see the [Request for Applications](#).

Application Deadline: Open Until Funds are Exhausted

Graduate Student Cyberinfrastructure Assistantship Program (UND announcement only)

ND EPSCoR's New Discoveries in the Advanced Interface of Computation, Engineering, and Science (ND-ACES) Graduate Student Cyberinfrastructure (CI) Assistantship program is designed to (1) increase student understanding of advanced research computing in hardware and software as it relates to their discipline; (2) provide additional support to faculty in

the Center for Cellular Biointerfaces in Science and Engineering (CCBSE); and (3) provide student/faculty CI training at all ND EPSCoR-participating institutions on potential CI uses/benefits.

Support will be available for one-half (10 hours per week) of a full-time graduate student assistantship in the UND Computational Research Center (CRC). For the ND-ACES supported 10 hours per week, the student must work within the CRC under the direction of the Center's staff. It is anticipated that one (1) Graduate Student CI Assistantship will be awarded at UND. The Dean of the UND Graduate School, the UND NSF RII Track-1 ND-ACES Co-PI, and the CRC Advanced CI Manager will serve as the review panel to evaluate the applications. For more information see the [Request for Applications](#).

Application Deadline: 5:00 pm CDT on August 26, 2022

Undergraduate Research Assistantship (URA) Program

This program gives current junior and senior undergraduate students pursuing a B.S. STEM degree at a four-year institution (or a two-year institution granting B.S. STEM degrees) in North Dakota an opportunity to perform research within the National Science Foundation (NSF)-funded New Discoveries in the Advanced Interface of Computation, Engineering, and Science (ND-ACES) Center for Cellular Biointerfaces in Science and Engineering (CCBSE).

The URA is a six-month award that is renewable for up to one additional year. URA awardees will conduct up to 18 months of research under the direction of a ND-ACES CCBSE researcher. For more information, see the [Request for Applications](#).

Application Deadline: Open until funds are exhausted

Doctoral STEM Teaching Assistantship

The Doctoral STEM Teaching Assistantship is supported by the NSF-funded award New Discoveries in the Advanced Interface of Computation, Engineering, and Science (ND-ACES). This assistantship is designed to strengthen North Dakota's STEM ecosystem by building a diverse pool of effective educators, skilled researchers, and engaged students. More specifically, the assistantship will (a) strengthen doctoral students' experience in undergraduate STEM education, and (b) reduce the instructional workload of ND-ACES faculty at non-research universities, thereby allowing them to devote additional time to research.

The Doctoral STEM Teaching Assistantship is a semester-long teaching placement (during Fall 2022 or

Spring 2023). Eligible candidates must be enrolled in a doctoral STEM program at a North Dakota research university (i.e., North Dakota State University or the University of North Dakota).

For more information, see the [Request for Applications](#).

Spring 2023 Assistantship deadline: October 1st

STEM Research, Education, and Outreach Request for Proposals

The ND EPSCoR State Office's mission is to support efforts of participating institutions of higher education across the state that result in increased STEM research capacity and competitiveness; a stronger STEM pathway that produces our next generation workforce, educators, and researchers; and, an informed citizenry that values the STEM ecosystem and economy.

Thus, the ND EPSCoR State Office is now accepting proposals to fund STEM activities at EPSCoR participating institutions: research universities (RUs; NDSU and UND), master's college/university (MCU; Minot State University), primarily undergraduate institutions (PUIs; Dickinson, Mayville, and Valley City State Universities), and the tribal colleges/universities (TCUs; Cankdeska Cikana Community College, Nueta Hidatsa Sahnish College, Sitting Bull College, Turtle Mountain Community College, and United Tribes Technical College). For details, see the [Request for Proposals](#).

Deadline: Noon, September 30, 2022

ND-ACES: Emerging Areas/Seed Award Proposals Request for Applications

ND EPSCoR seeks to provide emerging areas seed awards of up to \$25,000 in direct costs to researchers from the National Science Foundation (NSF) Established Program to Stimulate Competitive Research (EPSCoR) RII Track-1 New Discoveries in the Advanced Interface of Computation, Engineering, and Science (ND-ACES) participating institutions in areas of emerging high impact and transformative research related to the Center for Cellular Biointerfaces in Science and Engineering (CCBSE). More information can be found on the [CCBSE webpage](#) on the ND EPSCoR website.

Applications must be made by a researcher from Cankdeska Cikana Community College (CCCC), Dickinson State University (DSU), Mayville State University (MaSU), Minot State University (MiSU), Nueta Hidatsa Sahnish College (NHSC), North Dakota State University (NDSU), Sitting Bull College (SBC), Turtle Mountain Community College (TMCC), University of North Dakota (UND), and Valley City State University (VCSU) who is

not currently associated with the 2020-2025 ND-ACES cooperative agreement or who did not receive a 2021 or 2022 ND-ACES emerging seed award. Members of traditionally underrepresented populations in STEM disciplines are especially encouraged to apply. See the [Request For Applications](#) for details.

Deadline: Noon on September 1, 2022

Travel Awards for ND-ACES CCBSE Faculty Participants

ND EPSCoR's New Discoveries in the Advanced Interface of Computation, Engineering, and Science (ND-ACES) RII Track-1 mission is to support scientific efforts that result in increased STEM faculty capacity and competitiveness.

To underscore the importance of collaborations in the sustainability of the ND-ACES effort, travel seed awards of up to \$3,000 are available to ND-ACES Center for Cellular Biointerfaces in Science and Engineering (CCBSE) senior personnel. A collaboration is the extension or development of a research-based engagement (directly aligned with the CCBSE applicant's ND-ACES activities) with a non-CCBSE researcher affiliated with an academic institution or national laboratory. Travel must be within the domestic U.S. (including within ND) and must be completed by 6/15/23. For details, see the [Request for Proposals](#).

Proposal Submission Deadline: when funds are exhausted

Defense Established Programs to Stimulate Competitive Research (DEPSCoR) FOAs

The Department of Defense (DoD) announces the fiscal year 2022 (FY22) Defense Established Program to Stimulate Competitive Research (DEPSCoR). The program is sponsored and managed by the Basic Research Office, Office of the Under Secretary of Defense for Research and Engineering (OUSD [R&E]), awarded by the Air Force Office of Scientific Research (AFOSR), and administered through the Office of Naval Research (ONR). The DoD plans to award FY22 DEPSCoR appropriations through this announcement.

The Research Collaboration ([FOA-AFRL-AFOSR-2022-0006](#)) funding opportunity seeks proposals that advance knowledge in basic science involving bold and ambitious research that may lead to extraordinary outcomes such as disrupting accepted theories and perspectives. Proposals must be submitted by a pair of researchers in DEPSCoR States/Territories (Applicant and Collaborator) aimed at introducing potential applicants to the DoD's unique research challenges and its supportive research ecosystem.

The Capacity Building funding opportunity ([FOA-AFRL-AFOSR-2022-0007](#)) aims to support the strategic objectives of institutions of higher education (IHE) (either individually or in partnership with others) in DEPSCoR States/Territories to achieve basic research excellence in areas of high relevance to the DoD.

Current Closing Date for Applications: Feb 21, 2023

FY 2023 RII Track-1 solicitation (NSF 22-599)

The FY 2023 RII Track-1 solicitation (NSF 22-599) has been released.

<https://beta.nsf.gov/funding/opportunities/epscor-research-infrastructure-improvement-program-track-1-rii-track-1>

Letter of Intent Due Date(s) (required) (due by 5 p.m. submitter's local time):

July 19, 2022

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

August 22, 2022

NOTE: With a current RII Track-1 in progress, North Dakota is not eligible for this solicitation until 2024. However, it remains listed here as a reference.

NSF: EPSCoR Workshop Opportunities

EPSCoR is designed to fulfill NSF's mandate to promote scientific progress nationwide, and NSF EPSCoR continually welcomes proposals for workshops in Solicitation NSF 19-588. These workshops focus on multi-jurisdictional efforts of regional to national importance related to EPSCoR's goals and NSF's mission.

For more information, please see the RFP: [EPSCoR Workshop Opportunities](#)

Acronyms

Participating Institutions:

- Master's College/University (MCU)
 - Minot State – Minot State University
- Primarily Undergraduate Institutions (PUIs)
 - DSU – Dickinson State University
 - Mayville State – Mayville State University
 - VCSU – Valley City State University
- Research Universities (RUs)
 - NDSU – North Dakota State University
 - UND – University of North Dakota
- Tribal Colleges/Universities (TCUs)
 - CCCC – Cankdeska Cikana Community College
 - NHSC – Nueta Hidatsa Sahnish College

- SBC – Sitting Bull College
- TMCC – Turtle Mountain Community College
- UTTC – United Tribes Technical College

Funding:

- National Science Foundation (NSF) EPSCoR Research Infrastructure Improvement (RII) Track-1 Cooperative Agreements
 - ND-ACES – New Discoveries in the Advanced Interface of Computation, Engineering, and Science (NSF OIA #1946202)
- NSF Collaborative Research
 - CIRCLES Alliance – Cultivating Indigenous Research Communities for Leadership in Education and STEM Alliance (NSF OIA #2038196)
- ND EPSCoR State Office
 - STEM programming identified within the newsletter and state match funding for ND-ACES

Acknowledgement

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Stay in touch

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