

NEWSLETTER



Aamlid Family Anatomy Lab Naming Ceremony, page 7

Dean's Message

DR. CHARLENE WOLF-HALL

Our college has had a busy October with events such as The Big Event, Hobo Day and Spooky Science. The month went by quickly and we have made many new friends and connections. We celebrate our alumni and thank many incredibly generous people like the Aamlids.

Our young college is gaining so much momentum and success. You might have heard the big announcement about [Bold & Blue: The Campaign for South Dakota State University](#) and enjoyed the festivities as the Campanile was lit up with an awesome light show.

Our college will be working diligently during this campaign to raise funds to dramatically enhance our people, places and traditions.

We also have passed the midpoint of the semester and the next couple of months will also go quickly. Remember to tap the resources offered to help us all get through the times that can be overwhelming.

Thank you students, faculty, staff, alumni, friends, and supporters for all you do to make this college the best. Enjoy November and the holidays to come.

Celebrating Work Anniversaries

October 2021

Jason Kerkvliet - 11 years

Lauri Sohl - 9 years

Moustafa Khalaf Mohammed - 8 years

Awards & Recognition



Wes Genant was named a semifinalist for the 2021 William Campbell Trophy! This award is college football's premier scholar-athlete award, looking for combined academic success, football performance and exemplary leadership.

Wes graduated in May of 2021 with a B.S. in Biochemistry and is currently playing his last year of eligibility for the Jackrabbits.

Congratulations to **Geography Club** (team # 1) on winning first place in the AAG-GPRM GeoBowl competition! They were competing against teams from other schools such as Kansas State and the University of Nebraska. Read more on page 6.

Team members: **Trevin Dinkel, Thomas White, Reid Dettbarn, Kaila Brudelic, Julie Leidholt, and Elijah Myers**

Introducing Natural Sciences Student Ambassadors

The inaugural group of Natural Sciences student ambassadors was launched in September. These students were selected through a competitive application process to help represent the College at various events.

- **Laney Brown** - Human Biology major, Pre-Med
- **Deirdre Cross** - Biochemistry major, Pre-Physician Assistant
- **Nichole Dial** - Human Biology & Microbiology majors, Pre-Med
- **Sarah Erickson** - Human Biology major, Pre-Med
- **Julie Fischer** - Human Biology major, Pre-Physical Therapy
- **Christina O'Bryan** - Human Biology major, Pre-Chiropractic
- **Jessica Reinhardt** - Human Biology major, Pre-Med
- **Tommi Toft** - Human Biology major, Pre-Med

Julie Fischer has taken on additional coordination responsibilities for the group. She also helped with New Student Orientation over the past two summers, which was challenging in a virtual format. Thank you to Julie for your leadership and hard work!



**SOUTH DAKOTA
STATE UNIVERSITY**
College of Natural Sciences

Media Coverage of CNS



NIH grant helps unravel rare inflammatory genetic disorders: "Damaged cells that no longer function properly voluntarily die to make way for new cells.

The mechanism known as programmed cell death is 'a normal physiological response and is critically important for normal mammalian development,' according to South Dakota State University assistant biology and microbiology professor Jaime Lopez (pictured right). The National Human Genome Institute, for instance, likens the process to 'leaves falling from a tree in the fall.'

However, genetic mutations can alter this important natural process. As a result, cell death goes unchecked leading to chronic, systemic inflammation in animals and humans. Lopez is investigating an enzyme called linear ubiquitin assembly complex, or LUBAC, that plays a central role in regulating cell death. Understanding how fully functional LUBAC blocks the cell death pathway can help scientists learn how to treat patients with rare genetic mutations in LUBAC components that impair the enzyme pathway."



SDSU researchers uncover how cancer evades immune

cells: "A team of South Dakota State University chemistry researchers uncovered how cancer cells utilize a simple sugar residue to disguise themselves from the immune system. What they learned will help scientists develop more effective cancer therapeutics.

'We utilized the lens of organic chemistry to understand how cancer cells evade the immune system,' explained assistant chemistry and biochemistry professor Dr. Rachel Willand-Charnley.

Willand-Charnley, doctoral students Mathias Anim and Albert Armoo (pictured above) and Susan Grabenstein Roh, biochemistry major who received her bachelor's degree in May, analyzed what is known as the Sialic acid-Siglec receptor pathway. They examined the pathway in colon and lung cancer cells using CRISPR-Cas9 gene-edited cell lines to determine how the cancer cells evade detection using sugars on their cell surface. The results are published in the June issue of *Glycobiology*, a peer-reviewed Oxford Academic research journal."

ShanghaiRanking lists SDSU among U.S., world leaders: "South Dakota State University continues to rank among the best in the United States and in the world in the ShanghaiRanking's 2021 Global Ranking of Academic Subjects. SDSU is fourth in the U.S. and 19th in the world in the 2021 rankings, which are based on research productivity in remote sensing.

'Our faculty in the SDSU Geospatial Sciences Center of Excellence continue to produce high-quality research in remote sensing that impacts South Dakota and the world. This is a well-deserved recognition,' said Bob Watrel, who leads the Department of Geography and Geospatial Sciences."



Spooky Science Outreach

"Spooky Science" is an annual fun, family-friendly event at the Washington Pavilion in Sioux Falls, and one that Dr. Larry Browning, Department of Physics, and Dr. Matt Miller, Department of Chemistry & Biochemistry, make an effort to attend every year. Dr. William "Bill" Jensen (pictured right) originally recruited their help before retiring from the Chemistry & Biochemistry Department in 2002. Browning figures he's been going for 24-25 years, and Miller just finished his 21st year. An estimated 1,600 people attended earlier this month!



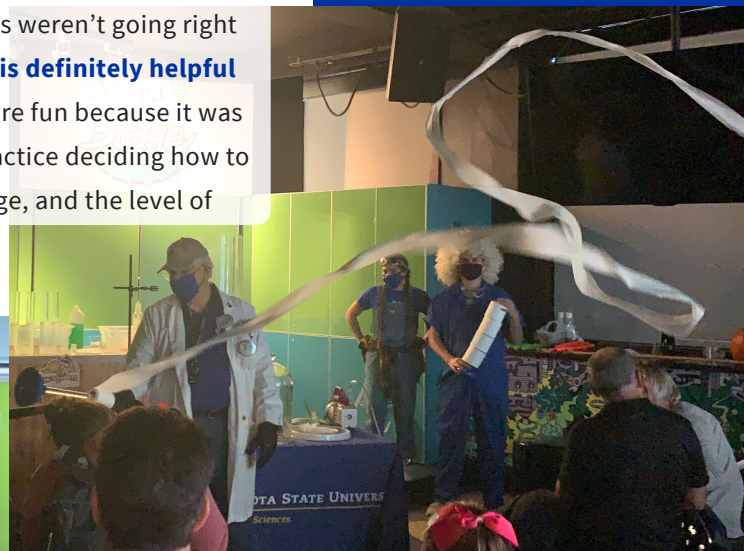
William Jensen

"It is important for young and old to feel science is accessible and fun," Browning said. "For young people it may give them ideas about what career paths to pursue. For older people, like parents, it helps them understand the importance of scientific literacy. Also we hope for all it is fun, interesting, and they leave knowing a little more about the world we live in."

Five future science teachers helped Browning and Miller with the event, which took place on 10/16. Samantha Lebert and Carter Koons (Chemistry Education), plus Kelby Brungardt, Blake Borwege, and Kristin Stoltenberg (Biology Secondary Education) all pitched in to make the day successful.

"My favorite experiment was watching Dr. Miller create a Jack-O-Lantern with acetylene gas," Koons said. **"It was a lot of fun to watch all the kids jump and cheer from the bang and really get them excited about science!"**

"I learned a lot. I learned how to become more comfortable in front of a crowd. I also eventually learned to not panic when things weren't going right and to trouble shoot and fix problems. **This experience is definitely helpful to my future,**" Lebert said. "The demos were almost more fun because it was direct interaction with the participants. It helped me practice deciding how to explain certain demos based on my participants, their age, and the level of interest that they expressed."



The BIG Event Outreach

Drs. Browning and Miller also went to the "BIG event" in Sioux Falls earlier this month on 10/9, along with three CNS student ambassadors: Julie Fischer Laney Brown, and Jessica Reinhardt, all Human Biology majors.

The BIG Event is a hands-on, minds-on science, technology, engineering and math (STEM) event geared towards girls. "BIG" stands for "believe in girls" and the event originated with Girl Scouts —Dakota Horizons in Sioux Falls, SD in 2011. An estimated 250 Girl Scouts attended this year!

"Although there were many amazing learning activities, you could tell SDSU's College of Natural Sciences corner stood out to the girls," Brown said. "The event went from 1-4pm and never once did I have an empty line at my slime station."

"I learned that girls as young as six are curious about college. I had numerous people ask me about my time at SDSU! This curiosity taught me that it is important to represent SDSU as best as you can because **you never know who you are going to impact.**"

-Laney Brown



Reminder: Faculty Senate

The Faculty Senate meets the second and fourth Tuesday of each month. If you have questions or concerns you would like addressed at a meeting, please contact your Natural Sciences Senators:

- Dr. Madhav Nepal - current President of Faculty Senate
- Dr. Ruanbao Zhou
- Dr. Judy Vondruska

Geography Club Road Trip

After taking a year off due to Covid-19, the Geography Club was able to return to the American Association of Geographers annual meeting! SDState is part of the "GPRM" (Great Plains - Rocky Mountain) region. Schools in the region take turns hosting the meetings and this year was held in Lincoln, NE. SDSU is scheduled to take a turn hosting in 2023.

In addition to the GeoBowl competition, meetings include professional development sessions, panels, tours, and poster presentations from undergrads, graduate students, and faculty. Presenters from our own Geography & Geospatial Sciences Department:

- **Julie Leidholt** - Limber Pine: Decline and Survival
- **Dr. Dapeng Li** - A data-driven approach to improving evacuation time estimates for resort communities during wildfires



2022 Geography Convention

Mark your calendars for March 31 - April 1! The 2022 Geography Convention will be a special one, as it's in honor of Dr. Edward Hogan, the Department's founder.



Reminder: Undergraduate Discussion Series

The final Fall 2021 undergraduate discussion series meeting is coming up on **November 16th**. The topic is "The Interdisciplinary Nature of Science - Human Space Travel" and all students are welcome. Please join the group in **Dairy Science 100 at 7pm!** There will also be door prize drawings. Stay tuned for more dates coming up in the Spring 2022 semester.



Aamlid Family Anatomy Lab

Years of fundraising and efforts are finally being realized with the completion of the Aamlid Family Anatomy Lab! The newly renovated space is the only cadaver lab in the state where undergraduate students lead and complete all of the dissections. Thanks to the generosity of the Aamlid family, we now have a state-of-the-art facility for our students to receive invaluable hands-on experience. Click the box below to visit the Foundation's webpage and learn more about the family and this project!

Did you know?

Over the years, 500+ individual donors have given to this project!

“The anatomy department at SDSU has been built by giants, past and present,” said Dr. Brian Aamlid. “And while I know someday that there will be other renovations and expansions and innovations that allow for other names to adorn the anatomy lab....today, and in the years to come, I can’t tell you how incredibly honored and deeply humbled we are that our name will be above that door.”



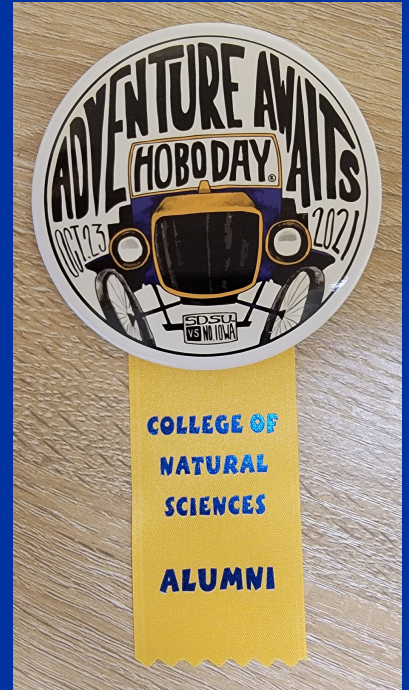
Pictured above: the October 14th naming ceremony. **Left to right:** Dr. Charlene Wolf-Hall (Dean of Natural Sciences), Andy Ellis (Lecturer in Biology & Microbiology), Dr. Dennis Hedge (Provost), Dr. Barry H. Dunn (President), Denise Aamlid, Dr. Brian Aamlid (holding Christian), Dr. Michael C. Wilde (Vice-President, Sanford), Sarah Schweitzer (current Human Biology student), Dr. Scott Pedersen (Professor in Biology & Microbiology), Dr. Greg Heiberger (Associate Dean of Natural Sciences).



Hobo Day Recap

The second annual Natural Sciences Alumni Tent at the Hobo Day parade saw a great turn out thanks to a strong response from our alums! RSVPs included graduation years from 1959 through 2021. At least 47 alumni, plus 74 of their friends and family members, visited the tent. 14+ faculty and staff joined as well, making for a fun and busy morning!

The Geography Club participated in the parade itself with a float. Enjoy photos of their float and of the alumni tent!



Pictured above and right: The Geography Club decorated Dr. Bob Watrel's convertible with the theme "the world awaits". Thanks to the students who decorated and/or walked in the parade: Danny Magee, Elijah Myers, Emma Martin, Jane Arnoldt, Jessica Flanders, Marie McLaughlin, Opi Ouallo, Reid Dettbarn, Sadia Ritu, and Thomas White who drove!

Pictured below: The chairs and tents all set up on Medary Avenue, directly north of the Art Museum.





Above, left to right: Geography alums Roger Oleson '86 and Ron Hayes '90 with Dr. Bob Watrel, Geography & Geospatial Sciences Department Head.

Below: Chemistry alum Eric Sundall '21 and Dr. Matt Miller, Assistant Department Head of Chemistry & Biochemistry.



This event was possible thanks to **many** helping hands! Special thank you to these folks for set up and tear down: Dr. Radhey Kaushik, Dr. Bob Watrel, Dr. Doug Raynie, Dr. Greg Heiberger, Shantell Montuya, Layne Manson, Dr. Charlene Wolf-Hall, the CNS student ambassadors, plus Dr. Adam Hoppe and Dr. Natalie Thix and kids!

Below: Biology alum Amy Leiferman '11 poses with the College banner, which features a photo of her.



Open PRAIRIE Data

What is
"Open PRAIRIE"?

SEPTEMBER 2021

Data across the whole College of Natural Sciences:

- 3,050 downloads at 373 institutions in 107 countries
- 8 new works posted, for a total of 976
- *A Study of African Savanna Vegetation Structure, Patterning, and Change* was the most frequently downloaded piece at 161 downloads. This dissertation is by past PhD student Christoffer R. Axelsson, who was an advisee of Dr. Niall P. Hanan

The **Open Public Research Access Institutional Repository & Information Exchange** tracks publications from within Natural Sciences throughout the year, showing where and when articles were opened all around the world.



Grants Awarded in CNS

SEPTEMBER 2021

Bishnu Karki, PI • Biology & Microbiology • Griffith Foundation • CGriffith Graduate Agricultural Research Award

Jaime Lopez-Mosqueda, PI • Biology & Microbiology • National Institutes of Health • LUBAC-dependant regulation of cell death pathways

Liping Gu, PI, **Nicholas Butzin**, co-PI, **Michael Hildreth**, co-PI • Biology & Microbiology • **Adam Hoppe**, co-PI • Chemistry & Biochemistry • National Science Foundation • MRI: Acquisition of an Octet RED96 BioLayer Interferometry Instrument for Multidisciplinary Molecular Interaction Research and Training