Gianforte School of Computing

MONTANA STATE UNIVERSITY | **NORM ASBJORNSON** College of **ENGINEERING**

From the Director

Greetings! We live in a golden era of computing. As computing becomes ever more pervasive, we can envision a future where anything of value is potentially part of the internet. There are many benefits to the "Internet of Things". One such benefit is health related. Imagine a blood sugar detector embedded in a diabetic person's body and connected to the internet. When glucose levels rise beyond healthy levels, that person can be reminded to take an insulin shot.

To realize the numerous benefits of the Internet of Things, the cohort of computing professionals must better reflect our underlying population. Studies show that diverse teams solve problems better. Yet, computing is not a diverse field. For example, women earned just 18% of computer science degrees last year. To broaden the appeal of computing to underrepresented groups, the culture of computing needs to be improved.

Our organization is undertaking various strategies to improve the culture of computing. As mentioned in our fall newsletter, one such strategy involves remodeling physical space to convey the collaborative, connective, aesthetic nature of computing. We have also improved our introductory classes, developed new degrees (such as a Bachelor of Arts in Computer Science), improved our faculty diversity and helped students build community. What are you doing? Please feel free to share your ideas and best practices!

Happy Computing! *John Paxton*

Golden Helix Recognizes Capstone Projects

Students presented their senior projects to Andreas Scherer, President and CEO of Golden Helix, Inc. Golden Helix awarded prizes to three projects. The prizes were awarded to Angus Tomlinson, *Representing Music with Simplicial Complexes* (1st Prize); Benjamin Rhuman and Isaac Sotelo, *Numo - A Better Diet a Better Life* (2nd Prize); and Miriam Rognlie, Sam Hulme, Gregory Gilbert, and Elizabeth Herman, *Cricket Farming Automation* (3rd Prize).

For information about the capstone projects, please contact Dr. Clemente Izurieta, clemente.izurieta@montana.edu.

2018 GSoC Awards

Outsanding Ph.D. Researcher
Dr. Alan Cleary

Outstanding M.S. Researcher
Mohammed Anani

Outstanding Teaching Assistant
Isaac Griffith

Outstanding Undergraduate Course Assistants
Jachike Madubuko & Marie Morin

Outstanding Faculty Research
Dr. Mike Wittie

Outstanding Faculty Service
Hunter Lloyd

Professor of the Year
Dr. Clemente Izurieta

Around the GSoC

> Courtney Linder, graduating senior, received several honors this year including a Student of Achievement Award from the MSU Women's Center. She was also recognized as one of the top seniors at MSU, receiving an Award for Excellence from the Alumni Association/Chamber of Commerce. Congratulations Courtney!

> CS majors Payton Harrison, Zach Schallenberger, Zach Taylor and business major Joaquin Monterrosa competed in the John Ruffato Business Start-Up Challenge and received funding to develop a socially conscious, environmentally responsible mobile app named *Freats* (for Free Eats.) Congratulations!

> The College of Engineering was recently re-named the Norm Asbjornson College of Engineering (NACOE) in honor of the mechanical engineering alum.

> Dr. John Paxton was recently recognized with the NACOE Excellence in Advancing Diversity Award. Congratulations for a well-deserved award!

> Thank you to Graphic Design major, Matty Vukonich, for re-designing the GSoC Newsletter!

Who's Who in the GSoC

Dr. Mary Ann Cummings is the GSoC's newest faculty member, joining us after a career with the Naval Surface Warfare Center Dahlgren in King George, Virginia. Originally from Virginia Beach, she obtained a B.S. in Computer Science and a B.S. in Math from James Madison University. She received an M.S. in Computer Science and Ph.D. in Software Engineering from the Naval Postgraduate School in Monterrey, California.

Dr. Cummings primary role at the GSoC is teaching. This Spring she enjoyed mentoring and teaching Computer Science Theory, Programming in C, and Social and Ethical Issues in Computer Science. In addition, she is a new advisor for the MSU Association for Women in Computing student chapter. She is also interested in the research that her team in Virginia is developing, a patented Modeling and Simulation Framework for simulating System of Systems.

She is excited to share her knowledge with students, but she is also excited about the advances in machine learning, modeling and simulation, their applications, and what it will mean for the future. Her advice to students? "Don't wait 'til the last minute to do your homework! Ask your professors questions."

Dr. Cummings and her husband, John, are in the process of finding their dream home in the woods. She loves to quilt, is learning to cross country ski and fly fish. They also won the lottery to float the Smith River this summer!

Bridger Robotics Team Travels to Florida

The MSU Bridger Robotics team will travel to Kennedy Space Center, Florida, to participate in the annual NASA Robotics Mining Competition. More than 50 teams from the United States and Puerto Rico will compete May 14-18, 2018. The challenge is to mine icy regolith (gravel) in order to provide oxygen, water and fuel for future colonists on Mars.

Follow CS students, Kyle Melton, Carl Fee, Angus Tomlinson, and their MSU engineering teammates on Facebook and watch the competition on the NASA competition website, https://www.nasa.gov/offices/education/centers/kennedy/technology/nasarmc.html.

Spring Break Road Trip 2018

Twelve computer science students participated in the GSoC's annual Spring Break Road Trip. This year the students, led by Dr. Paxton, traveled to Portland, Oregon, where they visited Open Sesame, Salesforce, Fiserv, Intel, Nike and eBay. Students met and networked with MSU alumni at each of the companies.

The trip has become a sought-after alternative Spring Break road trip for CS students interested in learning about career opportunities available after graduation. They also enjoyed visiting Pittock Mansion and VooDoo Donuts!

Demand Generation Update

> **Joy and Beauty of Data**
> We are pleased to offer teacher training for the Joy and Beauty of Data (JBD) this summer. The course is intended for grade 7-12 teachers who want to expand their ability to incorporate computational ideas in the classroom. The course will be offered July 23-27. Stipends are available for Montana teachers.
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> Please contact Diana Paterson, (406) 994-5679 or dianap@montana.edu, for more information.

> **K-12 Outreach Website**
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> The GSoC's K-12 outreach website will be updated this summer and will include an interactive forum for Montana teachers. The goal of the new website is to provide teachers and community members in Montana with links to summer camps, professional development opportunities, and other K-12 school programs.

> **Thank You Industry Affiliates!**
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> The GSoC appreciates the support provided by our Industry Affiliates!
>
> Premier Partners:
> **Micron and Oracle**
> Partners:
> **Golden Helix, onX and Workiva**

Meet our Students!

Brittany Couts

Hometown: Puyallup, Washington
High School: Emerald Ridge High School
Year at MSU: Sophomore
"Why MSU?" A woman I met at a doctor's appointment told me about MSU and after looking it up, I decided to go to MSU.
"Why CS?" I chose to major in computer science after being introduced to coding in 9th grade. I also took a game design and CS class in high school and loved them.
"Advice for future students?" Get help from the GSoC Student Success Tutoring Center. Always ask questions.
"Future plans?" To graduate.
"If Brittany could time travel?" I would go into the future to see advancements we made throughout time.

Michael Pollard

Hometown: Whitefish, Montana
High School: Whitefish High School
Year at MSU: Junior
"Why MSU?" I really liked the focus on engineering and the access to so many outdoor activities.
"Why CS?" I am really interested in helping build the technology of the future.
"Advice for future students?" Don't be afraid to ask for help, all of the faculty members want you to succeed.
"Future plans?" I plan to work for a tech company in a large city for a while before going off on my own to create technology that betters society.
"Favorite Pizza?" Anything with an abundance of pineapple on it.