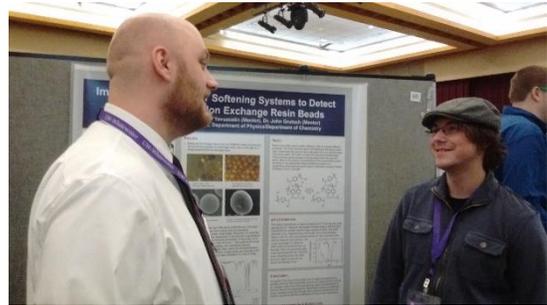


2019 Spring Undergraduate Research Day

Here are all participating Physics students and a description of their research:

- Dakota (Physics) and Clayton (Chemistry) (mentor: Dr. Yavuzcetin, Physics) studied resin beads inside water softeners, developing a sensor to show when resin beads should be replaced rather than waiting for the softener to fail and need to be completely replaced.
- Isaiah (Physics) (mentor: Dr. Nawash, Physics) investigated coating medical implants with an anti-bacterial substance using atmospheric plasma.



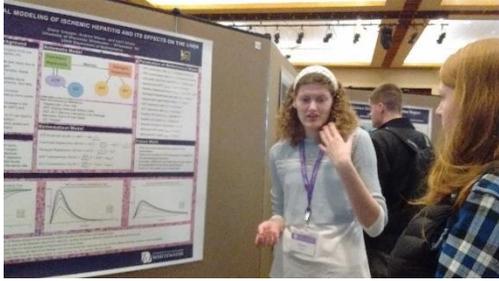
- Braeden (Physics) (mentor: Dr. Tchernookov, Physics) worked on developing a program that senses temperature in multiple locations in a room that can shut down equipment if it is overheating and alert someone by email.

- Aidan (Math) (mentor: Dr. Sahyun, Physics) told about the process for designing and 3D printing objects to help visually impaired

students to understand physics and math concepts.

- In Spring 2018, Geology professor Dr. Bhattacharyya and Physics professor, Dr. Yavuzcetin led a travel study course to Iceland. Four research posters were related to that trip:
 - Brian (Physics) and Joel (Physics) looked at ground hot spots, geysers and waterfalls to learn about natural and renewable energy in Iceland.
 - Michael and Rachael (Geography) analyzed water and sediment to understand the effect of volcanoes, glacier ice-melt and geothermal activity on ground water.
 - Ryan and Lucas (both Geology/Geography) studied the sand of black beaches to understand lava and volcanic rock and how it became grains of black sand.
 - Kirsten (Environmental Sci) studied geysers.





- Claire (Physics/Math) and Andrew (MAGD/Math) developed mathematical equations and models to help diagnose and treat ischemic hepatitis.
- Ryan (Physics/Math) (mentor: Dr. Chen, Math) studied Cluster Algebras, a new kind of equation first proposed in 2000.
- Christian (Psychology) (mentors: Dr.

Waraczynski, Psych, Dr. Yavuzcetin, Physics, Dr. Tchernookov, Physics and Dr. Zamzow, UW-Rock County) tested and observed responses of rats to neural stimuli.

- Brianna (Biology/Psychology) (mentor: Dr. Yavuzcetin, Physics) worked on creating a prosthetic hand that uses surface-generated myoelectric signals that will provide more range of operations at a lower cost.
- Ian (Biology) (mentors: Dr. Cormier, Bio and Dr. Yavuzcetin, Physics) identified Amyloid Fibrils in bovine sperm that may be related to understanding the transmission of HIV.