

2022 Spring Science Research Symposium
Gustavus Adolphus College, May 6th, 2022

Session A: Oral Presentations, Beck Hall 101

4:00 pm	A Strategy for Assessing Peak Purity of Pharmaceutical Peptides in Reversed-Phase Chromatography Methods Using 2D-LC-MS Maria Sylvester and Dwight Stoll Advisor: Dwight Stoll, Chemistry
4:15 pm	Development and Application of a Web-Based Simulator for Multi-Dimensional Liquid Chromatography Thomas Lauer , Caden Gunnarson, Tyler Brau, and Dwight Stoll Advisor: Dwight Stoll, Chemistry
4:30 pm	Characterization of proteases involved in neurodegeneration Kimberly Hareland and Tessa Bierbaum Advisor: Brooke Shields, Biology
4:45 pm (30 minutes)	The Effect of Wet and Dry Cycles on the Export of Dissolved Organic Carbon from an Ombrotrophic Peatland Collin Carlson Advisor: Jeff Jeremiason, Chemistry and Environmental Studies
5:15 pm (30 minutes)	Effect of American Bison Grazing on Species Richness, Above Ground Biomass, and Plant Community Composition of a Native Oak Savanna Ecosystem Lila Beck Advisor: Jon Grinnell, Biology

Session B: Oral Presentations, Beck Hall 111

4:00 pm	Investigating Student Participation and Performance in Calculus I Courses that Utilize Standards-Based Grading Rachel Erickson , Ha Le, Kaylee Vick, and Jillian Downey Advisor: Jillian Downey, Mathematics, Computer Science, and Statistics
4:15 pm	Utilizing Pattern Mining and Classification Algorithms to Identify Risk for Anxiety and Depression in the LGBTQ+ Community During the COVID-19 Pandemic Josephine Bierbaum , Melissa Lynn, and Louis Yu Advisor: Melissa Lynn, Mathematics, Computer Science, and Statistics
4:30 pm	Modeling Drought Response in St. Croix State Forest Andrew Dooley Advisor: Laura Triplett, Geology and Environmental Studies

4:45 pm	Characterization of Prenatal Zika Virus Exposure in Rhesus Macaques Via Ultrasonography Jessica Schwartz , Rachel Spanton, Elaina Razo, Ann Mitzey, Chelsea Crooks, Dawn Dudley, Jens Eickhoff, Kathleen Antony, Saverio Capuano III, Karla Auderau, Matthew Aliota, Thomas Friedrich, David H. O'Connor, Thaddeus Golos, and Emma L. Mohr Advisor: Amanda Nienow, Chemistry
5:00 pm	Comparison of leucosome networks in migmatitic orthogneiss and paragneiss from the Pioneer Mountains, Idaho Hannah Schroeder , Rory McFadden, and Cora Hentges Advisor: Rory McFadden, Geology and Environmental Studies
5:15 pm	Effects of Viscoelasticity on the Oscillatory Behavior of a Two-link Filament Model Sophia Nelson Advisor: Jeff Ford, Mathematics, Computer Science, and Statistics

Session C: Oral Presentations, Beck Hall 119

4:00 pm	Analyzing Carbonate Associate Sulfates in Ancient Carbonates Erin Fisher Advisor: Julie Bartley, Geology and Environmental Studies
4:15 pm	Long-term Water Quality Monitoring in Seven Mile Creek Watershed Luke Dragseth , Elizabeth Lawrence, CJ Miller, and Laura Triplett Advisor: Laura Triplett, Geology and Environmental Studies
4:30 pm	Effect of Buffer pH and Aging on Retention in High Performance Liquid Chromatography Carter Henning , Trevor Kempen, Tina Dahlseid, and Dwight Stoll Advisor: Dwight Stoll, Chemistry
4:45 pm	Pressure Induced Retention Changes Affect the Accuracy of Retention Models in HPLC Trevor Kempen and Dwight Stoll Advisor: Dwight Stoll, Chemistry
5:00 pm	Effect of Analyte Mixture Composition on Observed Retention Factors in Reversed-Phase Liquid Chromatography Haley Jostes , Ryan Schimek, Tina Dahlseid, Bob Pirok, and Dwight Stoll Advisor: Dwight Stoll, Chemistry