

**2019 Spring Research Symposium
Gustavus Adolphus College, May 3, 2019**

Session A: Oral Presentations, Olin Hall 103

1:30 pm	<p>Dopant Concentration Dependence of Crystal Structure Stability and Optical Properties of Luminescent $\text{Ln}_x\text{Y}_{x-1}\text{VO}_4$ (Ln=Nd, Sm)</p> <p>Michaela Zachman and Ian Hill Advisor: Ian Hill, Chemistry</p>
1:45 pm	<p>Laboratory Analysis of Rock Sample Suites from a Mars Rover Simulation, Green River Formation, Utah</p> <p>Madison Adams, Julie Bartley, R. Aileen Yingst, Rebecca M. Williams, Linda C. Kah, Michael Lotto, and Michelle E. Minitti Advisor: Julie Bartley, Geology</p>
2:00 pm	<p>Low Frequency Sound Waves Effect on Pain Perception Generated by the Cold Pressor Task</p> <p>Hannah Nolte Advisor: Mark Kruger, Psychological Science</p>
2:15 pm	<p>Qualitative and Quantitative Cyclic Voltammetry in Upper Division Chemistry Teaching Labs</p> <p>Rachel Lund and Matthew Venzke Advisor: Brian O'Brien, Chemistry</p>
2:30 pm	<p>Lamina Structure as an Indicator of Stromatolite Biogenicity</p> <p>Thais Altenberg-Vaz Advisor: Julie Bartley, Geology</p>
2:45 pm	<p>Effect of Rapid Cold-Hardening on Respiration Rates of Mitochondria Isolated from <i>Sarcophaga Bullata</i></p> <p>Alyssa Welle Advisor: Yuta Kawarasaki, Biology</p>
3:15 pm	<p>Estimating Vigor of <i>Echinacea Angustifolia</i> Relative to its Non-Native Congener <i>E. pallida</i> and Their Hybrids in a Fragmented Prairie Habitat</p> <p>Riley Thoen, Stuart Wagenius, Sanjive Qazi, and Pamela Kittelson Advisor: Pamela Kittelson, Biology</p>

Session B: Oral Presentations, Olin Hall 220

1:30 pm	Subglacial Mineral Erosion Rates from the Little Ice Age to Present for College Glacier Charlotte Cowdery Advisor: Laura Triplett, Geology
1:45 pm	Predicting Pitch Type in MLB Avery Wood Advisor: Laura Boehm Vock, Mathematics, Computer Science, and Statistics
2:00 pm	Microstructural and Rheologic Analysis of the Wildhorse Detachment Fault Zone in the Pioneer Mountains, ID Alex Senjem Advisor: Rory McFadden, Geology
2:15 pm	The Influence of Landslides on Ravine Valley Morphology in Nicollet and Sibley Counties Emily Fischer Advisor: Laura Triplett, Geology
2:30 pm	Uncertainties in Glacier Geodetic Volumetric Analysis on Volcan Chimborazo, Ecuador Hanna Albers Advisor: Jeff LaFrenierre, Geography
2:45 pm	Quantifying Glacier Volume Change using an Unmanned Aerial Systems (UAS)-Derived Imagery and TanDEM-X Data on Volcán Cayambe, Ecuador. Chloe Shaw, Hanna Albers, and Jeff LaFrenierre Advisor: Jeff LaFrenierre, Geography
3:00 pm	Tomographic Reconstruction of 2D Ultrasound Projections Ezekiel Haugen Advisor: Thomas Huber, Physics
3:15 pm	Instability and Complexity of Polycyclic Musk Galaxolide Amy Crawford, Devin Makey, David Harmes, and Kristine H. Warmer, and Dwight Stoll Advisor: Dwight Stoll, Chemistry