

Undergraduate Research & Creative Activity Showcase

*A celebration of undergraduate
scholarship from various disciplines*

Friday October 2, 2026

4:00 – 6:15 p.m.

Hemmingson Ballroom

Session I: 4 - 5 pm

Session II: 5:15 - 6:15 pm

GONZAGA
UNIVERSITY

| Center for Undergraduate
Research & Creative Inquiry

Welcome to the **23rd Annual Undergraduate Research & Creative Activity Showcase**, hosted by Gonzaga's ***Center for Undergraduate Research & Creative Inquiry (CURCI)***.

CURCI was founded in 2016 in the College of Arts and Sciences. In 2021, the Center expanded to serve and support all undergraduate students across the entire university in a wide range of disciplines. Our mission is to **facilitate and encourage undergraduate research and creative activities at Gonzaga University**. *This poster session began as an event for the natural sciences and has grown in both size and breadth over the last 23 years. We are delighted that you were able to join us!*

Featured Gonzaga Research Programs:

Morris Fellowship

McKinstry Fellowship

UW-GU Summer Biomedical

Gonzaga Science Research Program

GRO-MECS

Session I, 4:00 - 5:00 pm

STEM (Biology, Biochemistry, Chemistry, Engineering, Environmental Science, Mathematics, and Physics); Health Sciences, Visual Arts

1. **Gavin Kim**, "*Microfluidic Chips for the Measurement of Red Blood Cell Deformability*" mentored by Dr. Hongxia Fu, University of Washington
2. **Caitlin Kuo, Dominic Rehberger**, "*Aluminum Thermo-Mechanical Processing*" mentored by Dr. Gary Weber
3. **James Grout, (he/him), Arisa Cunningham**, "*Objective Sympathetic Neural State Monitoring Via Soft, Wireless Bioelectronics*" mentored by Dr. Nathan Zavanelli
4. **Jordan Baumgartner, Max Knight, Andrew Metcalf**, "*Printed Medical Patches*" mentored by Dr. Nathan Zavanelli
5. **Irena Langer, Mally Panek, Ada Greve**, "*Understanding Nuclear Structure Through Nuclear Reactions*" mentored by Dr. Adam Fritsch
6. **Estefan Flores**, "*Showcasing the Zeeman Effect*" mentored by Dr. Nicole Moore
7. **Christian Schumacher, (he/him), Nathaniel Rolland**, "*Continual Progress Toward Modeling Tsunamis: A Demonstration of the SAFE Method*" mentored by Dr. Nicole Moore
8. **Cooper Loomis**, "*Construction of an Aerosol Optical Tweezers Assembly to Explore Properties of Individual Sea Spray Particles*" mentored by Dr. Tim Guasco
9. **Blake Unger**, "*Mapping Receptive Fields from Local Field Potentials in Macaque Visual Cortex*" mentored by Dr. Anita Pasupathy, University of Washington
10. **Thomas Dukes**, "*Fractionated Stage-tips Double Phosphopeptide Counts*" mentored by Dr. Catherine Snizek, Dr. Devin Schweppe, University of Washington

11. **Marlee Hall, Emma Hedberg**, *“Investigating Sequence Selectivity of DNA Binding Bis-Pyrazolyl pyridine Derivatives”* mentored by Dr. Shannen Cravens
12. **Ishaan Dave**, *“Synthesis of Large Pore Imine Linked Two-Dimensional Covalent Organic Frameworks”* mentored by Dr. Ronald Smaldone, Chamila Bandara, University of Texas at Dallas
13. **Sean Brender**, *“Investigating Small Molecule RNA Interactions in the Pursuit of RNA Therapeutics”* mentored by Dr. Lydia Pazienza
14. **Greta Henning, (she/her)**, *“Investigating Nonenzymatic Primer Extension Rates with Metal Complexes”* mentored by Dr. Lydia Pazienza
15. **Isaac Lyon, Lou De Jong, Logan Trautman**, *“Exploring the past and present of BcHMGR”* mentored by Dr. Jeff Watson
16. **Henry Gray, (he/him)**, *“Pyridine-bis-benzimidazoles: synthesis and characterization of DNA binding analogs”* mentored by Dr. Wilson D. Bailey
17. **Kaitlyn Comer**, *“Host-Guest Photochemistry Using Cucurbit[8]uril”* mentored by Dr. Masaomi Matsumoto
18. **Jessica Jenkins, (she/her)** *“Investigation of subsurface hydrologic connections in wetland ponds through geochemical characterization”* mentored by Dr. Madeleine Mathews
19. **Eli Zerba, Aidan Gosselin**, *“Investigation of subsurface hydrologic connections in wetland ponds through geochemical characterization”* mentored by Dr. Madeleine Mathews
20. **Rylee Coney, Olivia Hansen**, *“Is the Tea Bag Index assay inhibiting the microbes it measures?”* mentored by Dr. Nigel D'Souza
21. **Skylar Markley, (she/her), Amy Howlett**, *“Applying *S. cerevisiae* models to measure function of human pharmacogene variants”* mentored by Dr. Renee Geck

22. **Kaiya Veasey, (she/her)**, *“Examining caffeine effects on growth of *S. cerevisiae* natural isolates from coffee and cacao fermentations”* mentored by Dr. Renee Geck
23. **Lenorah Thornton, Katie Manson**, *“Determining molecular effects of chalcones using experimental evolution”* mentored by Dr. Renee Geck
24. **Job Astudillo-Gonzalez, Grant Barnes**, *“From Tank to Lake: Tracking *Aeromonas* and the Microbiome of Classroom-Raised Trout”* mentored by Dr. Christy Andrade
25. **Madeline L'Engle, Samantha Riggleman**, *“Phishing for Phage in the Little Spokane: Determining Host Range of Environmental *Aeromonas* Bacteriophages”* mentored by Dr. Christy Andrade
26. **Jonathan Johansen, Emily Pence, Ethan Swatzell**, *“Comparing Canine and Equine Citizen Science Tick Surveillance Approaches in Eastern Washington”* mentored by Dr. Christy Andrade
27. **Caren Miranda, (she/her)**, *“Defining the role of immune-lipid crosstalk in neurodegenerative diseases”* mentored by Dr. Autumn York, University of Washington
28. **Ava Glenn**, *“Using novel fluorescent probes to measure mitochondrial protein trafficking”* mentored by Dr. Kristen Skruber
29. **Raquel Villasenor Garcia, Jordan Sion**, *“Amoeboid Motility Across the Eukaryotic Tree of Life”* mentored by Dr. Kristen Skruber
30. **Sierra Johnson, (she/her)**, *“Building a Custom Inverted Light Interference Contrast Microscope for Amoeboid Motility”* mentored by Dr. Kristen Skruber
31. **Kristiana Da Jose, (she/her), Bailey Dexter**, *“Comparing the Provisioning Behaviors and Interaction Outcomes of the Female *Anthidium manicatum* with its Interactions with Mates”* mentored by Dr. Gary Chang

32. **Louis Hagar**, *"Incorporating DNA sequencing into 105L and 207L lab courses"* mentored by Dr. Joseph Haydock
33. **Valentina Sanchez Prieto, Gabby Mai, Yangbin Lu, Owen Hill, Isabella Whitehead**, *"Restoring Native Plant Communities Through Plant-Microbe Interactions and Soil Amendments"* mentored by Dr. Julie Beckstead
34. **Xander Assad**, *"Gonzaga pollinator displacement with presence of *Anthidium manicatum*"* mentored by Dr. Gary Chang
35. **Ashlee Fiorito, Nola Day**, *"Combined Effects of Heat and Predator Cues on Mayfly Nymphs"* mentored by Dr. Betsy Bancroft
36. **Poe Eaindray Kyaw, (she/her), Ashlee Fiorito, Aristin Coones**, *"Effects of Temperature and Intraspecific Competition Gradients on Pacific chorus frog (*Pseudacris regilla*) larvae"* mentored by Dr. Betsy Bancroft
37. **William Tolson**, *"Genetic Risk Meets Social Resilience: Effects of Group Housing on Ethanol Intake Following Traumatic Stress"* mentored by Dr. Kolter Grigsby, Washington State University - Spokane
38. **Juliette Aguilar-Gomez, (she/her/hers), Sloane Wehrman**, *"Understanding Homelessness in Spokane: A Trauma Informed Study"* mentored by Dr. Sarah Bliss Matousek
39. **SaraJane Fraunfelder, Owen Jackson**, *"Endosymbiont Impacts on Tick Behavior"* mentored by Dr. Hugh Lefcort

Visual Artist

- A. **Matthew Hein**, *"The Synthesis of Music and Memory"*
mentored by Prof. Jennifer Seo, M.F.A.

Session II, 5:15 pm - 6:15 pm

STEM (Biology, Biochemistry, Chemistry, Computer Science, Engineering, Environmental Science, and Mathematics); Education, Health Sciences, Humanities, Social Science, & Visual Arts

1. **Maura West, David Walz**, *“Mechanobiology on Epithelial Ovarian Cancer Cells”* mentored by Dr. Kerry Lane
2. **Mia Francis, Noah Rozema**, *“Hydrodynamic Thrust Bearing Test Rig”* mentored by Dr. Anbara Lutfullaeva
3. **Andrew Morton**, *“Error Mitigation for Quantum Chemistry on Quantum Computers”* mentored by Dr. Gergely Gidofalvi
4. **Charles Bennington, (he/him)**, *“Raw Audio Versus Spectrogram Advancing Emotion Recognition from Speech”* mentored by Dr. Sophina Luitel
5. **Thomas Schuff, (he/him), Charles Rovner**, *“Effect of beaver dam analog restoration on macroinvertebrate communities in a degraded Eastern Washington stream”* mentored by Dr. Betsy Bancroft
6. **Tucker Holmes**, *“Seasonal effects on the dynamics between phosphorus and suspended solids during storm events”* mentored by Dr. Madeleine Mathews
7. **Sela Nogales, Cora Derbin**, *“Is cannibalism in damselfly nymphs (*Lestes congener*) affected by body size and elevated temperature?”* mentored by Dr. Betsy Bancroft
8. **Sara Weaver, (she/her)**, *“Effects of Elevated and Extreme Temperatures on Freshwater Zooplankton Assemblages”* mentored by Dr. Betsy Bancroft
13. **Owen Gagne, (he/him), Vincenzo Ardivino** *“Predator-mediated responses of salamanders under thermal stress”* mentored by Dr. Betsy Bancroft

14. **Marcus Brotsky, Jeffrey Chun**, *“Are the introduced wool-carder bees affecting other pollinators on campus.”* mentored by Dr. Gary Chang
15. **Brad Vega**, *“Can the Structure of Sawfish Rostral Teeth Be Used to Understand Sawfish Age and Growth?”* mentored by Dr. Jens Hegg
16. **Haley Novotny**, *“Sex-Based Life History Differences of Rainbow Trout in a Post-Eruption Volcanic Landscape”* mentored by Dr. Jens Hegg
17. **William Gillick, Brad Vega, Haley Novotny**, *“New Shell Sectioning Method can Improve Access for Trace Mineral Characterization”* mentored by Dr. Jens Hegg
18. **Josue Navarro**, *“Spatial Control of JAK-STAT Signaling: The Role of Receptor Internalization and Trafficking”* mentored by Dr. Ram Savan, Dr. Leonard Clinton D'Souza, University of Washington
19. **Wyatt Solomon**, *“Investigating the Roles of SMARCA1, HLTF, and DNA2 in the ALT Pathway”* mentored by Dr. Jaewon Min, Dr. Jina Lee, Columbia University
20. **Sophie Harrison**, *“Pip resistance via experimental evolution in *S. cerevisiae*”* mentored by Dr. Renee Geck
21. **Charlotte Eastman**, *“In Vitro Evolution of a Decarboxylase Ribozyme Catalyzing α -Ketoglutarate to Succinyl-CoA”* mentored by Dr. Lydia Pazienza
22. **Lauren Plagenz, (she/her), Lilia Churape Arenas, Trudy Hindman, Julia Pittman**, *“Systematic structural exploration to elucidate structure-property relationships of fluorescent chalcone derivatives”* mentored by Dr. Stephen Warren
23. **Julian Regan**, *“Towards an Efficient Synthesis of a Flexible Supramolecular Host with a Peptide Cage Architecture”* mentored by Dr. Masaomi Matsumoto

24. **Jack Tracey**, *"Molecular Matchmaking: Effective Molarity Enhanced Hydrazone Condensations for Bioorthogonal Ligation Using Cucurbit[8]uril"* mentored by Dr. Masaomi Matsumoto
29. **Greta Crumley, (she/her), Valeria Lopez**, *"The Feasibility of Implementing Immigration Stress Screening into Routine Perinatal Visits in Rural Eastern Washington"* mentored by Dr. Sarah Bliss Matousek
30. **Lilly Alkumeidy**, *"After the Camps: Japanese Resettlement in Spokane, Walla Walla, and the Yakima Valley, 1945-1960"* mentored by Dr. Veta Schlimgen
31. **Noah Day**, *"Academic Honesty amid the Authorlessness of the Digital World"* mentored by Dr. Chandler Rogers
32. **Savanna Raley, (she/her)**, *"Behind the Rainbow Curtain: The Effects of Criminalization on Drag and the Drag Community"* mentored by Dr. Alana Inlow
33. **Yuanpeng Wu, (he/him)**, *"Individualizing Distress: Masculinity, Digital Narratives, and Men's Mental Health on TikTok"* mentored by Dr. Jeremiah Favara
34. **Aidan Younger, (he/him/his)**, *"Grotesque Realism and National Disillusionment: Otto Dix, Veteran Corporeality, and Moral Crisis in Weimar Germany"* mentored by Dr. Joe Vignone
35. **Marie Plowman, (she/her)**, *"Designed to Distract? The Effects of TikTok on Attention and Distraction"* mentored by Dr. Doug Addleman
36. **Neide Idumwonyi, (he/him)**, *"Social Control on Instagram and the Framing of Immigration in America"* mentored by Dr. Melissa Click
37. **Anna Onishi, Chloe Summers**, *"The Effect of Token Economy and Functional Communication Training on Off-Task Behavior by a Male Middle School Student in a Self-Contained Special Education Classroom"* mentored by Prof. Jen Neyman, M.Ed.

38. **Litzzy Serrano Pacheco, Turner Brunell, Dominic Pearson,** *“The Effectiveness of the Premack Principle to Increase On-Task Behavior by a Thirteen-Year-Old Male with ADHD Across Two Middle School Classrooms”* mentored by Prof. Jen Neyman, M.Ed.
39. **Madi Rulon, Ashley Fine,** *“The Effectiveness of a Token Economy on Increasing On-Task Behavior by a High School Male with ADHD in an English Resource Room”* mentored by Prof. Jen Neyman, M.Ed.
40. **Caroline Oromchian, Sammi Schindler,** *“Increasing Independent AAC Use Through a Sentence Frame Intervention to Produce Complete Sentences by a High School Junior with a Disability in a Self-Contained Special Education Classroom”* mentored by Prof. Jen Neyman, M.Ed.

Visual Artists

- A. **Matthew Hein,** *“The Synthesis of Music and Memory”* mentored by Prof. Jennifer Seo, M.F.A.
- B. **Owen Nichols,** *“Impractical Vessels”* mentored by Prof. Mat Rude, M.F.A.

***Thank you for attending and talking with our students
about their passions and excellent work.***

*Special thanks to all research mentors, donors, funding
agencies, Campus Printing, Sodexo, and GUEST for helping
to make this event possible.*

Sincerely,

The Center for Undergraduate Research & Creative Inquiry

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http://www.gonzaga.edu/CURCI

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provide undergraduates with opportunities to conduct
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