



SPOKANE INTERCOLLEGIATE RESEARCH CONFERENCE

25 APRIL 2026

HOSTED BY WHITWORTH UNIVERSITY

GENERAL SCHEDULE FOR THE DAY

8:30-9:00 – Check-in and poster set-up

9:00-9:15 – Welcome to the Conference

9:30-10:15 – Poster Presentations, Session 1

10:30-12:00 – Oral Presentation Session

12:15-1:00 – Poster Presentations, Session 2

Mission

SIRC provides an opportunity for students from across schools, majors and disciplines to present their research and scholarship, receive meaningful feedback, and develop scholarly community.

About the Conference

SIRC has long been co-organized by Whitworth University and Gonzaga University, alternating between campuses in the spring each year. This celebration of research is open to all students in Spokane and more broadly in the Inland Northwest, and it costs nothing to attend. Although the event primarily supports undergraduate research, we have invited all students in our community to celebrate their research as well.

2026 Conference

The 23rd Spokane Intercollegiate Research Conference will be hosted by Whitworth University on 25 April 2026. Advanced high school, community college, undergraduate, and graduate students from the greater Spokane area and beyond have been invited to present original, faculty-advised research from any discipline. Submissions include original work conducted as part of classroom activities or performed outside of class under the direction of a faculty mentor. Submissions of abstracts for oral or poster presentations have included the name and contact information of a faculty member who has verified that the proposed work is suitable for a conference within a specific discipline.

Whitworth University

Since 1890, Whitworth has held fast to its founding mission to provide “an education of mind and heart” through rigorous intellectual inquiry guided by dedicated Christian scholars. Recognized as one of the top regional colleges and universities in the West, Whitworth University has an enrollment of nearly 3,000 students and offers more than 100 undergraduate and graduate degree programs. Whitworth University's 200-acre campus of red-brick buildings and tall pines offers a beautiful, inviting and secure learning environment. In all of its endeavors, Whitworth seeks to advance its founder's mission of equipping students to “honor God, follow Christ and serve humanity.”

Map and Directions



SIRC will be held in Robinson and Weyerhaeuser Halls (number 36 and 29 respectively).
High-Res map at this link: <https://www.whitworth.edu/cms/media/whitworth/documents/about-whitworth/map-amp-directions/whitworth-campus-map.pdf>

Parking

No permits or stickers are required for parking, and suggested lots are A1, B1, C1 and G1.

SIRC 2026 Organizing Committee

Jonathan Dawson
Bert Emerson
Scott Griffith
Staci Schneider
Colin Storm
Sean Swan
Melodie Workman

8:30-9:00am
CHECK-IN AND POSTER SET-UP
Weyerhauser Hall Lobby

9:00-9:15am
WELCOME
President Scott McQuilkin, Whitworth University
Weyerhauser 107

9:30-10:15 am
POSTER PRESENTATIONS – SESSION 1
Robinson Hall – 1st Floor

- 1 Epileptic Surgery in Adolescence**
Caitlin Smith (*she/her*) – Whitworth University
- 3 Early Life Stress Impairs Glucose Regulation: A Neuroendocrine Model of Type 1 Diabetes Risk**
Sarah Palmer (*she/her*) – Whitworth University
- 5 Metal Complexes and Non-Enzymatic Primer Extension**
Greta Henning (*she/her*) – Gonzaga University
- 7 SPCA1-deficient keratinocytes reveal Rho and ERK modulation as therapeutic strategies in Hailey–Hailey disease**
Michael Martin (*he/him*) – Gonzaga University
- 9 Examination of key residues for activity and substrate specificity in a prolyl diaminopeptidase from *Lb. helveticus* via site-directed mutagenesis**
Kenny Tran (*he/him*) – Whitworth University; Cora Jordan – Whitworth University
- 11 Shape Studies of Fifteen Functional Groups**
Shay Perlot – Whitworth University
- 13 Effects of Urbanization on Plant Diversity and Deer Mice Body Condition**
Hannah Garcia (*she/her*) – Gonzaga University
- 15 Are salivary cortisol levels decreased in college students when they interact with therapy dogs that they have no pre-existing relationship with?**
Elisabeth Korb – Whitworth University; Madeleine Lyon – Whitworth University

- 17 Investigating TOR signaling through experimental evolution of caffeine-tolerant *S. cerevisiae***
Ella Tran – Gonzaga University
- 19 Modeling predicted and measured activity for double-missense alleles of human pharmacogene G6PD**
Lauren Latona – Gonzaga University
- 21 Investigating the impact of glyphosate-containing herbicides on *Aeromonas* growth**
Deeya Chandran (*she/her*) – Gonzaga University
- 23 FAAH Expression in a Depression Model of Rat after Aerobic Exercise**
McKenzie Hernandez – Whitworth University; Jennifer Fulton – Whitworth University
- 25 Investigating the tolerance and response of *Microcystis aeruginosa* to environmental stressors**
Audrey O’Hara – Gonzaga University
- 27 Invasive Species Studies in the Little Spokane River**
Andre Jiang – Saint George’s School; Per Sande – Saint George’s School;
Pierce English – Saint George’s School; Matthew Schultheis – Saint George’s School
- 29 *Aeromonas* In the Little Spokane River**
Oliver Stabler – Saint George’s School; Farrah Zilko – St. George’s School
- 31 Treating Depression From Within - How The Microbiome Shapes Social Interaction**
Eliza Sylvester – Whitworth University; Chris Mahn – Whitworth University;
Madeline Sulya – Whitworth University
- 33 A Multi-length Scale Analysis of Enamel Erosion Caused by Celsius® and Lotus Energy®**
Lukas Bock – Gonzaga University; Allison Randol – Gonzaga University
- 35 Characterization of Gut Microbiota in Swim-Low and Swim-High Rats: Implications for Depression**
Hazel Sullivan (*she/her*) – Whitworth University
- 37 Mapping and augmenting user interaction in the study of effects of climate change on freshwater systems**
Elijah Chapman – Whitworth University
- 39 The Effectiveness of a Token Economy System on Appropriate Comments Made By a 19-Year-Old Male with an Intellectual Disability in a Special Education Transition Program**
Kate Gage – Gonzaga University

- 41 The Effects of UFLI Intervention on Spelling by an 11-Year-Old, Fifth Grade Female Student with a Specific Learning Disability in an Elementary Resource Room**
Alaina Linnell – Gonzaga University
- 43 The Effectiveness of The Hands-On Equations Learning System and Guided Practice on Algebra Skills by Students with Disabilities in a High School Math Resource Classroom**
Kayla Rodriguez – Gonzaga University; Ruthie Roach – Gonzaga University
- 45 The Effects of Model-Lead-Test Instruction and Precision Teaching on Receptive Letter–Sound Identification by an Elementary Student with Disabilities and Who Was a Refugee in a Resource Room Setting**
Zaidee Smith – Gonzaga University
- 47 Removing algal toxins from water affected by wildfires**
Caroline Triplett – Gonzaga University
- 49 The Sound Of Focus: Consonant And Dissonant Music Impacts On Auditory Working Memory In Musicians And Non-Musicians**
Olivia Caputo (*she/her*) – Gonzaga University
- 51 The Cultural Impacts on Western and Native Hawaiian Relationships in a Clinician-Client Therapy Setting**
Megan Hirasaki (*she/her*) – Whitworth University
- 53 Eyes in the Sky: European Responses To Russian Drone Incursions**
Katrina Morgan (*she/her*) – Gonzaga University
- 55 Trade policy shocks and differentiated goods: evidence from india’s 2019 gsp termination in the u.s. jewelry market**
Natalee Rizzo (*she/her*) – Gonzaga University
- 57 GlowMetrics: Beauty Product Performance Analytics**
Victoria Poitras – Gonzaga University
- 59 Sunshine and the Arachnid Daydream**
Riley O’Connell (*she/her*) – Gonzaga University
- 61 My Growth as an Actor Told through Shakespeare**
Elizabeth Hall (*she/her*) – Gonzaga University

10:30-12:00
ORAL PRESENTATIONS
Weyerhauser Hall & Robinson Hall

OP.1: Biochemistry & Molecular Biology

Room: Robinson 126

Chair: Professor Shannen Cravens – Gonzaga University

Pyridyl β -ketoenols, pyrazoles and their zinc complexes: photophysical properties, and DNA binding

Emma Hedberg – Gonzaga University

Investigating Ring-Size Effects on DNA Binding and Antimicrobial Activity in Bis-Pyrazolopyridine Derivatives

Kyle Barton (*he/him*) – Gonzaga University

Shank3 Δ C Alters Hippocampal Neuronal Transcriptional Responses to Sleep Deprivation

Ainsley Brockman (*she/her*) – Washington State University, Spokane

Session 2: Environmental Science & Ecology

Room: Robinson 141

Chair: Professor John Orcutt – Gonzaga University

Glyphosate monitoring in the Spokane River Watershed

Georgia LaPlante (*she/her*) – Gonzaga University

Strain-specific differences in growth and photophysiology of *Microcystis aeruginosa* following glyphosate exposure

Luca Morones-Calcagno (*he/him*) – Gonzaga University

Is the widely used Tea Bag Index assay inhibiting the microbes it aims to measure?

Lydia Davis (*she/her*) – Gonzaga University; Carly Kern (*she/her*) – Gonzaga University

Developing Stratigraphic Columns to Understand Pinnipedimorph Locomotion & Paleoenvironment

Peyton Hoyt – Gonzaga University

Session 3: Science & Math

Room: Robinson 229

Chair: Professor Philip Measor – Whitworth University

Invertebrate fauna of the Oligocene Sooke Formation: Paleoenvironment of *Behemotops proteus*

Ella Stewart (*she/her*) – Gonzaga University

Decoding *Desmostyilia*: An Ecomorphological Analysis of *Behemotops proteus*

Kevin Talbott (*he/him*) – Gonzaga University

A 3DP optofluidic sensing device

Enqiao Qian – Whitworth University

Knit Happens: Untangling Complicated Unknots

Megan Gilbert – Gonzaga University; Christian Martez – Gonzaga University

Session 4: Data & Economics

Room: Robinson 310

Chair: Professor Maria Tackett – Gonzaga University

Fundamentals of Topological Data Analysis

Mitchell Schoenbacher – Whitworth University; Annette Van Niekerk – Whitworth University

Do Standardized Math Scores Influence Private School Enrollment? Evidence from Washington State

Katharine Franklin (*she/her*) – Gonzaga University

Rest vs. Rust in the NBA and NHL Playoffs

Todd Spangler – Gonzaga University

First-Serve Percentage and Match Outcomes in Men's Professional Tennis (ATP)

Giovanni Branchetti – Gonzaga University

Session 5: Economics & Politics

Room: Robinson 345

Chair: Professor Laura Brunell – Gonzaga University

Measuring the effects of IEEPA Tariffs on the Japanese VTuber Industry

Daniel Arinez – Washington State University

Friendly Fire: Tariffs at the Border, Economic Protectionism and Its Impact on U.S.–Canada Border Towns

Sophie St. Jacques (*she/her*) – Whitworth University

Unemployment rates and property crime rates

Cooper Vendenhaak – Gonzaga University

Draining the Cloud: Estimating the Impact of Colocation Data Centers on U.S. Water Withdrawals

Ethan Charlebois-Berg – Gonzaga University

Session 6: Economics & Health

Room: Weyerhauser 203

Chair: Professor Sean Swan – Whitworth University

County-level electoral competitiveness and divorce rates: A spurious relationship?

Thi Lan Anh Ha (*she/her*) – Gonzaga University

The Impact of Superfund Site Presence on COVID-19 Death Rates

Ethan King – Gonzaga University

Mental Health in the U.S. Military: 1960 to Today

Zack Page – Whitworth University

Session 7: Social Science

Room: Weyerhauser 205

Chair: Professor Colin Storm – Whitworth University

The Interplay of Race/Ethnicity and Parental Education in Educational Attainment: A Cohort Analysis

Christopher Byrd (*he/him*) – Whitworth University

Organizational Communication Patterns and Workplace Belonginess and Loneliness

Elly Osborne – Whitworth University; Mariia Yazepova – Whitworth University

Examining Factors Contributing to Limited Transportation Access Among Adults with Disabilities

Emma Webinger – Gonzaga University

Adjusting for response biases in the perception of autism severity in Japan vs. the United States

Alexi Fogo – Gonzaga University

Session 8: History & Politics

Room: Weyerhauser 303

Chair: Professor Amanda Clark – Whitworth University

Post-WWII: The Evolving Role of the First Lady

Genesis Castro – Gonzaga University

To Build a University

Bar Rozenhaimer – Whitworth University

Tranquilizers and Psychedelics: Drugs of the 1960s

Camrynn Moore – Whitworth University

Remedios Varo: Surrealism as an Avenue to Reclaim Feminine Power

Sequoia Barger – Gonzaga University

Session 9: Arts & Culture

Room: Weyerhauser 304

Chair: Professor Nicole Sheets – Whitworth University

Challenging Protest: An Analysis of Fritz Scholder's Wounded Knee Paintings

Courtney Mankiller – Whitworth University

A Query for Queerness: Children's Literature and Building a More Open-Minded Future

Kaitlyn Hawker (*she/her*) – Whitworth University

The Heroine's Journey: Re-Imagining the Quest

Hailey O'Hara (*she/her*) – Gonzaga University

OP.10: Creative Writing

Room: Weyerhauser 305

Chair: Professor Melodie Workman – Whitworth University

The Shape of Difference

Winter Johnsen – Whitworth University

Funeral Home

Christina Rabe – Whitworth University

On Grief

Tehya Russell – Whitworth University

12:15-1:00pm
POSTER PRESENTATIONS – SESSION 2

Robinson Hall – 1st Floor

- 2 **Affects of Protein Encoding Gene TTY on Sleep in Drosophila**
Carter Wittler (*he/him*) – Gonzaga University
- 4 **Polymorphism and Photophysical Properties in Modified Chalcones:For Applications to the Development of Drugs**
Angela Macabinguil (*she/her*) – Gonzaga University
- 6 **SPCA1-deficient keratinocytes reveal Rho and ERK modulation as therapeutic strategies in Hailey–Hailey disease**
Michael Martin (*he/him*) – Gonzaga University
- 8 **The Effect of Oxidative Damage to Guanines in the Catalytic Core of Dz 10-23**
Katelyn Rigg (*she/her*) – Gonzaga University
- 10 **3D-printed microfluidic device for DNA extraction**
Noran Khalil (*she/her*) – Whitworth University
- 12 **Applying *S. cerevisiae* models to measure function of human pharmacogene variants**
Katelyn Furman – Gonzaga University; Amy Howlett – Gonzaga University
- 14 **Synthetic Biology - Assembly and Validation of iGEM gene constructs in *E. coli* at GU**
Alex Kary – Gonzaga University; Manuela Cabrera-Gil – Gonzaga University
- 16 **Studying the subcellular localization of the 55LCC complex**
Wyatt Solomon (*he/him*) – Gonzaga University
- 18 **The Effects of Soil Disturbance on Seed Bank Regeneration and Native-Invasive Grass Establishment**
Sophia Touchette (*she/her*) – Gonzaga University
- 20 **Lichen Abundance in Montane Cloud Forests of Costa Rica is not affected by Forest Successional type**
Rachel Jansons – Whitworth University; Alex McIntyre – Whitworth University
Ella Davis – Whitworth University; Maia Mouser – Whitworth University
- 22 **The disappearance of *Donacidae* clams in Tarcoles, Costa Rica**
Rosalind Nordberg – Whitworth University; Jack Ireton – Whitworth University;
Eli Cach – Whitworth University; Damion Biegel – Whitworth University

- 24 Comparing the effectiveness of audio and visual searches in measuring anuran biodiversity in Costa Rica**
Zach Engelson – Whitworth University; Olivia Hughes – Whitworth University
Brayden Toner – Whitworth University; Jordan Turner – Whitworth University
- 26 Determining molecular effects of chalcones using experimental evolution**
Katie Manson – Gonzaga University; Norah Thornton – Gonzaga University
- 28 Micro-Dosing Animal Interventions for Nurse Wellness: A Randomized Controlled Trial**
Fallon Rooney (*she/her*) – Saint George’s School; Dua Shahbaz (*she/her*) – Saint George’s School; Keelie Halsted (*she/they*) – Saint George’s School
- 30 Differences in the Nucleolar Response After Different Types of DNA Damage**
Kelsey Sakraida – Gonzaga University
- 32 Understanding Patient Perception of Consent in Office Based Procedures**
Liliana Castle – Gonzaga University
- 34 Predicting Uptake and Release of VOCs and SVOCs Detected After Wildland Urban Interface Fires from Plastic Drinking Water Pipes**
Corrado Masciocchi (*he/him*) – Gonzaga University
- 36 Running Toward Relief: How Exercise Shapes Depression-Epilepsy Interactions in SwHi & SwLo Rats**
Emily Needham – Whitworth University
- 38 Analysis of Alcohol Ban After Midnight on Violent Crime/Drug use Downtown Spokane**
Liam Fitting – Gonzaga University
- 40 The Effects of Receptive Tact Training on Letter Identification by a Five-Year-Old Boy in an Integrated Preschool**
Isabel Granados – Gonzaga University
- 42 The Effectiveness of a Token Economy System on Off-Task Behavior by a Student with Autism Spectrum Disorder (ASD) in a Middle School Classroom**
Kaylie Rink – Gonzaga University; Adri McAuliffe – Gonzaga University
- 44 The Effects of Positive Reinforcement on Decreasing Off-Task Behavior by Two Middle School Students with Disabilities in Resource Rooms**
Zaidee Smith – Gonzaga University; Alaina Linnell – Gonzaga University;
Ava Fink – Gonzaga University

- 46 Assessing the Impact of Direct Instruction Flashcards on CVCC Word Reading by a Middle School Student with Multiple Disabilities in a Self-Contained Special Education Classroom**
Alejandra Beltran Maldonado – Gonzaga University; Isabel Granados – Gonzaga University
- 48 Catan Study**
Grace Keller – Gonzaga University; Indigo Dalosto – Gonzaga University; Marilyn Nickerson – Gonzaga University; Gabi Feleciano – Gonzaga University
- 50 Does Accent Familiarity Affect Speech Processing?**
Declan Gallup – Gonzaga University
- 52 HEXACO Personality Traits and Substance Use**
Isabelle Fradley – Gonzaga University; Mary Manavbasi – Gonzaga University
Carissa Kanae – Gonzaga University
- 54 Stardew Valley: Improving Modern Life Through an Ideal Rural Setting**
Avis Brannon – Whitworth University
- 56 Regional disparities in organ donation: A statistical analysis**
Caitlin Duffy (*she/her*) – Gonzaga University
- 58 How does gender inequality affect the outmigration of highly skilled/educated women?**
Elyse Cairney (*she/her*) – Gonzaga University