

College of Arts & Sciences Annual Report 2017-2018

June 1, 2017 – May 31, 2018

Appendix 3 Student Achievements

Art

<i>Scott Campbell</i>	Young-Fell Memorial Internship Program, Pottery Place Plus, Spokane, Spring 2018 Student Interns Exhibit, Pottery Place Plus, Spokane, February-April 2018
<i>Cory Fusick</i>	Young-Fell Memorial Internship Program, Pottery Place Plus, Spokane, Spring 2018 Student Interns Exhibit, Pottery Place Plus, Spokane, February-April 2018
<i>Celeste Hatfield</i>	Young-Fell Memorial Internship Program, Pottery Place Plus, Spokane, Spring 2018 Student Interns Exhibit, Pottery Place Plus, Spokane, February-April 2018
<i>Lindsey Johnstone</i>	Senior Art Award 2018 CEL internship with the Women's Hearth; taught art course for her internship experience Graduate School Acceptance: Accelerated Master of Arts in Teaching, Seattle Pacific University
<i>Camille Walther</i>	Women's and Gender Studies Award 2018 Exhibit at Fem Fest, The Bartlett, Spokane, April 2018

"Shoebox" Gallery, Spring 2018

More than 20 Gonzaga students exhibited their artistic or poetic creations in solo or group shows in the new "Shoebox" Gallery (formerly a storage/computer room) in the Art Department at various points during the spring semester. Students signed up for exhibition slots scheduled for two weeks at a time. This will be an ongoing endeavor for 2018-19.

The Spires Society Project for University Advancement, January-February 2018

This project entailed the creation of an encaustic painting of St. Ignatius of Loyola by four Gonzaga students: Bridget Foster, Lindsey Johnstone, Sophia Maggio, and Courtney Shih. The painting is actually comprised of individual paintings that collectively create a single image of St. Ignatius. In March each individual painting was given to a member of the Spires Society, a group comprised of top donors to Gonzaga.

Nelken Line Project/ZagLab, February 2018

Art students collaborated with the Department of Music and the Department of Theatre and Dance on a short film directed by Charlie Pepiton. The finished project is part of a series of short films inspired by the legacy of the world renowned dancer/choreographer Pina Bausch and can be viewed at:
https://youtu.be/1tywgpvey_k.

Mural for the Northeast Community Center, Hillyard Neighborhood, March 2018

Students enrolled in Painting 1 and 2 courses during the spring semester painted a mural that they designed in collaboration with local muralist Daniel Lopez.

Biology

<i>Megan Zimbelman</i>	Robert and Claire McDonald Award for Distinction in Biology
<i>Katherine Drexelius</i>	Robert D. Prusch Award for Distinguished Service to the Department
<i>Ashley Just</i>	Fourth year class award, Gonzaga University
<i>Jessica Herron</i>	Jerry Kohls Excellence in Philosophy
<i>Sophia Troeh</i>	NOAA Ernest F. Hollings Undergraduate Scholarship. Award includes two years of scholarship support (\$9500 per year) plus a ten-week, full-time, paid summer internship with NOAA, as well as support for presenting the summer research at a national conference. 150 scholarships were awarded out of 600 applicants.
<i>Sophia Troeh</i>	Mary Stuart Rogers Scholarship from GU. This \$5000 scholarship is awarded to students who have a "commitment to social justice demonstrated through community service involvement and student leadership, and special consideration is given to students who aspire to become teachers."
<i>Haylee Hamilton</i>	1st Place, Poster Presentation at the Spokane Intercollegiate Research Conference

Student Presentations at the Gonzaga Science Research Program 14th Annual Poster Session
October 7, 2017. Gonzaga University. Spokane, WA

Jackson M. Davis, Barb Moore, Modeline Celestin, Daniel Y. Choi, and Stephen G. Hayes. "An Investigation into Elk (*Cervus canadensis*) GPS collar bias in the Coeur d'Alene Mountains of Idaho."

Bailey Luoma, Rhenz Dan Iloreta, and Betsy Bancroft. "A survey of macro and microinvertebrate diversity at Deep Creek Preserve."

Paige L. Hauter, Julia E. Misslin, and Betsy Bancroft. "Effects of climate change on food preference in brook stickleback."

Austen Rankin and Betsy Bancroft. "Stress Across Aquatic Ecosystems: a Meta-Analysis of Synergistic Interactions."

Kailee McGeer, Julia Engstrom, and Kirk Anders. "Where Does Transcription Initiation Begin in the Bacteriophage Corndog?"

Spencer Roop, Megan Saathoff, Jenna Pruett, and Elizabeth Addis. "Nest-site Selection Patterns and Survivorship in Western North American Painted Turtles (*Chrysemys picta*)."

Quinn Kensey, Jackson Davis, David Goltz, Rachael Snodgrass, and Stephen Hayes. "Biomonitoring for Lead Using Wood Duck (*Aix sponsa*) Eggshells."

Megan Saathoff, Jenna Pruett, Luke Hoekstra, Spencer Roop, Fred Janzen, and Elizabeth Addis. "Variation in Maternal Investment across the Range of the Painted Turtle (*Chrysemys picta*)."

Ian McGowen, Bailey Luoma, Ashley Beausoleil, Elizabeth Grainey, Jerry Sicalo, Cyla Sparks, Vina Tran, Amanda Braley, Kirk Anders, and Marianne Poxleitner. "Gonzaga Takes on the Host Range and Xeno Challenges."

Ashley Beausoleil, Aleksei Gendron, and Kylie Allen. “Investigation of Genes Involved in Compatible Solute Biosynthesis in *Methanococcus maripaludis*.”

Ashley Beausoleil, Aleksei Gendron, and Kylie Allen. “Identification of a Modified Coenzyme F430 in *Methanococcus maripaludis* and *Methanosarcina acetivorans*.”

Camille Dodson, Megan Glenski, Cameron Marsh, and Caroline Sweeney, Joseph Haydock, and Sherry Wood. “A Comparison of Fern Diversity in Varzea and Terra Firme of the Ecuadorian Amazon Rainforest.”

Maika Thiringer, Ali Schultheis, Scott Bozman, Faith Valente, Joseph Haydock, and Sherry Wood. “Foraging Behaviors of *Atta Colombica* at the Tiputini Biodiversity Station.”

Danielle Spellacy, Hoai T. Tran, and Antonio Abeyta. “Functional domain analysis of the Nek8 kinase in DNA damage repair.”

Vina Tran and Carla Y. Bonilla. “Testing the Ability of *Bacillus subtilis* to Cross Protect Against Oxidative Stress.”

Kayla Gunther and Steven K. Schwartz. “En Garde! Jousting Behavior and Repetitive Copulations in the Pirate Wolf Spider.”

DeShae Dillard and Steven K. Schwartz. “Finish Already: Extended Copulation Duration and Monogamy in the Wolf Spider *Schizocosa mcmurteri*.”

Katherine Drexelius, Venesa Nieto-Estevez, Drew Thodeson, Parul Varma, and Jenny Hsieh. “Using human cortical and cerebral organoids to model prenatal hypoxic-ischemic encephalopathy.”

Nick Sadilek, Patrick Kirsch, Carter Odean, and Gary Chang. “What is the buzz: A Behavioral Study on the Wool Carder Bee (*Anthidium manicatum*).”

Ashley Just, Macklin Ohnemus, Andrew Marble, Nicholas Lin, and Christy Andrade. “Investigating Bacterial Communities Isolated from Mosquitoes Native to Spokane, WA.”

Carly Dodson, Grady Arnzen, Willy Duguay, Mason Scheer, Joseph Haydock, and Sherry Wood. “Effects of obstacle size on the reestablishment of foraging travel time of leaf-cutting ants in the Amazon Rainforest.”

Claire Henson, Alex Kures, Hans Munzing, LaShantay Walls, Bill Ettinger, and Patrick Tennican. “An Antimicrobial Approach to the Investigation into the Reduction of Hospital Acquired Infections.”

Christopher Yakawich, Frankie Garcia, Jack White, Joseph Haydock, and Sherry Wood. “Spider Web Abundance and Height Distribution Among Floodplain and Non-Floodplain Regions of Ecuadorian Amazon Rainforest.”

Dylan Scanes, Ben Buchalski, and Brook Swanson. “Weapon Performance of Rhinoceros Beetles.”

Rachael Snodgrass, Jackson Davis, Quinn Kensey, David Goltz, and Stephen Hayes. “Effects of Heavy Metal Pollution on the Macroinvertebrate Community of the Lower Coeur d'Alene River Basin.”

Annalise Kress, Mayra Blanco, Edgar Bartolome, and Hugh Lefcort. "Elevated CO₂ alters *Daphnia* fright response."

Rachael Haas, Matthew Wilson, Tina Blewett, and Stephen Hayes. "Using Aerial Survey to Identify Spring Migration Stopover Sites."

Elisabeth Sitio and Kirk Anders. "Investigating the promoters of two genes in the Cluster O bacteriophage, Corndog."

Nicole Barish, Reilly Bealer, and Joseph Haydock. "How Does Relatedness of Breeders Affect Reproductive Partitioning in the Acorn Woodpecker."

R  my Delplanche and John Orcutt. "Large Mammals of the Hemphillian of McKay Reservoir, Oregon."

Erika Santacruz and Carla Bonilla. "Elucidating the Activation Mechanism of the Sigma Factor SigB when *Bacillus subtilis* is exposed to Reactive Oxygen Species."

Caitlin Steinbeck, Alli Steinbeck, Jackson Wills, Eleanor Weisblat, Joseph Haydock, and Sherry Wood. "A Comparison of Insect Abundance and Diversity of V  rzea and Terra Firme at Tiputini Biodiversity Station."

Claire Vietri, Emilie Pratt, and John Orcutt. "Recent Discoveries of Small Vertebrate Fossils from McKay Reservoir."

DeShae Dillard, Blake Eberhardt, Sam Eberhardt, Kayla Gunther, Jack Kiesewetter, Miles Kim, Spencer Roop, Nicholas Sadilek, and Gary Chang. "Can a protocol for studying bee behavior be applied to yellowjackets?"

Student Presentations at the 26th Annual Murdock College Science Research Conference
November 9-11, 2017. Spokane Convention Center. Spokane, WA

Ashley Beausoleil and Aleksei Gendron, Dr. Kylie Allen. "Investigation of Genes Involved in Compatible Solute Biosynthesis in *Methanococcus maripaludis*."

Rhenz Dan Iloreta, Bailey Luoma, Dr. Betsy A. Bancroft. "A survey of macro and microinvertebrate diversity at Deep Creek Preserve."

Paige Hauter, Julia E. Misslin, Dr. Betsy A. Bancroft. "Effects of climate change on food preference in brook stickleback."

Karli McIntyre, Ondraya Romero, Megan Lantsberger, Bridget Eastwood, Dr. Brook O. Swanson; Dr. Betsy A. Bancroft. "Effects of climate change on larvae of non-native amphibian species and their interactions with native amphibians."

Rachael Snodgrass, Jackson M. Davis, Quinn Kensey, David M. Goltz, Dr. Stephen G. Hayes. "Effects of Heavy Metal Pollution on the Macroinvertebrate Community of the Lower Coeur d'Alene River Basin."

Austen Rankin, Dr. Betsy A. Bancroft. "Stress Across Aquatic Ecosystems: a Meta-Analysis of Synergistic Interactions."

Benjamin Buchalski, Dylan Scanes, Dr. Brook Swanson. "Weapon Performance of Rhinoceros Beetles."

Kailee McGeer, Julia Engstrom, Dr. Kirk Anders. “Where Does Transcription Initiation Begin in the Bacteriophage Corndog?”

Elisabeth Sitio, Dr. Kirk Anders. “Investigating the promoters of two genes in the Cluster O bacteriophage, Corndog.”

Vina Tran, Dr. Carla Y. Bonilla. “Testing the Ability of *Bacillus subtilis* to Cross Protect Against Oxidative Stress.”

Megan Zimbelman, Thomas Cast, Ian Crawford; Dr. Kylie Allen. “Elucidation of the Role of CT610 in the Folate Synthesis Pathway in *Chlamydia trachomatis*.”

Aleksei Gendron, Ashley Beausoleil; Dr. Kylie Allen. “Identification of a Modified Coenzyme F430 in *Methanococcus maripaludis* and *Methanosarcina acetivorans*.”

Claire Belen Vietri, Emilie Pratt; Dr. John Orcutt. “Recent Discoveries of Small Vertebrate Fossils from McKay Reservoir.”

Claire Henson, Alex Kures, Hans Munzing, LaShantay Walls, Dr. Patrick Tennican (University of Washington); Dr. William Ettinger. “An Antimicrobial Approach to the Investigation into the Reduction of Hospital Acquired Infections.”

Student Presentations at the 15th Annual Spokane Intercollegiate Research Conference
April 28, 2018. Whitworth University. Spokane, WA

Veronica Tischer, Catherine R. Siefert, David Baker, and Joseph Panchesson: “A Critical Analysis of the Food Industry and Proposed Local Solutions.” Faculty Sponsor: Betsy Bancroft.

Erik Robin Bruhjell: “Functional Microbial Diversity in Lake Arthur, Spokane, Washington.” Faculty Sponsor: Betsy Bancroft.

Paul Leonetti: “Lake Arthur Community Project.” Faculty Sponsor: Betsy Bancroft.

Reilly Bealer: “How Does Relatedness of Breeders Affect Reproductive Partitioning in the Acorn Woodpecker?” Faculty Sponsor: Joseph Haydock.

Nathaniel Carleton: “GIS Survey of the Flying L Ranch.” Faculty Sponsor: Betsy Bancroft.

Colette Jayde Werk, Erik Robin Bruhjell, and Gabrielle Dianne Thompson: “When Objects Collide: A Proposal for the Mitigation of Vehicle-Wildlife Collisions in the Inland Northwest.” Faculty Sponsor: Betsy Bancroft.

Haylee Hamilton: “Sleep Disturbances in Pathological Amyotrophic Lateral Sclerosis *Drosophila melanogaster* Model.” Faculty Sponsors: Jason Gerstner (WSU-Spokane) and Gary Chang.

Bailey R. Luoma: “Soil Characteristics in Populations of MacFarlane’s Four-O-Clock (*Mirabilis macfarlanei*), a Threatened Endemic Plant.” Faculty Sponsor: David L. Boose.

Paige Hauter, Karli McIntyre, Ashley Trunnell, Ashley Abriam-Snell, and Julia Bellia: “Developing an Environmental Education Plan and Data Collection Protocol for Local Public Schools in the Spokane Area.” Faculty Sponsor: Betsy Bancroft

Shelby Bailess: “Glial Regulation of Sleep/Wake in *Drosophila melanogaster*.” Faculty Sponsor: Jason Gerstner, WSU-Spokane.

Student Presentations at Professional Meetings

Leah Horslen, Candice Wilshire, Brian Louie, Ralph Aye, Alexander Farivar, Eric Vallières: “Long-term Impact of Endoscopic Thoracic Sympathectomy on Quality of Life for Patients With Primary Palmar Hyperhidrosis”. Swedish Medical Center, Spokane, WA

Oral presentation: The 64th Southern Thoracic Surgical Association Annual Meeting. San Antonio, Texas. Discussant: Daniel DeArmond, University of Texas Health Science Center, San Antonio, Texas. November 10, 2017.

Quinn Kensey, David Goltz, Jackson Davis, Rachael Snodgrass, Stephen Hayes: “Using Wood Duck Eggshells to Biomonitor Lead in the Idaho Panhandle” Oral Presentation: The Wildlife Society Meeting, Idaho Chapter. March 2018.

Rachael Haas, Matthew Wilson, Stephen Hayes, Tina Blewett, Mike Rule: “Comparison of Aerial and Ground Survey Bias of Waterfowl Spring Migration”. Poster Presentation: The Wildlife Society Meeting, Washington Chapter. February 2018

Ashley Just, A. Marble, M. Ohnemus, N. Lin, C. Andrade: “Investigating Bacterial Communities Isolated from Mosquitoes Native to Spokane, WA”. Poster presentation: Northwest Branch of ASM 2017 Annual Meeting. Pullman, WA.

Spencer Roop, Megan Saathoff, Jenna Pruett, Elizabeth Addis: “Nest-site Selection Patterns and Survivorship in a northern population of Western Painted Turtles (*Chrysemys picta*)”. Poster presentation: Society of Integrative and Comparative Biology. San Francisco, CA. January 2018.

Megan Saathoff, Jenna Pruett, Spencer Roop, Fred Janzen, Luke Hoekstra, Elizabeth Addis: “Variation in Maternal Investment Across the Range of the Painted Turtle (*Chrysemys picta*)”. Poster presentation: Society of Integrative and Comparative Biology. San Francisco, CA. January 2018.

Erika Santacruz and Carla Y. Bonilla: “Elucidating the activation mechanism of SigB when *Bacillus subtilis* is exposed to reactive oxygen species”. Poster presentation: Society for the Advancement of Chicanos/Hispanics/Native Americans in Science, 2017, Salt Lake City, Utah.

Student co-authors of peer-reviewed scientific publications

Leah Horslen

Leah C. Horslen, Candice L. Wilshire MD, Brian E. Louie MD, Eric Vallières MD FRCSC. 2018. Long-term impact of endoscopic thoracic sympathectomy for primary palmar hyperhidrosis. The Annals of Thoracic Surgery. (in press) <https://doi.org/10.1016/j.athoracsur.2018.04.063>

Robert Rollins

Rollins, RE and NL Staub. 2017. The Presence of Caudal Courtship-like Glands in Male and Female Ouachita Dusky Salamanders (*Desmognathus brimleyorum*). Herpetologica 73:277-282.

Claire Atkinson
Annica Balentine
Cassidy Bummer
Thomas Cast
Katherine Drexelius
Kara Gallo
Kayla Gunther
Megan Zimbelman

Grace Hamill
Greta Held
Chad Hicks
Jeff Kepple
Julia Misslin
Ericka Moreno
Justin O'Farrell

Emily Pratt
Amanda Sursely
Shelby Tiller
McCaffery Townsend
Alanna Unruh
Claire Vietri
Allison Wong

Kirk Anders, Nazir Barekzi, Aaron Best, Gregory Frederick, Dmitri Mavrodi, Edwin Vazquez, SEA-PHAGES, Nana Yaa Amoh, Frederick Baliraine, William Buchser, et al. 2017. Genome Sequences of Mycobacteriophages Amgine, Amohnition, Bella96, Cain, DarthP, Hammy, Krueger, LastHope, Peanam, PhelpsODU, Phrank, SirPhilip, Slimphazie and Unicorn. Genome Announcements 5:e01202-17. doi: 10.1128/genomeA.01202-17.

Students Entering Graduate or Professional School

<i>Robert Rollins</i>	(class of 2016) Ludwig Maximilian University of Munich for PhD (finished his MS there this year)
<i>Katherine Drexelius</i>	University of Colorado School of Medicine for MD
<i>Zack Frost</i>	Pacific University College of Optometry to work on a Doctor of Optometry, OD
<i>Allison Wong</i>	UC Irvine's Graduate Program in Genetic Counseling for MS in Genetic Counseling
<i>Megan Zimbelman</i>	University of Pennsylvania School of Dental Medicine for DMD

Chemistry/Biochemistry

<i>Chad Hicks</i>	American Institute of Chemists Outstanding Senior Chemistry Award, Department of Chemistry and Biochemistry, Gonzaga University (2018)
<i>Hanna Clements</i>	American Institute of Chemists Outstanding Senior Chemistry Award, Department of Chemistry and Biochemistry, Gonzaga University (2018)
<i>Jenna Valentine</i>	Organic Chemistry Award, Department of Chemistry and Biochemistry, Gonzaga University (2018)
<i>Alla Kozubenko</i>	Analytical Award, Department of Chemistry and Biochemistry, Gonzaga University (2018)
<i>Kara Gallo</i>	Inorganic Chemistry Award, Department of Chemistry and Biochemistry, Gonzaga University (2018)
<i>Lindsey Ernst</i>	Outstanding Freshman in Chemistry, Department of Chemistry and Biochemistry, Gonzaga University (2018)

Senior Thesis and Literature Review Departmental Seminars

Hanna Clements: “Developing Peptide Metallo-Cages.” Faculty Mentor: Masaomi Matsumoto.

Daniel Erickson: “Supramolecular Biomimetic Catalysis Using Cucurbit[8]uril.” Faculty Mentor: Masaomi Matsumoto.

Chris Daniels: “Investigation of catalytic potential of Seryl-Histidine.” Faculty Mentor: Masaomi Matsumoto.

Chad Hicks: “Resurrecting Common Ancestors to Study Evolution of HMG-CoA Reductase.” Faculty Mentor: Jeff Watson.

Lisa DePledge: “An investigation of a novel pathway regulating biofilm formation in the plant pathogen, *Agrobacterium tumefaciens*.” Faculty Mentor: Kylie Allen.

Annalise Rogalsky: “Nonenzymatic Synthesis of Farnesol Glucuronide.” Faculty Mentor: Stephen Warren.

Kara Gallo: “Computational Study of Lignocellulose Combustion: Efforts to Reduce Pollutants.” Faculty Mentor: Matthew Cremeens.

Zach Steinberg: “Investigating Removal of Bound Water on Luminescent and MR Properties of Lanthanide Complexes.” Faculty Mentor: Osasere Evbuomwan.

Alexandra Neitz: “Radical SAM enzymes involved in compatible solute biosynthesis in methanogens.” Faculty Mentor: Kylie Allen.

Shane O'Brien: “Attempts to Mitigate Dioxin Pollution From Wood Combustion.” Faculty Mentor: Matthew Cremeens.

Cassandra Bourland: “A new approach in synthesizing (+/-)-[18F]-3-Fluoro-2-Hydroxypropionate as a PET tracer of lactate uptake in the brain for Alzheimer's Diagnosis.” Faculty mentor: Stephen Warren.

Sophie Orite: “RquA Expression, Purification, and Characterization for Rhodoquinone Biosynthesis.” Faculty mentor: Jennifer Shepherd.

Evan Bunnage: “Chromatographic evaluation of bilayer structure sensitive interactions, effect of solid support structure.” Faculty Mentor: Eric Ross.

Cyla Sparks: “Determining the Role of GTP in the Regulation and Activity of *B. cenocepacia* HMG-CoA Reductase.” Faculty Mentor: Jeff Watson.

Samantha Jones: “Investigating the Filtration Abilities of Pervious Paver Units.” Faculty Mentor: David Cleary.

Carly Goodspeed: “Purification and characterization of RquA to determine its role in the biosynthesis of rhodoquinone.” Faculty Mentor: Jennifer Shepherd.

Thomas Higley: “RNAi knockdown of putative genes in the biosynthetic pathway of rhodoquinone in *Caenorhabditis elegans*.” Faculty Mentor: Jennifer Shepherd.

Emily Stavig: "The Inhibiting Effects of Nicotinic Acid Hydroxamate & Caffeic Acid Phenethyl Ester on Melanogenesis." Faculty Mentor: Sarah Siegel.

Christopher Thomas: "Investigating Opioid and Cannabinoid Interaction for Potential Novel Treatments." Faculty mentor: Jeff Watson.

Ernest Stoklosa: "Minimizing Interface Reactivity in Garnet Solid-State Electrodes." Faculty mentor: Donald Clayton III.

Lisa DePledge: "An investigation of the impact human cytomegalovirus may have on the proliferation of glioblastoma." Faculty mentor: Jeff Watson.

Austin Karr: "Reviewing protein-metal interactions to explore potential roles for affinity chromatography techniques." Faculty mentor: Eric Ross.

Thania Torres-Carrillo: "Vitamin E as a preventative therapy for Diabetic Retinopathy." Faculty mentor: Gemma D'Ambruoso.

Research Poster presented at Enzymes, Coenzymes and Metabolic Pathways Gordon
Research Conference, Waterville Valley, NH, July 16-21, 2017

Cast, T., Crawford, I., Brandecker, K., Thiaville, J., de Crécy-Lagard, V., White, R., Allen, K.
Investigation of a Novel Route for *p*-Aminobenzoic acid Biosynthesis in *Chlamydia trachomatis*.

Research Posters presented at the 14th Annual Center for Undergraduate Research and Creative Inquiry
Research Showcase and Gonzaga Science Research Program Poster Session,
Gonzaga University, Spokane, Washington, October 8, 2017

Annalise Rogalsky and Chad Hicks, "Evolution of Morpheein Behavior in Bacterial HMG-CoA Reductase." Faculty mentor: Jeff Watson.

Hanna Clements, "Developing Peptide Metallo-Cages." Faculty mentor: Masaomi Matsumoto.

Louisa Reilly, "Progress toward the synthesis of (2-sec-butylphenyl) 3-fluorooxirane-2-carboxylate." Faculty mentor: Stephen Warren.

Ashley Beausoleil and Aleksei Gendron, "Investigation of Genes Involved in Compatible Solute Biosynthesis in *Methanococcus maripaludis*." Faculty mentor: Kylie Allen.

Ashley Beausoleil and Aleksei Gendron, "Identification of a Modified Coenzyme F430 in *Methanococcus maripaludis* and *Methanosarcina acetivorans*." Faculty mentor: Kylie Allen.

Thomas Cast and Ian Crawford, "Vitamin B9 Synthesis in *Chlamydia trachomatis*: The Novel pABA Pathway." Faculty mentor: Kylie Allen.

Daniel Erickson, "Cucurbit[8]uril as a Supramolecular Host for Metal Complex Catalysis." Faculty mentor: Masaomi Matsumoto.

Christopher P. Daniels, "Investigation of catalytic ability of seryl-histidine." Faculty mentor: Masaomi Matsumoto.

Bridget Hoag and Dianna Karlova, “Development of Europium (III) Complexes with improved PARACEST MRI and Luminescence Properties.” Faculty mentor: Osasere Evbuomwan.

Alla Kozubenko and Kelly Stone, “Development of Metal Ion Responsive Magnetic Resonance Imaging Contrast Agents.” Faculty mentor: Osasere Evbuomwan.

Tanner D. Rookard, “Development of Transition Metal Complexes for the Detection of Anions by NMR Spectroscopy.” Faculty mentor: Osasere M. Evbuomwan.

Poster presentation at the University of Washington School of Medicine Poster Session,
Spokane, Washington, October 24, 2017

Megan Zimbelman, Ian Crawford, Thomas Cast, “Purification, Stability, and Structural Studies of CT610: A novel Enzyme Involved in *p*-Aminobenzoic Acid Biosynthesis in *Chlamydia trachomatis*.” Faculty mentor: Kylie Allen.

Oral presentation presented at the 26th Annual Murdock College Science Research Conference,
Co-host Institution - Whitworth University, Spokane, Washington, November 10 - 11, 2017

Ashley Beausoleil and Aleksei Gendron; “Investigation of Genes Involved in Compatible Solute Biosynthesis in *Methanococcus maripaludis*.” Faculty mentor: Kylie Allen.

Research posters presented at the 26th Annual Murdock College Science Research Conference,
Co-host Institution – Whitworth University, Spokane, Washington, November 10 – 11, 2017

Lisa DePledge, Clay Fuqua (Indiana University), “An investigation of a novel pathway regulating biofilm formation in the plant pathogen, *Agrobacterium tumefaciens*.” Faculty mentors: Kylie Allen and Nathan Feirer (Indiana University).

Megan Zimbelman, Thomas Cast, Ian Crawford, “Elucidation of the Role of CT610 in the Folate Synthesis Pathway in *Chlamydia trachomatis*.” Faculty mentor: Kylie Allen.

Annalise Rogalsky, Chad Hicks, “Evolution of Morpheein Behavior in Bacterial HMG-CoA Reductase.” Faculty mentor: Jeff Watson.

Aleksei Gendron, and *Ashley Beausoleil*, “Identification of a Modified Coenzyme F430 in *Methanococcus maripaludis* and *Methanosarcina acetivorans*.” Faculty mentor: Kylie Allen.

Chad Hicks, “Resurrecting Common Ancestors to Study Evolution of HMG-CoA Reductase.” Faculty mentor: David G. Lynn.

Hanna Clements, “Developing Peptide Metallo-Cages.” Faculty mentor: Masaomi Matsumoto.

Bridget Hoag, Dianna Karlova, “Development of Europium (III) Complexes with improved PARACEST MRI and Luminescence Properties.” Faculty mentor: Osasere Evbuomwan.

Zach Steinberg, “Investigating the Removal of Bound Water on the MRI and Luminescence Properties of Lanthanide Complexes.” Faculty mentor: Osasere Evbuomwan.

Kara Gallo, Lydia A. Rush, Kyle S. Stumetz, Ismael A. Rodriguez Perez, Rahale Getnet, “Potential Non-statistical Dynamics for the Allene Oxide to Cyclopropanone Conversion.” Faculty mentor: Matthew Cremeens.

Research posters presented at the 15th Annual Spokane Intercollegiate Research Conference,
Whitworth University, Spokane, Washington, April 28, 2018

Jon Reid, “Effect of Amide-substituent Position on the Magnetic Resonance Imaging (MRI) and Optical Properties of Quinoline-sensitized Europium (III) Complexes.” Faculty Sponsor: Osasere Evbuomwan.

Jenna Valentine, Ryan Meehan, and Shane O’Brien, “Mitigating Dioxin Formation from Lignocellulose Combustion: An Experimental and Computational Approach.” Faculty Sponsor: Matthew Cremeens.

Louisa Reilly, “Developing a Lactate Analogue for Use as a PET Tracer in the Brain to Detect Alzheimer’s.” Faculty Sponsor: Stephen Warren.

Classical Civilizations

Whitney Bolibol The Frederic Schlatter, S.J. Book Award, for her high level of academic achievement and enthusiasm for Classics.

Annual Northwest Undergraduate Conference on the Ancient World (NUCAW)
Willamette University, Salem, Oregon, April 21, 2018

Cole Fairbairn presented “Ramifications of Governmental Structures in the *Iliad*.” Dr. Eunice Kim, was his faculty mentor. Cole examined the contrasting leadership structures of both the Greeks and Trojans in the *Iliad*, arguing that the political dichotomy of the two armies directly correlates with how decision-making on the battlefield plays out in the Trojan War. Cole’s presentation was a great success and he fielded difficult and insightful questions on Homeric poetry and ancient political theory from the audience, which consisted of both students and faculty from Willamette University, University of Oregon, Reed College, Portland State University, University of Puget Sound, and University of Washington. Cole intends to apply to graduate programs in Political Science and Classics.

Gonzaga’s chapter of Eta Sigma Phi (the Theta Xi chapter), founded in 2007 under the advisorship of Ken Krall SJ, was reactivated this academic year, under the direction of Dr. Nicholas Kauffman.

Student members for AY 2017-18:

Whitney Bolibol; *Elena Chiappe* (incoming president); *Molly Foster* (outgoing vice president); *Sarah Godbehere*; *John Hansen* (outgoing treasurer); *Connor Heffernan* (outgoing president); *Rebecca Krempasky* (incoming co-vice-president); *Kate McKern* (incoming secretary); *Sarah Miceli* (incoming co-vice-president); *Finola Murphy*; *Megan Seifert*; and *Taylor Tyrell* (incoming treasurer).

The Classics Club, with Dr. Andrew Goldman as advisor, sponsored or co-sponsored (with the Classical Civilizations department) a number of activities on- an off-campus, including Bowling in Togas, the Homerathon (ZagFam Weekend), a Trivia Night (in partnership with SpikeNites), the annual book sale (raised \$400), and Poetry by the Pond. Society officers: *Sarah Godbehere* (Consul), *Samuel Redline* (Praetor), *Kaitlynn Stirling* (Proconsul), and *Connor Heffernan* (Quaestor).

History

The following History majors presented their research at the Pacific Northwest Region Phi Alpha Theta Conference: *Madison Schreiter*; *Abigail Williams*; *Jack Murray*; *Rosalie Sherry*; *Lauren Meany*; *Andrew Steward*; and *Adrian Ullrich*.

Adrian Ullrich earned the annual Phi Alpha Theta Award for 2017-18.

Eighteen students joined Gonzaga's chapter of Phi Alpha Theta.

Several History majors were accepted to graduate school, law school, or service/teaching programs, including *Adrian Ullrich*, *Gabriella Anselmo*, *Abigail Williams*, and *Adriana Marrero*.

Integrated Media

<i>Ariana Agnew</i>	Internships: Spokane Valleyfest / Meals on Wheels, Spokane
<i>Jasmine Albinson</i>	Internships: Because There is Hope / Desautel Hege
<i>Kendra Andrews</i>	Internship: The Washington Post, Washington, D.C. National Black Journalists Association 2018 Fellowship
<i>Abby Bordewick</i>	Internship: MoJo Lab
<i>Franny Boyle</i>	Internship: Schweitzer Engineering Lab
<i>Jared Brown</i>	Pacific Northwest News Association 2018 Fellowship Society of Professional Journalists Region 10 Mark of Excellence Award
<i>Eden Laase</i>	Finalist, College Division, Best All-Around Non-Daily Student Newspaper
<i>Megan Carroll</i>	Internship: KREM-TV Social Media & Web Intern
<i>Ellie Davidson</i>	Internship: The Santa Fe Opera
<i>Ian Davis-Leonard</i>	Washington Newspaper Publishers Association 2018 Fellowship Internship: Mukilteo, WA Beacon
<i>Hannah Eoff</i>	Internships: Jaime Johnson Events and Chapter & Verse, Spokane.
<i>Amy Falla</i>	Franz & Ann Schneider Writing Award Internships: MoJo Lab Studio / Providence Health Care Foundation
<i>Alexandra Goulet</i>	Internship: Catholic Charities
<i>Madeline Hummel</i>	Internship: Goodwill Industries, Spokane
<i>Sidney Jones</i>	Internship: Washington State Senator Patty Murray's press office, Washington D.C.
<i>Katie Kales</i>	Society of Professional Journalists Region 10 Mark of Excellence Award Finalist, College Division/Small Newspapers, Feature Writing Society of Professional Journalists Region 10 Mark of Excellence Award Finalist, College Division/Small Newspapers, General News Writing

<i>Elizabeth Kamrowski</i>	Pacific Northwest Newspaper Association 2018 Fellowship Internship: The Spokesman-Review Society of Professional Journalists Region 10 Mark of Excellence Award Finalist, College Division, General News Photography Society of Professional Journalists Region 10 Mark of Excellence Award Finalist, College Division, Sports Photography
<i>Sabrina Khoury</i>	Internship: Dutch Bros Social Media Intern, Spokane
<i>Jack Kieswetter</i>	Society of Professional Journalists Region 10 Mark of Excellence Award Finalist, College Division, General News Photography
<i>Jacque Larson</i>	Internship: Center for Cura Personalis Social Media/Marketing Intern
<i>Paul Leonetti</i>	Internship: C+C Environmental PR, Seattle
<i>Erin McDermott</i>	Internships: GU Marketing & Community Public Relations
<i>Madeline McReynolds</i>	Internships: Seattle Theater Group / YMCA Inland Northwest
<i>Silas Melson</i>	Internship: Boys and Girls Club
<i>Justin Reed</i>	Society of Professional Journalists Region 10 Mark of Excellence Award Finalist, College Division/Small Newspapers, Sports Writing
<i>Cameron Summers</i>	Internship: Macmillan Publishing
<i>Karen Suziki</i>	Internship: Williston State College (N. Dakota) PR Intern
<i>Joseph Thompson</i>	Internship: The Everett (WA) Herald Society of Professional Journalists Region 10 Mark of Excellence Award Finalist, College Division/Small Newspapers, General News Writing
<i>Tara Tormey</i>	Internship: 2nd Harvest Foodbank

Mathematics

Faculty Research Advisors Vesta Coufal and Kate Kearney:

Bailey Englin, Rusty Ford, Rachael Kuhn, “Klein Links and Braids,” April 7, 2018, Pacific Inland Mathematics Undergraduate Conference (PiMUC), Gonzaga University, Spokane, WA

Bailey Englin, Rusty Ford, Rachael Kuhn, “Klein Links and Braids,” April 28, 2018, Spokane Intercollegiate Research Conference (SIRC), Whitworth University, Spokane, WA

Bailey Englin, Rusty Ford, “Klein Knots and Braids,” October 2017, ZagFam Weekend, Gonzaga University, Spokane, WA

Bailey Englin, Rusty Ford, Rachael Kuhn, “Klein Links and Braids,” April 13, 2018, Math 360 Mathematics Seminar, Gonzaga University, Spokane, WA

Faculty Research Advisor Richard Cangelosi:

Joseph Kincannon, “Stability of the Nash Equilibrium in a Cournot Model for Company Output,” October 4, 2017, Spokane Regional Mathematics Colloquium, Gonzaga University, Spokane, WA

Joseph Kincannon, “Stability of the Nash Equilibrium in a Cournot Model for Company Output,” October 2017, ZagFam Weekend, Gonzaga University, Spokane, WA

Joseph Kincannon, “A Mathematical Model for Duopoly Pricing,” September 2017, Gonzaga Mathematics Club, Gonzaga University, Spokane, WA

Lydia Pane, “A Model for Immune System Response to Tumor Growth,” January 2018, Gonzaga Mathematics Club, Gonzaga University, Spokane, WA

Bailey Englin, “The Forced Van der Pol Oscillator as an Economic Model for the Nonlinear Accelerator Principle,” January 2018, Gonzaga Mathematics Club, Gonzaga University, Spokane, WA

Eli Dawson, “The Chaotic Behavior of the Double Pendulum,” January 2018, Gonzaga Mathematics Club, Gonzaga University, Spokane, WA

Lydia Pane, Kyle Black, Emilie Pratt, “Unravelling the Lynx-Hare Paradox-Updated Results,” April 7, 2018, Pacific Inland Mathematics Undergraduate Conference (PiMUC), Gonzaga University, Spokane, WA. Awarded the Best Presentation at PiMUC

Trent DeGiovanni, Joseph Kincannon, Elijah Michaelson, “Stability of the Nash Equilibrium,” April 7, 2018, Pacific Inland Mathematics Undergraduate Conference (PiMUC), Gonzaga University, Spokane, WA

Lydia Pane, Kyle Black, Emilie Pratt, April, “Who’s Eating Whom? The Lynx-Hare Paradox,” April 21, 2018, Pacific Northwest Section Meeting of the Mathematical Association of America, Seattle University, Seattle, WA

Trent DeGiovanni, Joseph Kincannon, Elijah Michaelson, “Chaos in a Cournot-Puu Duopoly Model,” April 21, 2018, Pacific Northwest Section Meeting of the Mathematical Association of America, Seattle University, Seattle, WA

Taha F. Hakkani, “A Mathematical Analysis of Sleep Cycles and Circadian Rhythms,” April 28, 2018, Spokane Intercollegiate Research Conference (SIRC), Whitworth University, Spokane, WA

Lydia Pane, “The Dynamics of Tumor Growth,” April 28, 2018, Spokane Intercollegiate Research Conference (SIRC), Whitworth University, Spokane, WA

Bailey Englin, “The Forced Van der Pol Oscillator as an Economic Model for the Nonlinear Accelerator Principle,” April 28, 2018, Spokane Intercollegiate Research Conference (SIRC), Whitworth University, Spokane, WA

Eli Dawson, “The Chaotic Behavior of the Double Pendulum,” April 28, 2018, Spokane Intercollegiate Research Conference (SIRC), Whitworth University, Spokane, WA

Elijah Michaelson, “Analysis of a Genetic Toggle Switch,” April 28, 2018, Spokane Intercollegiate Research Conference (SIRC), Whitworth University, Spokane, WA

Faculty Advisors Katharine Shultis and Jason Lutz:

Hannah Tolson, “Pentagon to Square: The Most Efficient Way to Transform one Polygon to Another,” January 27, 2018, Nebraska Conference for Undergraduate Women in Mathematics, University of Nebraska, Lincoln, NE

Trent DeGiovanni, “Most Economical Common Dissection of a Square and Equilateral Triangle,” June 18, 2017, Pacific Northwest Section Meeting of the Mathematical Association of America, Gonzaga University, Spokane, WA

Trent DeGiovanni, “Most Economical Common Dissection of a Square and Equilateral Triangle,” August, 2017, MathFest National Meeting of the Mathematical Association of America, Chicago, IL
Awarded the Council for Under Graduate Research (CUR) Award for Best Pi Mu Epsilon Student Research Presentation

Trent DeGiovanni, “Most Economical Common Dissection of a Square and Equilateral Triangle,” October 4, 2017, Spokane Regional Mathematics Colloquium, Gonzaga University, Spokane, WA

Faculty Advisors Thomas McKenzie and Kevin Henrickson (Economics):

Joseph Kincannon, “Income Inequality Among Professors,” June 18, 2017, Pacific Northwest Section Meeting of the Mathematical Association of America, Gonzaga University, Spokane, WA

Physics

Hank Thurston one of our recent graduates, has been admitted to Michigan State University, Indiana University, LSU, Ohio U, University of Arizona, and South Dakota School of Mines. He has decided to attend Michigan State University.

Mitchell Swyt has been accepted to Colorado State University for physics graduate school.

Eric Engel has been accepted to Montana State University for physics graduate school.

Scott Campbell a freshman Physics major, has been awarded a GSRP position for summer 2018 and will work with Dr. Matthew Geske.

Crystal Murray-Weston a junior Physics major, has been awarded a GSRP position for summer 2018 and will work with Dr. Matthew Geske.

Bryce Makela a sophomore Physics major, was awarded a GSRP position for summer 2018 and will work with Dr. Adam Fritsch.

Psychology

Majors entering graduate programs in Fall of 2018

Kelsey Bajet (class of 2017): Masters, Applied Social Psychology, San Diego State University.

Angela Boulet Masters, Mental Health Counseling, Gonzaga University

Brennan Champaign (class of 2014): Masters, Mental Health Counseling, Gonzaga University.

<i>Alex Pardico</i>	Masters, Clinical Psychology, Pacific University
<i>Joseph Peanasky</i>	(class of 2016), University of Pennsylvania, Master's in Behavioral and Decision Sciences
<i>Allana Platt</i>	University of San Diego Law School
<i>Annalise Rogalsky</i>	Rush University, PhD in Neuroscience
<i>Elizabeth Stoddard</i>	Human Development and Family Sciences Program, University of Missouri
<i>Taylor Kirschenmann</i>	(class of 2017): Masters, School Counseling, Gonzaga University
<i>Teresa Derouin</i>	(class of 2017): Masters, Speech Pathology and Therapy with graduate assistantship that comes with full tuition waiver
<i>Jalene Herron</i>	(class of 2015): University of New Mexico, PhD in Clinical Psychology
<i>Michael Liuzzi</i>	Master's in Psychology, San Diego State University
<i>Samantha Nania</i>	Master's in Marriage and Family Counseling, Gonzaga University
<i>Zachary Oxford-Romeike</i>	(class of 2016) University of California, Los Angeles, PhD in Social Psychology
<i>Michael Orr</i>	(class of 2015) University of Houston, PhD in Clinical Psychology
<i>Bridget Quinlan</i>	(class of 2017) Masters, Speech Pathology and Therapy, Pacific University
<i>Elizabeth Stewart</i>	Masters in I/O Psychology, San Diego State University
<i>Katherine Stewart</i>	Master's in Clinical Mental Health Counseling, University of San Diego
	Senior majors entering competitive service positions
<i>Rebecca Bianchi</i>	Jesuit Volunteer Corps, Northwest
<i>Ciara Costanzo</i>	Jesuit Volunteer Corps, Cleveland OH
<i>Gerald Deocariza</i>	AmeriCorps, Los Angeles, CA
<i>Josh Jacobs</i>	Jesuit Volunteer Corps, Ashland, OR
<i>Megan Leary</i>	Good Shepherd Volunteers Program, Astoria, NY
	Students presenting research at APS, WPA or SIRC
<i>James Vair.</i>	"Cultural Tightness and Autism: Why the Diagnosis of Autism is so Prevalent in Japan." Poster presentation at WPA, Portland, 2018

Kelsey Bajet and Lauren Bouma. “Cultural Variability in the Construal of Moral Violations: A Situation Sampling Study.” Poster presentation at WPA, Portland, 2018

Nicholas Ensroth and Sam Preisinger. “Identifying the Sources of Person-Culture Mismatch: The Effect of Marginalizing Situations on the Deviation From Existing Cultural Norms.” Poster presentation at WPA, Portland, 2018

Nathan Huff. “Cue Validity in Complex Letter Matrices.” Poster presentation at APS, San Francisco, 2018

Josh Morales. “Loneliness in the Lives of Young College Students.” Poster presentation at APS, San Francisco, 2018

Michael Liuzzi and Alex Pardico. “Instagram: Perceptions and Moods.” Poster presentation at APS, San Francisco, 2018

Michael Liuzzi and Alex Pardico. “Friendship, Networks and Moods.” Presentation at SIRC, Spokane, Whitworth, 2018

Religious Studies

Graduating senior, *Allison Clapp*, received the Religious Studies Flannery Award

A junior religious studies major, *Isabel Gregorio*, has been accepted to participate in the ACE Program (Alliance for Catholic Education). She will go to Notre Dame this summer for training, be an ACE asset to the Gonzaga community her senior year, and then enter the ACE program upon graduating from Gonzaga, eventually earning a master’s degree.

Maryclare O’Brien-Wilson was accepted at Boston College, and was given full tuition, for their M.A. program in the School of Theology and Ministry.

Janine Warrington was accepted at many elite M.A. programs, with incredible funding offers, and has settled on the M.A. program at the Candler School of Theology and Ministry at Emory University, with full tuition.

Theatre and Dance

Region 7 Kennedy Center American College Theatre Festival (KCACTF)
February 19-23, Spokane, Washington

21 students participated in the Region 7 Kennedy Center American College Theatre Festival (KCACTF). Three Theatre & Dance faculty members, Suzanne Ostersmith, Kathleen Jeffs, and Charles M Pepiton taught classes as part of the festival’s Speaker Series.

In addition to attending a variety of workshops and performances, students had the opportunity to showcase their work in design, technical theatre, playwriting, acting, and directing tracks. Joining colleges and universities from around our region (Alaska, Washington, Oregon, Idaho, Montana, Wyoming, Colorado, Northern California and Nevada), GU students competed for scholarships and awards in performance, directing, and design. They also participated in workshops and shared new

methods and techniques in theatre. Theatre professionals from around the nation responded to the performances and projects of the regional participants.

We are pleased to announce the results of our student participation at KCACTF 2018:

The Kennedy Center American College Theatre Festival recognized *Grady Foster* in Scenic Design, *Regina Carrere* in Costume Design, and *Clint Bull* in Lighting Design with a Meritorious Achievement Award in their field. *Art Por Diaz* received the Planet Earth Award in Playwriting. *Matthieu Boss* received a Meritorious Achievement Award in Scenic Design. KCACTF also recognized *Nathan Patrick Nelson* and *Jacqueline Bertagnolli* for their excellence in acting for tick, tick...BOOM! and was nominated for the regional acting award, Irene Ryan Acting Scholarship.

Courtney Smith continues to serve as the Next Step Coordinator for the Kennedy Center American College Theatre Festival (KCACTF). Next Step offers participants of KCACTF a wonderful opportunity to take the next step in their educational or professional growth with this chance to be seen and heard by professional theatre companies, casting directors, BA and BFA schools, as well as graduate and summer training programs. Jobs, internships, summer work, 4 year schools and graduate programs are represented at the auditions and interviews. This position allows Courtney to be immersed in the most current events within the theatre world.

Students who attended KCACTF:

Saeed Al-Thumali
Jacqueline Bertagnolli
Matthieu Boss
Clint Bull
Regina Carrere
Emily Davidson
Jaron Fuglie

Madison Hendricks
Madeline Keckler
Kelly Kern
Jackie Lozaw
Daniel Martin
Kevin McCarthy
Cooper McCoy

John Murphy
Annika Perez-Krikorian
Nathan Patrick Nelson
Bridget Pretz
Tessa Senger
Carson Stowell
Emma VanderWeys

Northwest Regional Conference of the American College Dance Association (ACDA),
University of Colorado at Boulder

Students traveled with Professor Suzanne Ostersmith to the Northwest Regional Conference of the American College Dance Association (ACDA) at the University of Colorado at Boulder. While there, students participated in a variety of workshops, classes and concerts. *Journey to Enlightenment* choreographed by student *Lindsay Gaardsmoe* presented in the Informal Concert and gave 11 students the opportunity to perform at ACDA for the first time. *Beautiful Weapons* performed during one of the presentation sessions and the excerpt *BioDivertissement* by Suzanne Ostersmith, was presented to the conference. A panel of professionals from around the country provided a public response to the work.

Students who attended ACDA:

Suzanna Bilderback
Kayla Crow
Emily Earnshaw
Corinne Fukunaga
Lindsey Gaardsmoe
Carly Goodspeed

Liz Helmer
Martina Hunt
Audrey Parks
Mikaela Perry
Emily Provan
Olivia Sands

Sydney Skinner
Kalleigh Wagner
Erin Walker
Jane Wybeng