



JESSICA E. PACKARD

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EDUCATION

PhD Duquesne University August 2019 to Present

Second Year Biological Sciences Ph.D. Candidate

Written and Oral Qualifying Exam Passed: June 1, 2020 with no revisions

BS Saint Vincent College May 2019

Major: Biology with a concentration in Cellular and Molecular Biology

GPA: 3.83

PUBLICATIONS

HSV-1 DNA Replication – Coordinated Regulation of Viral and Cellular Factors

Jessica E. Packard and Jill A. Dembowski

Viruses, Accepted October 4, 2021

Antiviral Properties of the LSD1 Inhibitor SP-2509

Mitchell R. Harancher, Jessica E. Packard, Shane P. Cowan, Neal A. DeLuca, and Jill A. Dembowski

Journal of Virology, Accepted July 16, 2020

Limited carbon sources prevent sulfate remediation in circumneutral abandoned mine drainage

Michelle M. Valkanas, Taylor Rosso, Jessica E. Packard, and Nancy J. Trun

FEMS Microbiology Ecology, Accepted February 5, 2021

GRANTS AND FELLOWSHIPS

Bayer Fellowship - \$27,000

Awarded for May 2021 until May 2022 at Duquesne University

SCHOLARLY PRESENTATIONS AT NATIONAL AND REGIONAL MEETINGS

Selected Oral Presentations

Identifying Cellular and Viral Factor Recruitment to Herpes Simplex Virus Type 1 Replication Forks

Jessica Packard and Jill Dembowski

Selected Spotlight Oral Presentation -- Experimental Biology 2022, Philadelphia, PA

April 1-5th, 2022

PCNA Inhibitor Impedes HSV-1 DNA Replication

Jessica Packard and Jill Dembowski

ABASM 2021 – *First Place in Oral Presentations*

November 13, 2021

PCNA Inhibitor Suppresses HSV-1 DNA Replication

Jessica Packard and Jill Dembowski

ASV 2021

July 23, 2021

PCNA Inhibitor Suppresses HSV-1 DNA Replication

Jessica Packard and Jill Dembowski

2021 Graduate Student Research Symposium, Duquesne University, PA

March 8, 2021

Driving Sulfate Reduction in Abandoned Coalmine Drainage

Jessica Packard, Michelle M. Valkanas, Nancy J. Trun

2019 Student Symposium on the Environment, Westminster College, PA

December 5, 2019

Oral Presentations

Defining the Role of PCNA in HSV-1 DNA Replication

Jessica Packard

Duquesne University Biological Sciences Departmental Seminar

December 15, 2021

PCNA Inhibitor Suppresses HSV-1 DNA Replication

Jessica Packard and Jill Dembowski

Duquesne University's Weekly Seminar on February 12, 2021

Poster Presentations

Identifying Cellular and Viral Factor Recruitment to HSV-1 Replication Forks

Jessica Packard and Jill Dembowski

2022 Graduate Student Research Symposium, Duquesne University, PA

March 18, 2022

Cellular Proliferating Cell Nuclear Antigen Associates with Replicating HSV-1 DNA and is Required for Efficient Viral DNA Replication

Jessica Packard, Maya Williams, and Jill Dembowski

Poster Presentation at the International Herpesviruses Workshop 2021, Online Conference

August 2-6, 2021

LSD1 Inhibition Suppresses HSV-1 DNA Replication and Gene Expression

Jessica Packard, Mitchell Haranchar, and Jill Dembowski

2020 Graduate Student Research Symposium, Duquesne University, PA

March 20, 2020 – CANCELLED DUE TO COVID-19

INVITED TALKS AND PRESENTATIONS

Invited Speaker to Undergraduate Women in Science Meeting

Online Discussion at Duquesne University, PA
November 2021

HSV-1 Hijacks Cellular DNA Replication Machinery

Online Oral Presentation at California University of Pennsylvania
October 21, 2020

Saint Vincent College Alumni Graduate School Advice Panel

Online Panel Presentation at Saint Vincent College, PA
November 10, 2020

TEACHING AND MENTORING EXPERIENCE

Teaching at Duquesne University

2019: General Biology Laboratory 1: BIOL111
2020: General Biology Laboratory 2: BIOL112
2020: Experimental Microbiology and Molecular Biology 1: BIOL370W

Mentoring at Duquesne University

Ph.D. Students Rotating in the Dembowski Lab

- Joseph Heath (September 2020-December 2020)
- Meghan Wells (January 2021-March 2021)

Undergraduate Members of the Dembowski Lab

- Holly Barwatt (2020-2021)
 - Virtual Poster Presentation: "Role of Topoisomerase 2B in Herpes Simplex Virus Infection Process" at the 2020 Duquesne University's Summer Undergraduate Research Program
- Raegen Esenwein (2020-2023)
 - Virtual Poster Presentation: "The Role of TOP1 in Herpes Simplex Virus Infection" at the 2020 Duquesne University's Summer Undergraduate Research Program
 - Virtual Poster Presentation: "The Role of Topoisomerase 1 in Herpes Simplex Virus Infection" at the 2021 Regional BBB Conference – First Place Poster Presentation Awardee
- Maya Williams (2020-2023)
 - Virtual Poster Presentation: "Investigation of PCNA Function During Herpes Simplex Virus Infection" at the 2020 Duquesne University's Summer Undergraduate Research Program
- Nathaniel Boeckman (2020-2023)
- Julia Gibson (2021-2023)

Undergraduate Mentorship Program

- Olivia Price (2020-2021)

First Year PhD Student Mentorship Program

- Anna Manges (2020-2021)

PROFESSIONAL DEVELOPMENT: TEACHING

2021: Grading Efficiently Workshop
2021: In it Together: Retention Minded Teaching
2021: Equitable Environments: Identifying and Addressing Trauma Across Three Aspects of the Academic Environment
2021: Balancing Teaching and Research
2021: Trauma-Informed Feedback by Building "Islands of Competence"
2020: Learning from Academic Dishonesty
2020: Spiritan Pedagogy Conversation
2020: Winning Ideas and Tips on Preparing a Teaching Award Submission
2020: Writing a Philosophy of Teaching
2020: What Students are Saying About HyFlex
2020: Engaging Students with Learning Activities
2020: REMOTE: the Connected Faculty Summit
2020: Universal Design for Learning (UDL) Workshop
2020: Developing a CV, Cover Letter, and Research Statement Workshop
2019: Developing a Teaching Portfolio Workshop
2019: How Humans Learn Workshop
2019: "5 Reasons to 'Flip' Your Classroom Using a 'Sidecar'" Workshop
2019: Evidence Based Practices for Everyday – Peer Instruction Workshop

SCIENTIFIC COMMUNITY SERVICE

July 2021: Poster Judge for the Undergraduate Research BBB Biological Honor Society Conference
August 2021: Moderator for Duquesne University's Summer Undergraduate Research Program Conference
June 2021-August 2021: Volunteer for the NSF Sponsored Undergraduate Research Experience CIRCLE Program at Duquesne University
March 2022: Volunteer Judge for the Pittsburgh Regional Science and Engineering Fair at the Carnegie Science Center

PROFESSIONAL DEVELOPMENT: SCIENCE COMMUNICATION

August 2020: Phipps Conservatory and Botanical Gardens Science Communication Fellowship

PROFESSIONAL DEVELOPMENT: SCIENTIFIC DEVELOPMENT

October 21st and 22nd 2020: Attended the Online Workshop, "[Modern Approaches to Studying Virus-Host Interactions](#)" hosted by the Working Group 'Cell Biology of Viral infections' of the Gesellschaft Für Virologie

AWARDS, ACKNOWLEDGMENTS, AND LEADERSHIP ROLES

President of the Graduate Student Organization of the Biological Sciences

2021-2022

At Duquesne University, I am the president of a graduate student organization that organizes professional and social events, hosts invited speakers to give seminars and take part in various events throughout the year. Our efforts ensure that the interests of the students are advanced by working closely with departmental faculty and staff.

Vice President of the Graduate Student Organization of the Biological Sciences 2020-2021

At Duquesne University, I am the president of a graduate student organization that organizes professional and social events, hosts invited speakers to give seminars and take part in various events throughout the year. Our efforts ensure that the interests of the students are advanced by working closely with departmental faculty and staff.

UNDERGRADUATE: AWARDS, ACKNOWLEDGMENTS, AND LEADERSHIP ROLES

C'68 Father Ronald Gorka Scholarship Recipient 2018

A character, values, and leadership-based scholarship awarded to one student at Saint Vincent College. Through extensive essays and interviews, the scholarship board awarded one student this \$12,000 scholarship for their commitment to the school and community.

Two-Time Awardee of the Leadership and Service Award 2017 and 2018

Two-time awardee of the Leadership and Service Award at Saint Vincent College for students in their junior and senior year who hold leadership roles and participate in service around their community.

Dean's List Recipient 2015 to 2019

Been named to the Dean's List of Saint Vincent College for the Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2017, Spring 2018, Fall 2018, and Spring 2019 Semesters.

Alpha Lambda Delta National Honor Society 2015 to 2019

Inducted into the Alpha Lambda Delta National Honor Society at Saint Vincent College for students with at least a 3.50 GPA after the first semester of their freshman year. Service opportunities included fundraising for the Susan G. Komen for the Cure Foundation, mental health awareness, women's shelters, and food pantries.

Beta Beta Beta Biological Honor Society 2017 to 2019

Inducted into the Upsilon Gamma Chapter of the Beta Beta Beta Biological Honor Society at Saint Vincent College for students who show exemplary work in the biological sciences. For the 2018-2019 school year, I will also be representing the Upsilon Gamma Chapter as secretary.

Alpha Chi National Honor Society 2017 to 2019

Inducted into the Alpha Chi National Honor Society at Saint Vincent College for students in the top ten percent of their class. For the 2018-2019 school year, I will be representing the Saint Vincent Chapter as vice president.

Gamma Sigma Epsilon Chemistry Honor Society 2018 to 2019

Inducted into the Gamma Sigma Epsilon Chemistry Honor Society at Saint Vincent College for students who show exemplary work in their chemistry courses.

Women in STEM Club 2018 to 2019

The founder and president of the Women in STEM Club at Saint Vincent College. The purpose of the club is to build a community amongst all women in every discipline within the science, technology, engineering, and math fields to foster love for the sciences on and off campus.

Cheerleading 2015 to 2019

A member of the Saint Vincent College Cheerleading team from freshman year to senior year. For the 2016-2017 and 2017-2018 school year, I represented the Cheerleading team as the Orientation chair. Here, I helped teach new cheerleaders the dances, cheers, and chants for that will be used throughout the year. For the 2018-2019 school year, I will be representing the Cheerleading team as secretary.

Catholic Relief Services Ambassador 2018 to 2019

A representative of Saint Vincent College's Catholic Relief Services. Here, I take note of different global and communal issues including global warming, climate change, water pollution, and human trafficking. Here, we organize fundraisers and hold events to increase awareness of said topics.

Orientation Committee

2016 to 2018

A member of the orientation committee at Saint Vincent College from sophomore to senior year. As a member, I helped moved the new freshmen students into their dorms, gave them a tour of campus, and acted as a mentor during their first year.

RESEARCH EXPERIENCE (UNDERGRADUATE)

Undergraduate Thesis: The Effects of Caffeine on Embryonic Heart Development in Zebrafish

Advisor: Brother Albert Gahr, PhD

Saint Vincent College, Latrobe, Pennsylvania

2018-2019

Starting the Spring Semester of my junior year, I began my personal three-semester long research experiment. In doing so, I have developed my own thesis, read the literature, designed my own experiment, and will perform statistical analysis. I am currently testing the effects that caffeine has on embryonic heart development in *Danio rerio* as a model to human heart development. Caffeine was applied to three different experimental groups: 24-hours post spawn, 36-hours post spawn, and 48-hours post spawn. The concentration that was applied to each group was fixed to the amount of caffeine an average adult human female ingests per day: 250 mg/day. Six weeks post hatch, I homogenized the fish samples, isolate the RNA components, performed real time PCR, and gene expression

Assistant Researcher, Advisor: Dr. Jennifer Koehl

2017-2018

Saint Vincent College, Latrobe, Pennsylvania

I worked alongside Dr. Koehl and one of her research students to test the inhibiting potential of antibiotic and natural remedies against axillary odor using *Staphylococcus epidermidis* and *Corynebacterium jeikeium*. Through this experiment, I have developed skills of aseptic technique, streak plating, Kirby-Bauer, and MIC tests.

Assistant Researcher, Advisor: Dr. Jennifer Koehl

2016-2017

Saint Vincent College, Latrobe, Pennsylvania

I worked alongside Dr. Koehl and one of her research students to test the antimicrobial effects of lemongrass and tea tree oil on methicillin-resistant *Staphylococcus aureus* (MRSA) and methicillin-susceptible *Staphylococcus aureus* (MSSA). The use of essential oils allowed for a natural remedy over the use of antibiotics.

INTERNATIONAL COMMUNITY SERVICE

Guatemala City, Guatemala, May 5th to May 13th, 2018

My week was spent in Guatemala City Zone 3, a place forgotten by tourists and adamantly avoided by Guatemalans. Zone 3 homes the Basurero (Garbage Dump) and the city's cemetery. The 40 acres of land houses over a third of the country's waste through recyclables, trash, and miscellaneous food items. I volunteered at Francisco Coll Elementary School which provides free education of the children of the parents who work in the landfill. Many of the students that attend are exposed to drugs, gang violence, and suffer from toxic pollutants being emitted from the dump. While there, I played with the students, assisted the teachers, and helped repaint buildings for their new nutrition program.