CURRICULUM VITAE

# *Anna María Groat Carmona*

## PERSONAL


Science and Mathematics Division
School of Interdisciplinary Arts and Sciences
University of Washington, Tacoma
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## EDUCATION

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| 2012 – 2015 | **Postdoctoral Scientist,** *Center for Infectious Disease Research,* Seattle WA. |
| 2011 – 2012 | **Postdoctoral Senior Fellow,** Department of Global Health, *University of Washington,* Seattle WA. |
| 2006 – 2011 | **Ph. D.** Infectious Diseases and Immunology, *University of California Berkeley,* Berkeley CA. |
| 2002 – 2006 | **B. A.** Biology, *Reed College,* Portland OR. |
| Languages | Fluent in English and Spanish, Basic Portuguese and French. |
| Technology | • *Operating Systems:* Windows (10, 7/8, Vista, XP), Mac OS.<br>• *Software:* Microsoft Office Suite, Adobe Premiere Elements, Adobe Photoshop, Canvas X, EndNote.<br>• *Bioinformatics Platforms:* NCBI, Clustal Omega, RNAalifold, RNA/DNAfold (mFold).<br>• *Other:* BioRender, PowToon, ApE, SnapGene, Pymol, ImageJ, FlowJo, MStat. |

## PROFESSIONAL EXPERIENCE

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| 2023 - 2024 | **Visiting Professor**, Departamento de Ingeniería de Procesos y Ciencias Ambientales, *Universidad Centroamericana José Simeón Cañas*, Antiguo Cuscatlán La Libertad, El Salvador. |
| 2020 - Present | **Visiting Professor**, Center for Global Infectious Disease Research, *Seattle Children's Research Institute*, Seattle WA. |
| 2018 - Present | **Assistant Professor (Cellular Biology)**, Sciences and Mathematics Division (Biomedical Sciences), *University of Washington Tacoma*, Tacoma WA. |
| 2017 & 2018 | **Curriculum Coordinator (STEM Survival Skills)**, Math Science Upward Bound, *University of Washington*, Seattle WA. |
| 2017 - 2018 | **Curriculum Co-Coordinator (Becoming a Student of Science)**, Biology Department, *Western Washington University*, Bellingham WA (Funded through HHMI). |
| 2015 - 2018 | **Lecturer (Biology)**, Biology Department, *Western Washington University*, Bellingham WA. |
| 2015 - 2016 | **Freelance Editor**, Center of Excellence for Biochemistry, Genetic and Molecular Biology, *Cactus Communications*, Trevose PA. |
| 2011 | **Staff Research Associate I**, Infectious Diseases and Immunology Division, *University of California Berkeley*, Berkeley CA. |
| 2005 & 2006 | **Notetaker (Cellular Biology, Genetics and Gene Regulation, Plant Physiology)**, Biology Department, *Reed College*, Portland OR. |
| 2003 - 2006 | **Biology Greenhouse Assistant**, Biology Department, *Reed College*, Portland OR. |
| 2002 - 2006 | **Biology Stockroom Student Manager**, Biology Department, *Reed College*, Portland OR. |

## TEACHING EXPERIENCE

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| 2023 - 2024 | **Visiting Professor**, Departamento de Ingeniería de Procesos y Ciencias Ambientales, *Universidad Centroamericana José Simeón Cañas*, Antiguo Cuscatlán, La Libertad, El Salvador. Taught faculty workshops that were centered on the use of molecular biology techniques within undergraduate lab courses as well as how these techniques can be used to expand upon existing faculty research efforts. |
| 2018 - Present | **Assistant Professor (Cellular Biology)**, Sciences and Mathematics Division (Biomedical Sciences), *University of Washington Tacoma*, Tacoma WA. Courses taught include Introductory Biology II (TBIOL130), Cellular Biology (TBIOL303), Immunology (TBIOL414), Foundations in Biomedical Sciences (TBIOMD310), Biomedical Sciences Senior Seminar (TBIOMD410) & Biomedical Research Experiences (TBIOMD495 and TBIOMD499). |

Courses are designed to provide undergraduate students with a solid foundation in molecular and cellular biology (and its application to infectious disease research and/or immunology), supported with hands-on laboratory experiences. Role requires supervising and training undergraduate TAs.

2015 – 2019, 2022 **Science Elective Instructor**, Math Science Upward Bound (MSUB), *University of Washington*, Seattle WA. Designed and implemented coursework for the MSUB six-week summer academy for underrepresented minority students (10-12$^{th}$ grade). Courses taught included Medical Microbiology & Immunology. Courses were designed to solidify the mechanics of central dogma, cellular biology and introduce students to key concepts in pathogenesis, immunology, and matters integral to Public Health.

2015 - 2018 **Biology Instructor**, Biology Department, *Western Washington University*, Bellingham WA. Courses taught included a seminar within the HHMI Inclusive Excellence Grant Advancing Excellence and Equity in Science (AEES) program (SEM101), Introduction to Cellular and Molecular Biology (BIO205), Methods in Molecular Biology (BIO324), Microbiology (BIO345) & Microbiology Lab (BIO346). Courses were designed to provide undergraduate students with a solid foundation in molecular and cellular biology as well as microbiology, supported with hands-on laboratory experiences. Role required supervising and training undergraduate and graduate TAs.

2013 – 2015 **BioQuest Academy Aid**, *Center for Infectious Disease Research*, Seattle WA. Provided lectures on malaria pathogenesis and vaccine research/design. Lead tour groups throughout the facility and aided preparations to promote diversity and interest in STEM fields to high school and middle school students.

2007 & 2010 **Graduate Student Instructor**, Infectious Diseases and Immunology Division, *University of California Berkeley*, Berkeley CA. Courses taught included Principles of Infectious Diseases Part I (PH260A), a survey course designed to give graduate students an in-depth examination of the etiology, epidemiology, pathogenesis, immunology and treatment of disease-causing microorganisms. Responsibilities included teaching lectures, leading a graduate seminar, providing out-of-class aid and assisting with reader preparation.

2005 & 2006 **Teaching Assistant**, Biology Department, *Reed College*, Portland OR. Courses taught included Cellular Biology (BIO372) & Developmental Biology (BIO351). Responsibilities included assisting with laboratory procedures and providing out-of-class aid.

## RESEARCH EXPERIENCE

2023 - 2024 **Fulbright Research Project:** Establishing a mosquito surveillance program to monitor the prevalence of vector-borne disease in northern El Salvador. **Dr. A. Groat Carmona** (Principal Investigator), Departamento de Ingeniería de Procesos y Ciencias Ambientales, *Universidad Centroamericana José Simeón Cañas*, Antiguo Cuscatlán, La Libertad, El Salvador.

2018 - Present **UW Tacoma Research Projects:** 1. Characterization of the functional role of the catalytic domain of the *Plasmodium* BEM46-like protein (PBLP) in parasite invasive-stage membrane morphogenesis. 2. Examination of the protein interactive network on the *Plasmodium* parasite plasma membrane during the mosquito- to liver-stage transition. 3. Examination of age-dependent maturation as it pertains to sporozoite infectivity in *Anopheles stephensi* mosquitoes. 4. Establishing a cell-free *in vitro* culturing system to study late liver-stage development of *Plasmodium yoelii* parasites. 5. Investigating the role of conserved coding-region regulatory RNA elements in modulating the dengue viral life cycle. 6. Establishing a mosquito surveillance program to monitor the incidence of vector-borne diseases throughout El Salvador. **Dr. A. Groat Carmona** (Principal Investigator), Sciences and Mathematics Division (Biomedical Sciences), *University of Washington Tacoma*, Tacoma WA.

2016 - 2018 **WWU Research Project:** 1. Investigation of the molecular mechanisms underlying the unique membrane morphogenesis of *Plasmodium* parasites during early liver-stage development. 2. Ecological dynamics of *Mycobacterium* phage assemblages. **Dr. A. Groat Carmona** (Principal Investigator), Biology Department, *Western Washington University*, Bellingham WA.

2012 – 2015 **CIDR Postdoctoral Projects:** 1. Characterization of previously unknown *Plasmodium* proteins that are important for asymptomatic liver-stage development using the *Plasmodium yoelii* mouse model. 2. Examination of age-dependent maturation as it pertains to sporozoite infectivity in *Anopheles stephensi* mosquitoes. 3. Determine the hepatocellular characteristics that facilitate pre-erythrocytic infection by promoting intracellular parasite survival. Dr. S. Kappe (Principal Investigator), *Center for Infectious Disease Research*, Seattle WA.

2011 – 2012 **UW Postdoctoral Project:** Understanding the RNase-sensitivity of HIV-1 capsid assembly intermediates. Dr. J. Lingappa (Principal Investigator), Department of Global Health, *University of Washington*, Seattle WA.

2007 –2011 **UC Berkeley Dissertation Project:** Investigating the role of conserved coding-region regulatory RNA elements in modulating the dengue viral life cycle. Dr. E. Harris (Principal Investigator), Infectious Diseases and Immunology Division, *University of California Berkeley*, Berkeley CA.

2006 **Merck Research Internship:** Understanding virulence: *in vitro* analysis of H-NS, Ler and SlyA mediated regulation of the *LEE5* regulatory region in enteropathogenic *Escherichia coli*. Dr. J. Mellies (Principal Investigator), Biology Department, *Reed College*, Portland OR.

2005 – 2006 **Reed College Senior Thesis:** Understanding virulence: *in vitro* analysis of H-NS and Ler mediated regulation of the *LEE5* regulatory region in enteropathogenic *Escherichia coli*. Dr. J. Mellies (Principal Investigator), Biology Department, *Reed College*, Portland OR.

2005 **Merck Research Internship:** Molecular mechanisms of *LEE5* transcription in enteropathogenic *Escherichia coli*: *in vitro* analysis of H-NS and Ler binding. Dr. J. Mellies (Principal Investigator), Biology Department, *Reed College*, Portland OR.

2004 **Howard Hughes Medical Institute Internship:** Translational control of the dengue viral genome: role of 3' untranslated region and conserved sequence 1. Dr. T. Dreher (Principal Investigator), Department of Microbiology, *Oregon State University*, Corvallis OR.

2003 – 2005 **Independent Research Projects:** Courses included Microbiology, Genetics, Animal Behavior and Behavioral Ecology, Developmental Biology & Cellular Biology. Biology Department, *Reed College*, Portland OR.

2002 **Field Assistant:** Seasonal variation of *Cecropia-Azteca* mutualisms in a neotropical dry forest. Dr. V. Carmona Galindo (Principal Investigator), *Organization for Tropical Studies at Palo Verde National Park*, Guanacaste, Costa Rica.

## PUBLICATIONS

*Manuscript in Preparation or Submitted for Publication:*

**A. M. Groat Carmona,** M. A. Velado Cano, A. M. Gonzalez Pérez, and V. D. Carmona Galindo *(ms re-submitted, under review)*. Sex-ratio distortion of *Aedes aegypti* (L.) in El Salvador: Implications for Urban Ecology and Biocontrol in Seasonally Dry Neotropical Biomes. *Diversity.*

J. Milovich, G. Bryam, R. Warren, and **A. M. Groat Carmona** (*ms in prep*). Current Allergen Immunotherapies.

**A. M. Groat Carmona**, K. Johnson, and V. D. Carmona Galindo *(ms in prep).* Ecological dynamics of *Mycobacterium* phage assemblages.

**A. M. Groat Carmona**, J. Yang, J. M. McPherson, A. Salim, D. Salim, H. Kain, W. Benz, S. Mikolajczak, and S. H. Kappe (*ms in prep).* The role of age-dependent maturation in the generation of infectious *Plasmodium* sporozoites.

**A. M. Groat Carmona**, K. Janis, T. Srimuang, J. Sheppard, A. Arvizo, B. Menefee, R. Kim, Z. Strome, K. Aguon, M. Seto, A. Malhi, K. Barker, M. Anderson, and P. Spiegel *(ms in prep).* Biochemical analysis of the *Plasmodium* BEM46-like protein (PBLP) and its role in parasite invasive-stage membrane morphogenesis.

**A. M. Groat Carmona** and J. Lingappa (*ms in prep*). Understanding the RNase-sensitivity of HIV-1 capsid assembly intermediates.

*Publications:*

V. D. Carmona Galindo, M. A. Velado Cano, and **A. M. Groat Carmona** (2025). The ecology of climate change: using virtual reality to share, experience, and cultivate local and global perspectives. *Education Sciences* **15**(3):290.

M. T. Nguyen, N. K. Samra, and **A. M. Groat Carmona** (2021). Circumventing HIV-1 immune evasion strategies: utilizing broadly neutralizing antibodies to bolster current drug treatments and develop novel vaccines. *BIOS* **92**(4):139-146.

L. Dahlberg and **A. M. Groat Carmona** (2018). CRISPR/Cas technology: in-and-out of the classroom. *The CRISPR Journal* **1**(2):99-100.

**A. M. Groat Carmona**, H. Kain, J. Brownell, A. N. Douglass, A. S. I. Aly, and S. H. Kappe (2015). A *Plasmodium* α/β-hydrolase modulates the development of invasive stages. *Cellular Microbiology* **17**(12):1848-1867.

**A. M. Groat Carmona,** S. Orozco, P. Friebe, A. F. Payne, L. D. Kramer, and E. Harris (2012). A novel coding-region RNA element modulates infectious dengue virus particle production in both mammalian and mosquito cells and regulates viral replication in *Aedes aegypti* mosquitoes. *Virology* **432**(2):511-526.

J. L. Mellies, A. M. S. Barron, and **A. M. Carmona** (2007). Enteropathogenic and enterohemorrhagic *Eschesrichia coli* virulence gene regulation. *Infection and Immunity* **75**(9):4199-4210.

**FUNDING**

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|---|---|
| 2023 | UWT Founders Endowment Award, *University of Washington Tacoma*, Tacoma WA. *Awarded ($4,000).* |
| 2023-2024 | Fulbright U.S. Scholar Program (12440-ES), *University of Washington Tacoma*, Tacoma WA. *Awarded ($30,850).* |
| 2022 | UWT Royalty Research Fund Award (A172997), *University of Washington Tacoma*, Tacoma WA. *Not Awarded.* |
| 2017 | WWU Office of Research and Sponsored Programs Mini Grant (MF1597), *Western Washington University*, Bellingham WA. *Awarded ($1,000).* |
| 2016 | NIH Academic Research Enhancement Award (AREA) R15 (1R15AI133347), *Western Washington University*, Bellingham WA. *Primary Submission (2016): Not Awarded. Revision (2017): Not Awarded.* |
| 2016 | WWU Office of Research and Sponsored Programs Pilot Project Grant, *Western Washington University*, Bellingham WA. *Not Awarded.* |
| 2016 | WWU Office of Research and Sponsored Programs Mini Grant (MF1521), *Western Washington University*, Bellingham WA. *Awarded ($1,000).* |
| 2014 | NIH/NIGMS Supplement to Promotion of Diversity in Health-Related Research Program (R01GM101183), *Center for Infectious Disease Research*, Seattle WA. *Awarded ($50,000).* |
| 2010 | NIH Research Project Grant R01 (R01AI052324), *University of California Berkeley*, Berkeley CA. *Not Awarded.* |
| 2004 | National Science Foundation Research Grant, *Oregon State University*, Corvallis OR. *Awarded ($3,500).* |
| 2003, 2004 & 2006 | Howard Hughes Medical Institute Research Grant, *Reed College*, Portland OR. *Awarded ($3,500).* |

**STUDENTS MENTORED IN RESEARCH**

2018 - Present **Dr. A. Groat Carmona** (Principal Investigator), Sciences and Mathematics Division (Biomedical Sciences), *University of Washington Tacoma*, Tacoma WA.

*Volunteers:*

- Hailey Sato (Undergraduate Researcher) – Ongoing (tenure began Autumn ’24)
- Amira Salim (Undergraduate Researcher) – Tenure (1/2019 – 12/2019)
- Daliah Salim (Undergraduate Researcher) – Tenure (1/2019 – 12/2019)

*Capstone Course (TBIOMD494) – Spring ‘25*

- Karri Russell (Undergraduate Researcher)

*Capstone Course (TBIOMD495) – Winter ‘25*

- Heily Chaires (Undergraduate Researcher) - Ongoing
- Jules Milovich (Undergraduate Researcher) – Ongoing
- Syd Falen (Undergraduate Researcher)
- Leon Fulginiti (Undergraduate Researcher)
- Tae Kim (Undergraduate Researcher)
- Daniel Rezk (Undergraduate Researcher)

*Global Honors Thesis Course (TGH494) – Winter ‘25*

- Mia Escobar (Undergraduate Thesis)

*Capstone Course (TBIOMD499) – Winter ‘24*

- India Grace (Undergraduate Researcher) – Ongoing (tenure began Summer ’21)

- Krysta Janis (Undergraduate Researcher) – Tenure (9/2023 – 6/2024)

*Capstone Course (TBIOMD499) – Autumn '23*

- Cory Dickson (Undergraduate Researcher) – Tenure ended Spring '24
- Melody Du (Undergraduate Researcher) - Tenure ended Spring '24
- Anastasia Latu (Undergraduate Researcher) - Tenure ended Spring '24
- Themsiri Srimuang (Undergraduate Researcher) - Tenure ended Spring '24

*Capstone Course (TBIOMD499) – Winter '23*

- Ayat Alkadban (Undergraduate Researcher) – Tenure (9/2022 – 6/2023)
- Carina Coalman (Undergraduate Researcher) – Tenure (1/2022 – 3/2023)

*Capstone Course (TBIOMD499) – Autumn '22*

- Jillian Sheppard (Undergraduate Researcher) – Tenure (9/2021 – 6/2023)
- Jamie Dahan (Undergraduate Researcher) – Tenure ended Spring '23
- Cindy Aprikian (Undergraduate Researcher) – Tenure ended Winter '23
- William Brown (Undergraduate Researcher) – Tenure ended Winter '23

*Capstone Course (TBIOMD494) – Spring '22*

- Yvette Tadeo (Undergraduate Researcher)

*Capstone Course (TBIOMD499) – Winter '22*

- Sabrina Bacher (Undergraduate Researcher) – Tenure (7/2021 – 6/2022)

*Capstone Course (TBIOMD499) – Autumn '21*

- Anjanette Arvizo (Undergraduate Researcher) – Tenure ended Spring '22

*Capstone Course (TBIOMD495) – Winter '21*

- Kaiya Stewart (Undergraduate Researcher) – Tenure ended Winter '22
- Kiara Wiggins (Undergraduate Researcher) – Tenure ended Winter '22
- Vanessa Begazo (Undergraduate Researcher)
- Rachel Ramirez (Undergraduate Researcher)
- Colleen Selness (Undergraduate Researcher)
- David Slattery (Undergraduate Researcher)
- Gurleen Toor (Undergraduate Researcher)

*Capstone Course (TBIOMD499) – Autumn '20*

- Caritina Sanchez (Undergraduate Researcher) – Tenure (1/2020 – 12/2021)
- Rachel Kim (Undergraduate Researcher) – Tenure ended Autumn '21
- John McPherson (Undergraduate Researcher) – Tenure (9/2018 – 12/2020)

*Capstone Course (TBIOMD499) – Spring '20*

- Britt Menefee (Undergraduate Researcher) – Tenure ended Spring '21

*Capstone Course (TBIOMD496) – Winter '20*

- Megan Bockman (Undergraduate Researcher)

*Capstone Course (TBIOMD499) – Autumn '19*

- Jeralee Yang (Undergraduate Researcher) – Tenure ended Spring '21
- Darrell Lockhart (Undergraduate Researcher) – Tenure (6/2019 – 6/2020)
- Zachary Strome (Undergraduate Researcher) - Tenure ended Spring '20

*Capstone Course (TBIOMD495) – Winter '19*

- Saddie Burkentine (Undergraduate Researcher) – Tenure ended Spring '20
- Koryn Aguon (Undergraduate Researcher) – Tenure ended Autumn '19
- Misaki Seto (Undergraduate Researcher) - Tenure ended Autumn '19

- Armann Gill (Undergraduate Researcher)
- Amy Morris (Undergraduate Researcher)
- Tracy Mwangi (Undergraduate Researcher)

2016 - 2018 **Dr. A. Groat Carmona** (Principal Investigator), Biology Department, *Western Washington University*, Bellingham WA.

- Michael Anderson (Undergraduate Researcher)
- Katherine Barker (Undergraduate Researcher)
- Caitlin BeeBe (Fairhaven Undergraduate Concentration Committee) - Dr. John Bower (Chair)
- Akashdeep Malhi (Undergraduate Researcher)
- Zoe Zilz (Graduate Researcher) - Dr. Ben Miner (Principal Investigator)

2015 - 2017 Dr. V. Carmona Galindo (Principal Investigator), Biology Department, *Loyola Marymount University*, Los Angeles CA.

- Kendall Johnson (Undergraduate Researcher)

2014 – 2015 Dr. S. Kappe (Principal Investigator), *Center for Infectious Disease Research*, Seattle WA.

- Nadia Arang (Research Technician I)
- Dorender Dankwa (Research Fellow)
- Heather Kain (Research Technician II)
- Andrew Rapanna (Undergraduate Researcher)
- Emily Walter (Undergraduate Researcher)

2007 – 2011 Dr. E. Harris (Principal Investigator), Infectious Diseases and Immunology Division, *University of California Berkeley*, Berkeley CA

- Dipti Banerjee (Undergraduate Researcher)
- Ritela Gonzalez (Staff Research Associate I)
- Susana Orozco (Staff Research Associate II)

**STUDENT POSTER PRESENTATIONS**

2024 SAM Undergraduate Research Symposium, *University of Washington Tacoma*, Tacoma WA.

- **Melody Du & Anastasia Latu** – Development of a cell-free culturing system for liver-stage malaria parasites.
- **India Grace & Cory Dickson** – Do-it-yourself PCR: serotyping Dengue viruses in *Aedes* mosquitoes within El Salvador.
- **Krysta Janis & Themsiri Srimuang** – Mutagenesis and isolation of the *Plasmodium* BEM46-like protein (PBLP).
- **Yvette Tadeo** – Empowering seniors through community engagement.

2023 Undergraduate Research Symposium, *University of La Verne*, La Verne CA.

- **Luis Cardona Marroquin & Francisco Duarte Garcia** - *Principal Investigator:* Dr. M. Velado Cano, Variabilidad abiótica y el potencial de las bromelias como microhábitat de zancudos.

2023 SAM Undergraduate Research Symposium, *University of Washington Tacoma*, Tacoma WA.

- **Ayat Alkadban & Jamie Dahan** - The red flags of *Plasmodium yoelii*: expressing *Plasmodium* BEM46-like protein (PBLP)-BirA to characterize parasite surface proteins.
- **Cindy Aprikian & William Brown** - Characterization of conserved regulatory RNA elements in the coding-region of the Dengue viral genome.
- **Jillian Sheppard** - Investigating the -ase: understanding the catalytic function of *Plasmodium* BEM46-like protein (PBLP). *2nd Place Award for Best Biomedical Sciences Poster.*

2022 SAM Undergraduate Research Symposium, *University of Washington Tacoma*, Tacoma WA.

- **Anjanette Arvizo** – Analyzing the biochemistry of the *Plasmodium* BEM46-like protein (PBLP).
- **Sabrina Bacher** – Using perfringolysin O (PFO) to create a cell-free *in vitro* system to study mouse malaria (*Plasmodium yoelii*). *1st Place Award for Best Biomedical Sciences Poster.*

2021 Summer SAM Undergraduate Research Symposium, *University of Washington Tacoma*, Tacoma WA.

- **Rachel Ramirez** – Identification and mutagenesis of conserved RNA elements in the Dengue virus genome.

2021 SAM Undergraduate Research Symposium, *University of Washington Tacoma*, Tacoma WA.

- **Vanessa Begazo & Gurleen Toor** – Conserved RNA sequence and structural elements in Dengue virus genome.
- **Megan Bockman** – Surveillance of sanitation practices and their effect on surgical site infections.
- **Britt Menefee & Rachel Kim** – Discerning the biochemical function for the catalytic domain of the *Plasmodium* BEM46-like protein (PBLP).
- **Caritina Sanchez** – Creating a transgenic parasite to express *Plasmodium* BEM46-like protein (PBLP) with a BirA* tag. *1st Place Award for Best Biomedical Sciences Poster.*
- **Colleen Selness & David Slattery** – Devitalizing Dengue virus: identification and mutagenesis of conserved genomic RNA sequence and structural elements.
- **Kaiya Stewart & Kiara Wiggins** – Disruption of conserved RNA sequences and structures to examine Dengue virus replication.

2020 Fall SAM Undergraduate Research Symposium, *University of Washington Tacoma*, Tacoma WA.

- **John McPherson** – Tracking the maturation of *Plasmodium yoelii* sporozoites for infectivity and longevity.

2020 SAM Undergraduate Research Symposium, *University of Washington Tacoma*, Tacoma WA.

- **Ngan Huynh & Eevee Uzumaki** – *Principal Investigator:* Dr. J. Heller, Tracking the subcellular localization of an uncharacterized *Plasmodium* protein: manipulating cloning and tagging techniques.
- **Rachel Kiforishin** – *Principal Investigator:* Dr. J. Heller, PCR of *Plasmodium yoelii* gene PY02678 to understand its function.
- **Darrell Lockhart** – Do you want to build a parasite? Using the *Plasmodium* BEM46-like protein (PBLP) to characterize the parasite plasma membrane.
- **Zachary Strome** – Mutagenesis of the *Plasmodium* BEM46-like protein (PBLP) for isolation and biochemical analysis.
- **Raveena Vaid** – *Principal Investigator:* Dr. J. Heller, Demystifying the role of an uncharacterized *Plasmodium* protein through gene knockout.

2019 Winter Student Showcase, *University of Washington Tacoma*, Tacoma WA.

- **Saddie Burkentine** (Primary) **& Darrell Lockhart** - Development of a transgenic *Plasmodium yoelii* parasite: characterizing the protein interactive network on the parasite plasma membrane.

2019 33rd Annual Symposium of The Protein Society, Seattle WA.

- **Koryn Aguon & Misaki Seto** - Discerning the biochemical function for the catalytic domain of the *Plasmodium* BEM46-like protein (PBLP).

2019 SAM Undergraduate Research Symposium, *University of Washington Tacoma*, Tacoma WA.

- **Koryn Aguon & Misaki Seto** - Discerning the biochemical function for the catalytic domain of the *Plasmodium* BEM46-like protein (PBLP).
- **Armann Gill & Tracy Mwangi** - The effects of cytochalasin B on the localization of the *Plasmodium* BEM46-like protein (PBLP) to determine the role of translocated proteins during malarial infection.
- **Amy Morris** - Generating a cell free system using perfringolysin O (PFO) to study *Plasmodium yoelii* late liver-stages.
- **Amira Salim & Daliah Salim** - The role of age-dependent maturation in *Plasmodium spp.* (malaria) sporozoite infectivity.

2018 Scholars' Week, *Western Washington University*, Bellingham WA.

- **Katherine Barker** (Primary) **& Akashdeep Malhi** - Expression of wild-type and mutant constructs for the *Plasmodium* BEM46-like protein (PBLP).

2017 Scholars' Week, *Western Washington University*, Bellingham WA.

- **Michael Anderson** (Primary) **& Akashdeep Malhi** - Structural analysis of the catalytic domain for the *Plasmodium* BEM46-like protein.

2017 Undergraduate Research Symposium, *Loyola Marymount University*, Los Angeles CA.

- **Kendall Johnson** – *Principal Investigator:* Dr. V. Carmona Galindo, Ecological dynamics of *Mycobacterium* phage assemblages.

## SPEAKING INVITATIONS

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| 2024 | University of La Verne Tropical Ecology Guest Lecture (**Virtual Presentation**): Disease Surveillance: Investigating the Incidence of Dengue in El Salvador, *University of La Verne*, La Verne CA. |
| 2023 | Math Science Upward Bound Summer Academy Seminar Series (**Virtual Presentation**): Disease Surveillance: Investigating the Incidence of Dengue in El Salvador, *University of Washington*, Seattle WA. |
| 2021 | Math Science Upward Bound Summer Academy Seminar Series (**Virtual Presentation**): The Power of (Gene) Expression: Characterizing Infection-Related Proteins during the Mosquito-Stage of the Malaria Life Cycle, *University of Washington*, Seattle WA. |
| 2021 | University of Washington Tacoma Environmental Science Division Seminar (**Virtual Presentation**): The Role of Age-Dependent Maturation in the Generation of Infectious *Plasmodium* Sporozoites, *University of Washington Tacoma*, Tacoma WA. |
| 2020 | Math Science Upward Bound Summer Academy Seminar Series (**Virtual Presentation**): A Tale of Two Plagues: The 1918 Flu Pandemic and the COVID-19 Pandemic of 2020, *University of Washington*, Seattle WA. |
| 2019 | 3rd Annual John A. McLean, Jr. Lecture Series: Discerning the Biochemical Function of the Catalytic Domain for the *Plasmodium* BEM46-Like Protein (PBLP), *University of Detroit Mercy*, Detroit MI. |
| 2018 | HOSA – Future Health Professionals (Grover Cleveland High School Chapter): The Importance of Global Health: Developing New Strategies for Combating Malaria, *Grover Cleveland High School*, Seattle WA. |
| 2018 | University of Detroit Mercy Biology Department Seminar (**Virtual Presentation**): Ecological Dynamics of *Mycobacterium* Phage Assemblages, *University of Detroit Mercy*, Detroit MI. |
| 2018 | University of Puget Sound Biology Department Seminar: Biochemical Analysis of a *Plasmodium* α/β-Hydrolase that Modulates Parasite Invasive-Stage Morphogenesis, *University of Puget Sound*, Tacoma WA. |
| 2017 | Math Science Upward Bound Summer Academy Seminar Series: The Importance of Global Health: Developing New Strategies to Combat Malaria, *University of Washington*, Seattle WA. |
| 2017 | University of El Salvador Center for Global Health Research Seminar (**Virtual Presentation**): Ecological Dynamics of *Mycobacterium* Phage Assemblages, *Universidad de El Salvador*, San Salvador, El Salvador. |
| 2017 | 3rd Annual OSU Microbiology Student Association Symposium: Biochemical Analysis of a *Plasmodium* α/β-Hydrolase that Modulates Parasite Invasive-Stage Morphogenesis, *Oregon State University*, Corvallis WA. |
| 2016 | Loyola Marymount University Biology Department Seminar (**Virtual Presentation**): Ecological Dynamics of *Mycobacterium* Phage Assemblages, *Loyola Marymount University*, Los Angeles CA. |
| 2016 | 10th Annual American Society for Microbiology NW Branch Meeting: Biochemical Analysis of a *Plasmodium* α/β-Hydrolase that Modulates Parasite Invasive-Stage Morphogenesis, *University of Washington & Seattle Pacific University*, Seattle WA. |
| 2014 | Seattle Youth Empowerment Day: Understanding Our Role in Promoting Global Health: HIV Transmission, sponsored by Young Nonprofit Leaders Organization, *Center for Infectious Disease Research*, Seattle WA. |
| 2013 | BioQuest Summer Academy: Malaria Pathogenesis and Transmission, *Center for Infectious Disease Research*, Seattle WA. |
| 2010 | Loyola Marymount University Biology Department Seminar: A New Coding Region Regulatory RNA Element that Modulates the Dengue Viral Life Cycle, *Loyola Marymount University*, Los Angeles CA. |
| 2009 | Loyola Marymount University Biology Department Seminar: Coding Region Regulatory RNA Elements: Deciphering the Dengue Virus Life Cycle, *Loyola Marymount University*, Los Angeles CA. |
| 2006 | Reed College Board of Trustees: Understanding Virulence: *in vitro* Analysis of H-NS and Ler Mediated Regulation of the LEE Pathogenicity Island in Enteropathogenic *Escherichia coli*, *Reed College*, Portland OR. |

## PRESENTATIONS & POSTERS

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| 2020 | Grit City Think and Drink Series: **Virtual Presentation**, A Tale of Two Plagues: The 1918 Flu Pandemic and the COVID-19 Pandemic of 2020, *University of Washington Tacoma*, Tacoma WA. |
| 2018 | SIAS Brown Bag Series: **Oral Presentation**, Malaria Parasite Invasive-Stage Morphogenesis, *University of Washington Tacoma*, Tacoma WA. |

2018 7th Annual Society for the Advancement of Biology Education Research Meeting: **Poster Presentation (Author)**, Seminars for Students from Under-Represented Populations Support Strong Science Identity and Motivation, *University of Minnesota - Twin Cities*, Minneapolis MN.

2018 Northwest Worm Meeting: **Oral Presentation (Author)**, Collaborative CRISPR: A Model for Including Undergraduate Students in the Scientific Process, *Western Washington University*, Bellingham WA.

2018 14th Annual Teaching & Learning Symposium: **Poster Presentation (Author)**, Students in Authentic Research Modules Demonstrate Deeper Thinking on Exams, *University of Washington*, Seattle WA.

2017 Mix It Up (Movers and Shakers in STEM): **Panelist,** Science that is Changing the World, *Western Washington University*, Bellingham WA.

2016 Minorities & Women in Science: **Panelist,** Focus on the Discouragements and Obstacles Facing Underrepresented Classes in Scientific Careers, *Loyola Marymount University*, Los Angeles CA.

2016 EmpowerHer Summit: **Mentor,** Breaking Down Imposter Syndrome and Building Professional Connections Among Women, sponsored by Washington State Opportunity Scholarship (WSOS), *Center for Infectious Disease Research,* Seattle WA.

2015 27th Seattle Parasitology Conference: **Oral Presentation,** The Role of Age-Dependent Maturation in the Generation of Infectious *Plasmodium* Sporozoites, *Center for Infectious Disease Research*, Seattle WA.

2014 25th Molecular Parasitology Meeting: **Poster Presentation,** Identification of a Novel BEM46-like Protein in *Plasmodium yoelii* that Modulates Parasite-Specific Maturation of Infectious Forms, *Marine Biological Laboratory*, Woods Hole MA.

2012 6th Annual Viral Pathogenesis Program Retreat: **Poster Presentation**, Why Are HIV-1 Capsid Assembly Intermediates RNase-Sensitive?, *University of Washington*, Seattle WA.

2011 12th Annual Microbiology Student Symposium: **Oral Presentation**, Investigation of a Novel Coding-Region Regulatory RNA Element that Modulates the Dengue Viral Life Cycle, *University of California Berkeley*, Berkeley CA.

2011 14th Annual Bay Area Microbial Pathogenesis Symposium: **Poster Presentation**, Investigation of a Novel Coding-Region Regulatory RNA Element that Modulates the Dengue Viral Life Cycle, *University of California San Francisco*, San Francisco CA.

2010 29th Annual American Society of Virology Meeting: **Poster Presentation**, A Novel Coding Region RNA Element that Modulates the Dengue Viral Life Cycle, *Montana State University*, Bozeman MT.

2010 9th International Symposia on Positive-Strand RNA Viruses: **Poster Presentation (Author)**, A Novel Coding Region RNA Element that Modulates the Dengue Viral Life Cycle, Atlanta GA.

2008 27th Annual American Society of Virology Meeting: **Poster Presentation**, The Role of Coding Region RNA Secondary Structures in the Dengue Viral Life Cycle, *Cornell University*, Ithica NY.

2008 9th Annual Microbiology Student Symposium: **Poster Presentation (Author)**, Humoral Response to *Mycobacterium tuberculosis* Lipids as Biomarker for Monitoring Treatment Response, *University of California Berkeley*, Berkeley CA.

2007 8th International Symposia on Positive-Strand RNA Viruses: **Poster Presentation (Author)**, Coding Region RNA Regulatory Elements in the Dengue Virus Genome, Washington DC.

2006 Reed College Students Talking About Research: **Oral Presentation**, Understanding Virulence: *in vitro* Analysis of H-NS and Ler Mediated Regulation of the LEE Pathogenicity Island in Enteropathogenic *Escherichia coli*, *Reed College*, Portland OR.

2006 1st Annual American Society for Microbiology NW Branch Meeting: **Poster Presentation**, Understanding Virulence: *in vitro* Analysis of Ler and H-NS Mediated Regulation of the *LEE5* Operon in Enteropathogenic *Escherichia coli*, *University of Washington*, Seattle WA.

2005 Merck Student Summer Research Poster Session: **Poster Presentation**, Molecular Mechanisms of *LEE5* Transcription in Enteropathogenic *Escherichia coli*: *in vitro* Analysis of H-NS and Ler Binding, *Reed College*, Portland OR.

2004 Howard Hughes Medical Institute Symposium: **Oral Presentation**, Translational Control of Dengue Viral Genome: Role of 3' Untranslated Region and Conserved Sequence 1, *Oregon State University*, Corvallis OR.

## PROFESSIONAL DEVELOPMENT & AWARDS

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| 2024 – Present | UW Tacoma Undergraduate Research Faculty Fellow (Dr. H. Dillon), *University of Washington Tacoma*, Tacoma WA. |
| 2024 | Lab Safety Award, *University of Washington*, Seattle WA. |
| 2024 | Undocu Ally Training, *University of Washington Tacoma*, Tacoma WA. |
| 2024 | Hazing Prevention Training, *University of Washington Tacoma*, Tacoma WA. |
| 2024 | Cultivating Community at UW: Anti-Racism and DEI&B in the Workplace, *University of Washington Tacoma*, Tacoma WA. |
| 2022 | Social Justice Research and Scholarship Initiative (SJRSI), *University of Washington Tacoma*, Tacoma WA. |
| 2022 | RAINN Sexual Misconduct Prevention and Response Training, *University of Washington Tacoma*, Tacoma WA. |
| 2021 | How to be an Ally Training, *University of Washington Tacoma*, Tacoma WA. |
| 2021 | Gender Identity Training, *University of Washington Tacoma*, Tacoma WA. |
| 2021 | LGBTQ Core Competency Training, *University of Washington Tacoma*, Tacoma WA. |
| 2021 | Husky Prevention and Response (Title IX), *University of Washington*, Seattle WA. |
| 2021 | Lab Safety Award, *University of Washington*, Seattle WA. |
| 2021 | Planning for Faculty Hiring: A Webinar on Search Committees, Assessment Rubrics and Job Ads, *University of Washington Tacoma*, Tacoma WA. |
| 2020 | Strengthening Educational Excellence through Diversity (SEED) Fellow (Dr. J. Aguirre), *University of Washington Tacoma*, Tacoma WA. |
| 2020 | iTech Fellow (Dr. D. Janzen), *University of Washington Tacoma*, Tacoma WA. |
| 2020 | How to Use Zoom to Work with Your Pedagogy – Pro Tips Edition, *University of Washington Tacoma*, Tacoma WA. |
| 2020 | Planning and Designing an Online Class 101, *University of Washington Bothell*, Bothell WA. |
| 2020 | Double Check – Lets Make Sure Your Course is Ready for Spring, *University of Washington Tacoma*, Tacoma WA. |
| 2019 | Best Practices in Faculty Searches Workshop, *University of Washington Tacoma*, Tacoma WA. |
| 2019 | Pack Leader in Safety Award, University of Washington, Seattle WA. |
| 2019 | Project Biodiversify Workshop (Dr. J. Davis), *University of Washington Tacoma*, Tacoma WA. |
| 2019 | Exploratory Workshop: The Community Engagement Fellows Coalition (**Dr. A. Groat Carmona**), *University of Washington Tacoma*, Tacoma WA. |
| 2019 | Signaling Across the Membrane: G-protein Coupled Receptors (**Dr. A. Groat Carmona**, Session Chair), 33rd Annual Symposium of The Protein Society, Seattle WA. |
| 2018 | High Impact Practices (HIPs): Undergraduate Research Community of Practice (Dr. E. Cline), *University of Washington Tacoma*, Tacoma WA. |
| 2017 – 2018 | Community Engagement Fellow (Dr. T. Tennessen), *Western Washington University*, Bellingham WA. |
| 2017 | Campus Equity and Inclusion Forum (Lifelong Learning Certificate), *Western Washington University*, Bellingham WA. |
| 2008 & 2011 | Infectious Diseases and Immunology Departmental Award for Best Graduate Student Instructor, *University of California Berkeley*, Berkeley CA. |
| 2006 | Award for Outstanding Student Poster Presentation, American Society for Microbiology NW Branch Meeting, *University of Washington*, Seattle WA. |

## SERVICE, MEMBERSHIP & COMMITTEES

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| 2024 - Present | Joint (ES/BioMed) 310/410 Workgroup, Sciences and Mathematics Division, *University of Washington Tacoma*, Tacoma WA. |

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| 2024 - Present | Lab (Best) Practices Workgroup, Sciences and Mathematics Division, *University of Washington Tacoma*, Tacoma WA. |
| 2024 | Undergraduate Thesis Reader, Departamento de Ingeniería de Procesos y Ciencias Ambientales, *Universidad Centroamericana José Simeón Cañas*, Antiguo Cuscatlán, La Libertad, El Salvador. |
| 2023 - 2024 | Faculty Council Representative (Dean's Diversity Advisory Council [DAC]), School of Interdisciplinary Arts and Sciences, *University of Washington Tacoma*, Tacoma WA. |
| 2023 - 2024 | Co-Chair of Dean's Diversity Advisory Council (DAC), School of Interdisciplinary Arts and Sciences, *University of Washington Tacoma*, Tacoma WA. |
| 2023 | Undergraduate Thesis Reader, Departamento de Ingeniería de Procesos y Ciencias Ambientales, *Universidad Centroamericana José Simeón Cañas*, Antiguo Cuscatlán, La Libertad, El Salvador. |
| 2022 - 2024 | Introductory Biology Workgroup, Sciences and Mathematics Division (Biomedical Sciences), *University of Washington Tacoma*, Tacoma WA. |
| 2022 - 2023 | Curriculum-to-Career Innovations Institute (C2CII), Association of American Colleges and Universities (AAC&U), School of Interdisciplinary Arts and Sciences, *University of Washington Tacoma*, Tacoma WA. |
| 2022 | Teaching Faculty Mentor (Immunology Co-Instructor – Dr. S. Reeder), Math Science Upward Bound (MSUB), *University of Washington*, Seattle WA. |
| 2022 | Scientific Oversight Committee (Dr. S. Reeder), Center for Global Infectious Disease Research, *Seattle Children's Research Institute*, Seattle WA. |
| 2021 - 2022 | Tenure Track Search Committee (Epidemiology), School of Interdisciplinary Arts and Sciences, *University of Washington Tacoma*, Tacoma WA. |
| 2020 - Present | ACCESS in STEM Faculty Mentor, Sciences and Mathematics Division, *University of Washington Tacoma*, Tacoma WA. |
| 2020 - Present | Dean's Diversity Advisory Council (DAC), School of Interdisciplinary Arts and Sciences, *University of Washington Tacoma*, Tacoma WA. |
| 2019 - Present | UW Graduate Faculty, School of Interdisciplinary Arts and Sciences, *University of Washington Tacoma*, Tacoma WA. |
| 2019 - 2023 | Diversity Workgroup, Sciences and Mathematics Division, *University of Washington Tacoma*, Tacoma WA. |
| 2019 - 2020 | Tenure Track Search Committee (Ecotoxicology), School of Interdisciplinary Arts and Sciences, *University of Washington Tacoma*, Tacoma WA. |
| 2019 - 2020 | Faculty Mentor (MCAT Review Workshop), Sciences and Mathematics Division (Biomedical Sciences), *University of Washington Tacoma*, Tacoma WA. |
| 2018 – Present | Faculty Advisor, Sciences and Mathematics Division (Biomedical Sciences), *University of Washington Tacoma*, Tacoma WA. |
| 2018 – 2021 | Outreach and Recruitment Workgroup, Sciences and Mathematics Division, *University of Washington Tacoma*, Tacoma WA. |