

Education

2019-2024*	Ph.D. Microbiology and Molecular Genetics <i>Dissertation:</i> Elucidating the mechanisms behind microbial bile acid conjugation and its impacts on host microbiota and physiology Mentor: Robert A. Quinn, Ph.D.	Michigan State University East Lansing, MI, USA
2015-2019	B.S. Microbiology , cum laude <i>Thesis:</i> Determining the impact of host-synovial fluid factors on <i>Staphylococcus aureus</i> aggregation Mentors: Paul Stoodley, Ph.D. and Sashwati Roy, Ph.D.	The Ohio State University Columbus, OH, USA

Additional Positions

Mar 2023	Visiting Graduate Researcher <i>Collaborators:</i> Trevor Lawley, Ph.D. and Hilary Browne, Ph.D. Introduced and guided development of mass spectrometry sample preparation methods within the Lawley laboratory in an ongoing collaboration to identify differences in metabolic products between related <i>Bifidobacterium</i> species.	Wellcome Sanger Institute Cambridge, UK
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Publications

- Guzior DV**, Okros M, Martin H C, Shivel M, Armwald B, Hausinger RP, Quinn RA. 2023. Bile salt hydrolase/ aminoacyltransferase shapes the microbiome. In review. Preprint available, doi: [10.21203/rs.3.rs-2050406/v1](#)
- Quinn RA, Martin C, **Guzior DV**. 2023. A multi-omic trip through the human gut. *Nat Metab* **5**:720–721. doi: [10.1038/s42255-023-00773-3](#)
- Neugebauer KA, Okros M, **Guzior DV**, Feiner J, Chargo NJ, Rzepka M, Schillmiller AL, O'Reilly S, Jones AD, Watson VE, Luyendyk JP, McCabe LR, Quinn RA. 2022. *Baat* gene knockout alters post-natal development, the gut microbiome, and reveals unusual bile acid conjugates in mice. *J. Lipid Res* **63**:100297. doi: [10.1016/j.jlr.2022.100297](#)
- Ghuneim L-AJ, Raghuvanshi R, Neugebauer KA, **Guzior DV**, Martin C, Schena B, Feiner JM, Castillo-Bahena A, Mielke J, McClelland M, Conrad D, Klapper I, Zhang T, Quinn RA. 2022. Complex and unexpected outcomes of antibiotic therapy against a polymicrobial infection. *ISME J* **16**:2065–2075. doi: [10.1038/s41396-022-01252-5](#)
- Wurster JI, Peterson RL, Brown CE, Penumutthu S, **Guzior DV**, Neugebauer KA, Sano WH, Sebastian MM, Quinn RA, Belenky P. 2021. Streptozotocin-induced hyperglycemia alters the cecal metabolome and exacerbates antibiotic-induced dysbiosis. *Cell Rep* **37**:110113. doi: [10.1016/j.celrep.2021.110113](#)
- Sosinski LM, Martin H C, Neugebauer KA, Ghuneim L-AJ, **Guzior DV**, Castillo-Bahena A, Mielke J, Thomas R, McClelland M, Conrad D, Quinn RA. 2022. A restructuring of microbiome niche space is associated with Elexacaftor-Tezacaftor-Ivacaftor therapy in the cystic fibrosis lung. *J Cyst Fibros* **21**:996–1005. doi: [10.1016/j.jcf.2021.11.003](#)

Guzior DV, Quinn RA. 2021. Review: microbial transformations of human bile acids. *Microbiome* **9**:140. doi: [10.1186/s40168-021-01101-1](https://doi.org/10.1186/s40168-021-01101-1)

Pesttrak MJ, Gupta TT, Dusane DH, **Guzior DV**, Staats A, Harro J, Horswill A, Stoodley P. 2020. Investigation of synovial fluid induced *Staphylococcus aureus* aggregate development and its impact on surface attachment and biofilm formation. *PLoS ONE* **15**:e0231791. doi: [10.1371/journal.pone.0231791](https://doi.org/10.1371/journal.pone.0231791)

Conference Presentations

Talks (*Upcoming)

***Guzior DV**, Quinn RA. Bile salt hydrolase aminoacyltransferase activity from gut anaerobes expands the human bile acid pool. Anaerobe 2023; July 2023; Cardiff, Wales, UK.

Guzior DV, Quinn RA. Reversing Dogma: Bile Salt Hydrolase. Anaerobe Congress; July 2022; Seattle, WA, USA.

Posters (*Upcoming)

Guzior DV, Wu H, Martin C, Rzepka M, Neugebauer K, Lumeng J, de los Campos G, Quinn RA. Microbiome and metabolome dynamics during the first year of life. Poster to be presented at Great Lakes Pediatric Research Day; April 2023; Grand Rapids, MI.

Guzior DV, Quinn RA. Diversity and phylogenetic relationships of bile acid conjugation within the *Lachnospiraceae*. Poster presented at ASM Microbe; June 2022; Washington, D.C.

Guzior DV, Quinn RA. Analyzing the diversity of *in vitro* microbially conjugated bile acid products. Poster presented at: The 3rd Annual Metabolomics Association of North America Conference; October 2021; Virtual.

Guzior DV, Das A, Roy S, Sen CK. Non-invasive preclinical porcine maxillofacial model to study excessive scarring of the face following burn injury. Poster presented at OSUMC Research Day; April 2019; Columbus, OH.

Guzior DV, Das A, Roy S, Sen CK. Non-invasive preclinical porcine maxillofacial model to study excessive scarring of the face following burn injury. Poster presented at the Denman Undergraduate Research Forum; April 2019; Columbus, OH.

Awards

2022-2023 Outstanding Scholar Fellowship, College of Natural Science, Michigan State University

2023 Ralph Evans Award, Department of Microbiology and Molecular Genetics, Michigan State University

2021 Philipp and Vera Gerhardt Award, Department of Microbiology and Molecular Genetics, Michigan State University

Professional Memberships, Leadership, and Service

Societal Membership

2023-Present Member, Microbiology Society

2021-Present Member, American Society for Microbiology

2020-Present Member, Metabolomics Association of North America

Leadership

- 2022-2024** Graduate Committee Representative, Department of Microbiology and Molecular Genetics, Michigan State University
- 2014** Eagle Scout, Boy Scouts of America

Volunteer Organizations

- 2015-Present** Annual Fundraiser and Shavee, St. Baldrick's Foundation
- 2022-Present** Graduate Mentor, Graduate Recruitment Initiative Team, Michigan State University
- 2020** Volunteer, Science Debate - MSU Chapter
- 2020** Donor, Be The Match

Skills

Research

- Microbiology and Molecular Biology: Aerobic and anaerobic bacterial culture, biofilm culture, bacterial transformation and heterologous gene expression, primer design, polymerase chain reaction (PCR), Gibson assembly, cell competency and cloning (*E. coli*), media preparation and autoclave sterilization, buffer creation, BSL1 and BSL2 microorganisms.
- Microscopy and Imaging: General light microscopy, confocal microscopy, ZEN slide imaging (Zeiss Axio Scan Z1), wound harmonic ultrasound imaging, laser speckle microperfusion imaging, general photography, digital planimetry.
- Histology: DAPI staining, hematoxylin and eosin staining, paraffin wax-embedded tissue sectioning, frozen tissue sectioning (Leica CM3050S, CryoStar NX50), immunohistochemistry.
- Mass spectrometry: Liquid chromatography-tandem mass spectrometry, LC-MS/MS (Q Exactive Hybrid Quadrupole Orbitrap), MZmine (ver. 2 and 3), Global Natural Products Social Molecular Networking (UCSD), Laser Ablation-Inductively Coupled Plasma-Time of Flight-Mass Spectrometry (LA-ICP-TOF-MS).
- Experienced in maintaining and working in vinyl anaerobic chambers (Coy Laboratory).
- Successfully and routinely published in peer-reviewed journals.

Teaching

- Assisted teaching general microbiology laboratory course, routinely answered student questions, taught weekly lecture reviews, and graded assignments. Received excellent student reviews upon completion of the semester.
- Assisted teaching general microbiology lecture course; graded weekly assignments and exams, actively participated in assignment design, and attended weekly staff meetings.
- Privately tutored graduate level microbial genetics.

Information Technology

- Imaging Software: ZEN slide imaging, Image J.
- Statistical Programs: R programming language, R Studio, QIIME2, QIITA.