

Education

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|-----------|---|---|
| 2019- | 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: Dr. Robert A. Quinn | 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: Dr. Paul Stoodley and Dr. Sashwati Roy | The Ohio State University
Columbus, OH, USA |

Publications

- Neugebauer KA, **Guzior DV**, Feiner J, Rzepka M, Schillmiller A, O'Reilly S, Jones AD, Watson VE, Luyendyk JP, McCabe L, Quinn RA. 2021. Bile acid-CoA:amino acid N-acyltransferase gene knockout alters early life development, the gut microbiome and reveals unusual bile acid conjugates in mice. In Review. Preprint Available: <https://doi.org/10.1101/2022.04.10.487642>
- Ghuneim LAJ, Raghuvanshi R, Neugebauer KA, **Guzior DV**, Martin H C, Schena B, Feiner J, Castillo-Bahena A, Jentz C, Mielke J, McClelland M, Conrad D, Klapper I, Zhang T, Quinn RA. 2021. Predicting and testing complex outcomes of antibiotic therapy against a polymicrobial infection. In Review.
- 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](https://doi.org/10.1016/j.celrep.2021.110113)
- Sosinski LM, Martin H C, Neugebauer KA, Ghuneim LAJ, **Guzior DV**, Castillo-Bahena A, Mielke J, Thomas R, McClelland M, Conrad D, Quinn RA. 2021. A restructuring of microbiome niche space is associated with Elexacaftor-Tezacaftor-Ivacaftor therapy in the cystic fibrosis lung. *J Cyst Fibros.* doi: [10.1016/j.jcf.2021.11.003](https://doi.org/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(4): e0231791. doi: [10.1371/journal.pone.0231791](https://doi.org/10.1371/journal.pone.0231791)

Conference Presentations

Talks (*Upcoming)

- ***Guzior DV**, Quinn RA. 2022. Diversity, Phylogeny, and Antimicrobial Nature of Bile Acid Conjugation within the *Lachnospiraceae*. Anaerobe 2022; July 2022; Seattle, WA, USA.

Posters (*Upcoming)

*Guzior DV, Quinn RA. 2022. Diversity and phylogenetic relationships of bile acid conjugation within the *Lachnospiraceae*. Poster to be presented at: ASM Microbe; June 2022; Washington, DC, USA.

Guzior DV, Quinn RA. 2021. 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, USA.

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, USA.

Skills

Research

- Microbiology and Molecular Biology: Aerobic and anaerobic bacterial culture, biofilm culture, bacterial transformation, primer design, polymerase chain reaction (PCR), gram staining, media preparation, 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.
- Immunohistochemistry: DAPI staining, hematoxylin and eosin staining, paraffin wax-embedded tissue sectioning, frozen tissue sectioning (Leica CM3050S, CryoStar NX50).
- Mass spectrometry: QExactive Hybrid Quadrupole Orbitrap (tandem mass spectrometry, LC-MS/MS), MZmine, Global Natural Products Social Molecular Networking (UCSD), Laser Ablation-Inductively Coupled Plasma-Time of Flight-Mass Spectrometry (LA-ICP-TOF-MS).
- Flow cytometry (fluorescence activated cell sorting, FACS).
- Experienced with 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 a graduate level microbial genetics course.

Information Technology

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

Professional Memberships, Leadership, and Service

Scientific Societies

2021-Present Member, American Society for Microbiology

2020-Present Member, Metabolomics Association of North America

Leadership

2022-2023 Graduate Committee Representative, Department of Microbiology and Molecular Genetics

2014 Eagle Scout, Boy Scouts of America

Volunteer Organizations

2015-Present Fundraiser and Shavee, St. Baldrick's Foundation

2020 Volunteer, Science Debate - MSU Chapter

2020 Donor, Be The Match