Reed M. Stubbendieck

Assistant Professor

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This is an abbreviated CV with items from 2021 and beyond. See here for the full-length version

Education

Ph.D. Genetics — *2017*

Texas A&M University — *College Station, TX*

- **Adviser:** Dr. Paul Straight, Ph.D.
- **Dissertation:** Discovering Linearmycins in Bacterial Competition: Lysis, Autolysis, and Resistance

Certificate - Microbial Specialised Metabolites: Origins and Applications — *2014*

John Innes Centre/Rudjer Bošković Summer School in Applied Molecular Microbiology — *Dubrovnik, Croatia*

B.S. Biochemistry & Biological Sciences — *2011*

University of Nebraska-Lincoln — *Lincoln, NE*

Experience

Assistant Professor — *2022-Present*

Oklahoma State University - Department of Microbiology and Molecular Genetics — *Stillwater, OK*

Postdoctoral Research Associate — *2017-2022*

University of Wisconsin-Madison - Department of Bacteriology — *Madison, WI*

- **Adviser:** Dr. Cameron Currie, Ph.D.

Graduate Research Associate — *2012-2017*

Texas A&M University - Department of Biochemistry & Biophysics — *College Station, TX*

- **Adviser:** Dr. Paul Straight, Ph.D.

Post-Baccalaureate Research Assistant — *2011*

University of Nebraska-Lincoln - Department of Biochemistry — *Lincoln, NE*

- **Adviser:** Dr. Cheryl Bailey, Ph.D.

Undergraduate Research Assistant — *2008-2011*

University of Nebraska-Lincoln - Department of Biological Sciences — *Lincoln, NE*

- **Adviser:** Dr. Eileen Hebets, Ph.D.

Support

Grants

Identification of Anti-*Staphylococcus aureus* Metabolites Produced by *Dolosigranulum pigrum* from the Human Nose — *2024-Present*

National Institute of Allergy and Infectious Diseases — ***1R03AI182770-01***

- **Role:** PI
- **Award:** $136,056

Characterizing Pathogen-Mediated Production of Secondary Metabolites in the Human Aerodigestive Tract Microbiome — *2024-Present*

National Institute of General Medical Sciences — ***1P20GM152333-01***

- **Role:** RPL
- **Award:** $1,003,298
- NIH Centers of Biomedical Research Excellence Program - Phase I for the Oklahoma Center for Microbiome Research
- **Oklahoma State University Press Release**

Identification of Antimicrobial Peptides against *Staphylococcus aureus* Produced by *Dolosigranulum pigrum* in the Nose *2023*

Oklahoma Center for Respiratory and Infectious Diseases Pilot Project Grant

- **Role:** PI
- **Award:** $100,000 (Declined)

Discovering Mechanisms of *Staphylococcus aureus* Inhibition by Commensal *Dolosigranulum pigrum* *2023-2024*

Oklahoma State University College of Arts and Sciences Research Program Seed Grant

- **Role:** PI
- **Award:** $10,000

Determining the Role of Siderophores from Brown-Rot Fungi in Copper Tolerance *2020-2022*

United States Department of Agriculture Forest Service *MSN244765*

- **Roles:** preliminary data, analysis, and writing
- **Award:** $10,000

COVID-19 and the Nasal Microbiome: Potential Marker of Disease Outcomes and Novel Antivirals *2020-2021*

Wisconsin Partnership Program *WPP4658*

- **Roles:** project inception, writing, analysis, and management
- **Award:** $49,452

Identification of Novel MDR Antimicrobials from Human Microbiome Symbioses *2019-2022*

National Institute of Infectious Diseases Centers of Excellence for Translational Research *5U19AI142720-03 7250*

- **Roles:** project inception, preliminary data, analysis, and writing
- **Award:** $1,027,237

Publications

*, indicates co-first authorship. †, indicates corresponding author.

Peer-Reviewed Publications

1. **Reed M. Stubbendieck**, Jillian H. Hurst, & Matthew S. Kelly. (2024). *Dolosigranulum pigrum*: a promising nasal probiotic candidate. *PLOS Pathogens*. doi: **10.1371/journal.ppat.1011955**.
2. Rauf Salamzade, J.Z. Alex Cheong, Shelby Sandstrom, Mary Hannah Swaney, **Reed M. Stubbendieck**, Nicole Lane Starr, Cameron R. Currie, Anne M. Singh, & Lindsay Kalan. (2023). Evolutionary investigations of the biosynthetic diversity in the skin microbiome using *lsa*BGC. *Microbial Genomics*. doi: **10.1099/mgen.0.000988**.
3. **Reed M. Stubbendieck†**, Eishika Dissanayake, Peter M. Burnham, Susan E. Zelasko, Mia I. Temkin, Sydney S. Wisdorf, Rose F. Vrtis, James E. Gern, & Cameron R. Currie. (2023). *Rothia* from the human nose inhibit *Moraxella catarrhalis* colonization with a secreted peptidoglycan endopeptidase. *mBio*. doi: **10.1128/mbio.00464-23**. Highlighted in **mBio** and **Nature Reviews Microbiology**.
4. Eishika Dissanayake*, Rebecca A. Brockman-Schneider*, **Reed M. Stubbendieck**, Britney A. Helling, Zhumin Zhang, Yury A. Bochkov, Charmaine Kirkham, Timothy F. Murphy, Carole Ober, Cameron R. Currie, James E. Gern. (2023). Rhinovirus increases *Moraxella catarrhalis* adhesion to the respiratory epithelium. *Frontiers in Cellular and Infection Microbiology*. doi: **10.3389/fcimb.2022.1060748**.
5. **Reed M. Stubbendieck†**, Susan E. Zelasko, Nasia Safdar, & Cameron R. Currie. (2021). Biogeography of Bacterial Communities and Specialized Metabolism in Human Aerodigestive Tract Microbiomes. *Microbiology Spectrum*. doi: **10.1128/Spectrum.01669-21**.
6. Ming Tang, Jie Lie, Wenpeng Hou, **Reed M. Stubbendieck**, Han Xiong, Jie Jin, Jiyi Gong, Chen Cheng, Xiaoxin Tang, Yinglong Liu, Zhaofeng Li, Jianfeng Wang, & Yin Yi. (2021). Structural variability in the bulk soil, rhizosphere, and root endophyte fungal communities of *Themeda japonica* plants under different grades of karst rocky desertification. *Plant and Soil*. doi: **10.1007/s11104-021-04969-y**.

Licenses

Fluorescent-Tagged *Moraxella catarrhalis* For Cell Culture Experiments *2021*

Wisconsin Alumni Research Foundation

P210244US01

Awards

Travel Awards

Oklahoma State University College of Arts and Sciences Travel Award *2023*

Recipient

- **Award:** $1200

Mentoring

Oklahoma State University (Current: 8, Total: 20)

Graduate Students (Current: 2, Total: 2)

Madeline Reichert *2024-Present*

Microbiology and Molecular Genetics Ph.D. Student

Niladri Bhowmik *2023-Present*

Microbiology and Molecular Genetics Ph.D. Student

Rotating Graduate Students (Current: 1, Total: 5)

Eduardo Tolentino Villalobos *2024*

Microbiology and Molecular Genetics M.S. Student

Sanjida Snigdha *2024*

Microbiology and Molecular Genetics Ph.D. Student

Md. Ikram Rafid *2023*

Microbiology and Molecular Genetics Ph.D. Student

Niladri Bhowmik *2023*

Microbiology and Molecular Genetics Ph.D. Student

Yashi Batra *2023*

Microbiology and Molecular Genetics Ph.D. Student

Undergraduate Students (Current: 3, Total: 11)

Sydney Morabbi *2024-Present*

Hariette Diarra *2024-Present*

Elixiva Marcum *2024-Present*

Jonathan Lee *2023-2024*

Kalen Strunk *2023-2024*

Madeline Reichert *2023-2024*

Helen Zaghloul *2023*

Addison Browning *2023*

Reagan Decker *2022-2023*

Luke Myers *2022-2023*

Claire Daniel *2022-2023*

Other Staff (Current: 2, Total: 3)

Elixiva Marcum *2024*

Laboratory Technician

Akram Al Daeriwsh *2024-Present*

Laboratory Technician

Mercedes Perez *2023-Present*

Lab Manager

Teaching

Courses

Oklahoma State University

Microbes: Friends or Foes *2023-Present*

Primary Instructor *MICR 3103 (N)*

Seminar *2023-2024*

Primary Instructor *MICR 5160*

Special Problems: Research *2022-Present*

Primary Instructor *MICR 4990*

Guest Lectures

Advanced Honors Experience in Chemistry *2023*

Oklahoma State University *CHEM 3890*

- **Instructor:** Dr. David Miller
- **Lecture:** Antibiotics and the Microbiome

The Role of the Human Microbiome in Health and Disease *2021*

University of Wisconsin-Madison *MMI 902*

- **Instructor:** Dr. Lindsay Kalan
- **Lecture:** Airway Microbiomes

Service

Peer Review

Ad Hoc Peer Reviewer for *Applied and Environmental Microbiology*, *Frontiers in Bacteriology*, *Frontiers in Microbiology*, *International Journal of Systematic and Evolutionary Microbiology*, *Journal of Bacteriology*, *Journal of Visualized Experiments*, *Microbial Genomics*, *Microbiology Spectrum*, *mSystems*, *PeerJ*, *Scientific Reports*, *Trends in Microbiology*, and *World Journal of Microbiology and Biotechnology* (see **Web of Science** for a full list of verified reviews).

Editorial Roles

Frontiers in Bacteriology *2022-Present*

Review Editor

Section: Molecular Bacteriology and Microbiome

Advising Roles

American Medical Student Association (Pre-Med) - Oklahoma State University *2023-Present*

Co-Adviser

Judging

Oral Presentation Judge at the 9th Conference on Beneficial Microbes *2024*

Student Dissertation & Thesis Committees

Oklahoma State University (Current: 7, Total: 8)

Rashna Sharmeen Shama *2024-Present*

Microbiology and Molecular Genetics M.S. Student

Bableen Kaur *2024-Present*

Microbiology and Molecular Genetics Ph.D. Student

Niladri Bhowmik *2023-Present*

Microbiology and Molecular Genetics Ph.D. Student

Abigail Meek *2023*

Microbiology and Molecular Genetics Accelerated M.S. Student

Mehraj Ansari *2023-Present*

Microbiology and Molecular Genetics Ph.D. Student

Himidu Pitigala Arachchilage *2023-Present*

Integrative Biology Ph.D. Student

Autumn Hansen *2023-Present*

Microbiology and Molecular Genetics M.S. Student

Damilare Ajagbe *2022-Present*

Microbiology and Molecular Genetics Ph.D. Student

Outreach

Latin American Natural Product Genome Mining Workshop *2024*

Centro de Investigación en Matemáticas

- **Roles:** Organizer and Faculty Instructor
- **Topics:** Introduction to Natural Product Biosynthesis & Ecology and Evolution of Natural Products

The Latin American Natural Product Genome Mining Workshop aims to engage with early career researchers across Latin America interested in natural products, their regulation and biosynthesis in an ecological context. For more information please see **here**.

Skype a Scientist *2018-2022*

Online

I met with K-12 classes virtually across the United States for informal conversations about how microbiology influences our lives and to answer students' questions about careers in STEM fields.

Wisconsin Science Expeditions *2017-2022*

The Currie Laboratory - Univeristy of Wisconsin-Madison

Using interactive activities and a living display of a fungus-farming ant colony, members of the Currie laboratory educate the Madison community about symbiosis between animals and microbes, antimicrobial drug discovery, and the development of biofuels.

Professional Activities

Platform Presentations & Seminars

University of Kansas *2024*

Chemical Biology Symposium

- **Talk Title:** Bacterial Competition in the Aerodigestive Tract: Antibiotics, Probiotics, and Beyond

Oklahoma State University *2024*

INTERACT Symposium

- **Talk Title:** Bacterial Competition in the Aerodigestive Tract: Antibiotics, Probiotics, and Beyond

Centro de Investigación en Matemáticas *2024*

Latin American Natural Product Genome Mining Workshop

- **Talk Title:** Bacterial Interactions and Secondary Metabolism the Human Aerodigestive Tract

Oklahoma State University *2024*

Oklahoma Center for Microbiome Research

- **Talk Title:** Bacterial Competition as a Means To Identify Antimicrobials from the Human Microbiome

Oklahoma State University *2024*

Oklahoma Center for Respiratory and Infectious Diseases

- **Talk Title:** Bacterial Competition as a Means To Identify Antimicrobials from the Human Microbiome

University of Oklahoma Health Sciences Center *2023*

Department of Microbiology and Immunology

- **Talk Title:** Actinobacteria Mediate Pathogen Inhibition and Iron Competition in the Nose

Southern Methodist University *2023*

Department of Earth Sciences Seminar Series

- **Talk Title:** Actinobacteria Mediate Pathogen Inhibition and Iron Competition in the Nose

Society for Industrial Microbiology and Biotechnology Annual Meeting *2023*

Conference Presentation

- **Talk Title:** Mining for Gold: Uncovering Biosynthetic Gene Clusters in the Human Nose, Mouth, and Beyond
- Invited Speaker

University of Central Oklahoma *2023*

Tri-Center Symposium

- **Talk Title:** The Nose Knows: Commensal Actinobacteria as an Alternative to Traditional Antimicrobials
- Invited Keynote Speaker

University of Oklahoma *2023*

Department of Microbiology and Plant Biology Seminar Series

- **Talk Title:** Actinobacteria Mediate Pathogen Inhibition and Iron Competition in the Nose

Texas A&M University *2022*

Genetics and Genomics Seminar Series

- **Talk Title:** Actinobacteria Compete for Iron and Reduce Pathogen Colonization in the Human Nose

International Society for the Biology of Actinomycetes *2022*

Conference Presentation

- **Talk Title:** Actinobacteria Reduce Pathogen Colonization in the Human Nose

Oklahoma State University *2022*

Department of Microbiology and Molecular Genetics Seminar

- **Talk Title:** Microbial Competition: From Beneath Your Toes to Inside Your Nose

Auburn University *2021*

Department of Chemistry & Biochemistry Seminar

- **Talk Title:** Natural Products in Microbial Competition: From Beneath Your Toes to Inside Your Nose

University of Wisconsin-Milwaukee *2021*

Department of Biological Sciences Seminar

- **Talk Title:** Bacterial Competition: From Beneath Your Toes to Inside Your Nose

University of North Carolina Chapel Hill *2021*

Catalyst Symposium

- **Talk Title:** Competition and Specialized Metabolism Shape Bacterial Communities in Aerodigestive Tract Microbiomes
- Invited Speaker
- Online Due to COVID-19 Pandemic

Poster Presentations

Molecular Genetics of Bacteria and Phages Meeting *2024*

University of Wisconsin-Madison

- **Poster Authors:** Madeline Reichert, Mercedes Perez Perez, Luke Myers, James E. Gern, & **Reed M. Stubbendieck**
- **Poster Title:** Genomic Insight Into Mechanisms Underlying Pathobiont Protection by Nasal Probiotic *Dolosigranulum pigrum*

Conference on Beneficial Microbes *2024*

University of Wisconsin-Madison

- **Poster Authors:** Niladri Bhowmik, Akram Al Daerwish, Elixiva Marcum, & **Reed M. Stubbendieck**
- **Poster Title:** Identification of Secondary Metabolites and Biosynthetic Gene Clusters from Cystic Fibrosis Microbiomes

Annual Undergraduate Research Symposium *2024*

Oklahoma State University

- **Poster Authors:** Jonathan Lee & **Reed M. Stubbendieck**
- **Poster Title:** Investigation of the Effects of L-Lactic Acid on the Pathobiont *Moraxella catarrhalis*

Oklahoma Center for Respiratory and Infectious Diseases *2024*

Oklahoma State University

- **Poster Authors:** Niladri Bhowmik & **Reed M. Stubbendieck**
- **Poster Title:** Identification of Secondary Metabolites and Biosynthetic Gene Clusters from Cystic Fibrosis Microbiomes

Molecular Genetics of Bacteria and Phages Meeting *2023*

University of Wisconsin-Madison

- **Poster Authors: Reed M. Stubbendieck**, Eishika Dissanayake, Peter M. Burnham, Susan E. Zelasko, Mia I. Temkin, Sydney S. Wisdor, Rose F. Vrtis, James E. Gern, & Cameron R. Currie
- **Poster Title:** *Rothia* from the human nose inhibit *Moraxella catarrhalis* colonization with a secreted peptidoglycan endopeptidase

Conference on Beneficial Microbes *2022*

University of Wisconsin-Madison

- **Poster Authors: Reed M. Stubbendieck**, Eishika Dissanayake, Peter M. Burnham, Susan E. Zelasko, Mia I. Temkin, Sydney S. Wisdor, Rose F. Vrtis, James E. Gern, & Cameron R. Currie
- **Poster Title:** Human nasal *Rothia* mitigate *Moraxella catarrhalis* infection through production of secreted antimicrobial proteins

Affiliations & Memberships

Latin American Natural Product Genome Mining Workshop

Guanajuato, Mexico *2024-Present*

- Faculty Instructor (2024-Present)
- Organizer (2024-Present)

Oklahoma Center for Respiratory and Infectious Diseases

Oklahoma State University *2023-Present*

- Member (2023-Present)

American Society for Microbiology

Washington, DC *2014-Present*

- Member (2014-Present)

Professional Development Courses & Workshops Attended

Raising Resilient Scientists *2024*

National Institutes of Health

Safe Zone Training *2023*

Oklahoma State University - Office of Multicultural Affairs

Early Career Faculty Program *2022*

Oklahoma State University - Institute for Teaching and Learning Excellence