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Current Position

Professor
Department of Pathology and Microbiology
University of Nebraska Medical Center
Omaha, NE

Education

Postdoctoral Fellow, National Institutes of Health, Rocky Mountain Labs, Hamilton, MT	2007-2012
Postdoctoral Associate, University of North Carolina, Chapel Hill, NC	2004-2007
Ph.D., University of Vermont, Burlington, VT	1998-2004
B.S. Biology, University of Notre Dame, Notre Dame, IN	1994-1998

Academic Appointments

Professor	2024-
Associate Professor	2020-2024
Department of Pathology and Microbiology	
University of Nebraska Medical Center	
Omaha, NE	
Associate Professor	2020
Assistant Professor	2013-2020
Department of Microbiology and Immunology	
Indiana University School of Medicine	
Indianapolis, IN	

Administrative Positions

Co-Director	2020
IUSM BSL3 Resources Laboratory	
Indiana University School of Medicine	
Indianapolis, IN	
Assistant Director, Immunology and Infectious Diseases Training Program (NIH T32)	2019-2020
Indiana University School of Medicine	
Indianapolis, IN	

Honors and Awards

Mercator Fellow of the German Research Foundation, University of Erlangen	2024
UNMC iLEAD Leadership Development Program	2022
AAMC Early Career Women Faculty Leadership Development Seminar	2019
Acceptance granted by the AAMC Application Selection Committee	
Sponsored by IUSM Faculty Affairs, Professional Development, and Diversity	

Trustees Teaching Award, Indiana University	2018
Randy S. Rosenthal Student Advocacy Award, IUSM	2017
IUSM Outstanding Postdoc Mentor Award	2016
IUSM Elwert Award in Medicine	2015
Supports medical research that is likely to improve IUSM's reputation in the medical and scientific community	
NIH Fellows Award for Research Excellence	2011
Vermont EPSCoR Graduate Research Fellowship	2001

Professional Memberships and Activities

American Society for Rickettsiology	President	2023-2024
American Society for Rickettsiology	Vice President	2022-2023
American Society for Rickettsiology	Councilor-at-large	2018-2019
American Society for Rickettsiology	Member	2008-present
American Society for Microbiology	Member	2016-present
American Heart Association	Member	2013-present
American Society for Cell Biology	Member	2002-present

Professional Development

iLEAD Leadership Development Program	UNMC	2022-2023
Succession and Leadership Development Program	IUSM	2019-2020
Early Career Women Faculty Leadership Development	AAMC	2019
Cell Modeling Hackathon	NSF/UCSF	2019
Cultural Awareness in Mentoring	Nat'l Mentoring Network	2018
Nat'l Mentoring Network Facilitator Training	Nat'l Mentoring Network	2018
Unlocking Your Inner Mentor	IUSM	2018

Editorial Service

Editor

Journal of Biological Chemistry	Editorial Board Member	2024-
Microbiology Spectrum	Editor	2022-
Frontiers in Cellular and Infection Microbiology	Editor	2022-
PLoS One	Editor	2018-
Frontiers in Immunology	Editor	2021
PLoS Pathogens	Guest Associate Editor	2021,2022
Springer Book on Obligate Intracellular Pathogens	Editor	2020-2022
PLoS One/PLoS Pathogens Special Issue: "Microbes and Host Cell Membrane Interactions"	Guest Editor	2019-2020
Frontiers in Cellular and Infection Microbiology	Guest Editor	2016-2017
Special Topics Issue "Cell Biology and Bacteriology of <i>Chlamydia</i> , <i>Rickettsia</i> , and <i>Coxiella</i> "		

Manuscript Review

Regular manuscript review for journals including Nature Communications, EMBO Molecular Medicine, PNAS, eLife, Journal of Biological Chemistry, PLoS Pathogens, PLoS Neglected and Tropical Diseases, mBio, Microbiology Spectrum, mSphere

Grant Review

School/Regional

UNMC Graduate Studies Fellowship study section	2024
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Nebraska INBRE DRPP study section	2022
IUSM Research Support Funds Grant	2018, 2019
Indiana CTSI core facilities grant	2015
IUSM Center for Diabetes and Metabolic Diseases, pilot grant	2015

National

NIH Bacterial Virulence Study section, permanent member	7/2024-
NIH 2024/01 ZAI1 MMO-D (J1) Support for Research Excellence (SuRE)	11/2023
NIH 2023/10 ZAI1 FDS-M Genetic Tools for Rickettsia and Rickettsial Diseases	5/2023
NIH COBRE Center in Chemical Biology of Infectious Diseases (ad hoc)	8/2022
NIH ZRG1 IDIA-Y (80) Topics in Bacterial Pathogenesis	6/2022
NIH ZRG1 IDIA-B (80) Topics in Bacterial Pathogenesis	3/2021
NIH ZRG1 IDM-B (82) Topics in Bacterial Pathogenesis	7/2020
NIH BACP Bacterial Pathogenesis study section	10/2019
NIH ZRG1 IDM-B (80) Topics in Bacterial Pathogenesis	4/2019
NIH ZRG1 IDM-B (80) Topics in Bacterial Pathogenesis	11/2018
NIH HIBP Host Interactions with Bacterial Pathogens	2/2018
AHA Peer Review Committee Microbiology BSc2	2016-2017
NSF CAREER Award review	2016
USDA Study Section – Animal Panel A	6/2013

International

Swiss National Science Foundation	5/2022
Swiss National Science Foundation	12/2021
French National Research Agency study section	5/2018
French National Research Agency pre-proposal review	12/2015
French National Research Agency study section	6/2014

Committee Assignments and Administrative service

University Service

Department

Educational and Meritorious Awards Review Committee	Member	2024-present
Virology Search Committee	Chair	2022-2023
Departmental Retreat Planning Committee	Member	2022-2023
Faculty Mentorship Committee	Member	2022-2023
Microbiology Curriculum Program Review	Member	2018
Education Policy Committee	Member	2017-2020
Pathogenesis Journal Club	Organizer	2016-2020
Virology Search Committee	Member	2015-2016
Student Award Committee	Member	2015
Equipment Committee	Member	2014-2020
Departmental Seminar Series Committee	Chair	2014-2015

School

BMB T32 Recruitment and Selection Committee	Member	2024-present
UNMC Faculty Mentoring Committee	Member	2023-present
Career Development and Education Committee	Member	2022-2023
IBC BSL3 SARS-CoV subcommittee	Member	2020
Budgetary Affairs subcommittee, Faculty Steering Committee	Member	2019-2020
Women's Advisory Council	Member	2019-2020

IUSM Electronic Notebook rollout	Pilot Lab	2018-2019
Faculty Steering Committee	Dep't rep.	2018-2020
Immunology and Infectious Diseases Training Program (T32)	Assistant Director	2018-2020
Summer Undergraduate Research Experience Admissions	Member	2018-2020
IUSM Graduate Curriculum Committee	Chair	2016-2017
SRPAM poster session	Judge	2016
IUSM Postdoc Advisory Committee	Member	2015-2020
Postdoc Research Symposium Poster Session	Judge	2015, 2016
Biochemistry Research Day Poster Session	Judge	2014
MSTP MD/PhD admission interviews	Interviewer	2015-2020
Search Committee, Director of Office of Postdoctoral Affairs	Member	2014
IBMG Curriculum Committee	Member	2014-2017
IBMG Professional Development Panels (4)	Panelist	2013-2016
IBMG admission interviews	Interviewer	2013-2020

Professional Service

NIH Junior Investigator Atlas Builders Career Planning	Panelist	2023
American Society for Rickettsiology Executive Council	Vice President	2022-2023
International Intracellular Bacteria Meeting 2022	Session chair	2022
Microbiology Spectrum	Editor	2022
NIH Career Symposium – Faculty at Medical Schools	Panel member	2021
American Society for Rickettsiology Meeting	Organizing com.	2019
American Society for Rickettsiology Meeting	Session chair	2019
American Society for Rickettsiology Meeting Mentoring Panel	Panel Member	2019
American Society for Rickettsiology Executive Council	Councilor-at-large	2018-2019
International Congress on Rickettsia	Session chair	2017
Indiana Biology of Intracellular Pathogens retreat	Co-chair	2017, 2018
NIH Career Symposium “Success as a Faculty Member”	Panel member	2016
Midwest Microbial Pathogenesis Conference	Institutional Rep.	2016-2020
American Society of Rickettsiology Annual Meeting	Session chair	2015
Midwest Microbial Pathogenesis Conference 22 nd Annual Meeting	Organizing com.	2015

Educational Activities

Teaching and Mentoring Awards

Trustees Teaching Award, Indiana University	2018
Randy S. Rosenthal Student Advocacy Award, IUSM	2017
IUSM Outstanding Postdoc Mentor Award	2016

Training Program Committees

BMB T32 Recruitment and Selection Committee	Memer	2024-present
Immunology and Infectious Disease Training Program (T32)	Assistant Director	2018-2020
Immunology and Infectious Disease Training Program (T32)	Preceptor	2013-2022
IUSM Graduate Program Curriculum Committee	Chair	2016-2017
IUSM Graduate Program Curriculum Committee	member	2014-2017

Didactic Teaching

Course Title	Role (# sessions)	Year
Bacterial Pathogenesis	Lecturer (1/year)	2021, 2023
Cell Biology of Infection	Lecturer (2)	2022

Foundations: Cell Biology	Lecturer (1/year)	2019, 2020
Host Defense	Lecturer (4/year)	annually 2017-2020
Concepts of infection	Lecturer (1/year)	annually 2015-2020
Current Topics Microorganisms	Lecturer (1/year)	2014, 2016, 2018
Cellular Basis of Systems Biology	Lecturer (1/year)	2017, 2018
Medical Microbiology	Lecturer (4/year)	annually 2014-2016
Concepts of Pathogenesis	Lecturer (1)	2014

Small Group Teaching

Course Title	Role (# sessions)	Year
Host Defense	Facilitator (4)	annually 2017-2020
Cell and Molecular Biology	Facilitator (3)	2015
Clinical Problem Solving	Facilitator (2)	2015
Clinical Problem Solving	Facilitator (5)	2014

Courses Directed

Translating Foundational Science to Contemporary Knowledge: Disease and Host Defense Section	Fall 2019
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Other Educational Activities

Senior Comprehensive Examination, Earlham College	Examiner	Spring 2022
Senior Comprehensive Examination, Earlham College	Examiner	Spring 2017

Graduate Student CommitteesPhD

Aariana Tucker	PhD student	2024-present
Maddie Love	PhD student	2024-present
Charles Ugwu	PhD student, Washington State U	2024-present
Yamilex Acevedo-Sanchez	PhD student, MIT (external for thesis defense)	2024
Sushmita Adhikari	PhD student	2023-present
Arif Sadi	PhD student	2023-present
Delia Omar	PhD student	2023-present
Haley Knowles	PhD student	2022-present
Devin Frisby	PhD student	2022-present
Saumya Bhatt	PhD student	2022-present
Monisha Alla	PhD student	2022-present
Maggie Sladek	PhD student	2021-present
Rosalie Warner	PhD student	2021-2022
Natalie Sturd exam committee	MD/PhD student	2021
Brigham Killips	PhD student	2021-present
Emily Heaton	PhD student	2021-present
Ray Widner	PhD student	2020-present
Mebratu Bitew	PhD student, University of Melbourne	2019 (exam)
Emily Stanczak	PhD student	2019-2020
Rashmita Basu	PhD student	2019-2020
Adeeba Dhalech	PhD student	2018-2020
Noopur Dave	PhD student	2018-2022
Ellie Fernander	MD/PhD student	2018-2022
Baleigh Schuler	MD/PhD student	2018-2022
Kylie Jacobs	PhD student	2017-2020
Will Blakely	PhD student	2016-2020

Jennifer Martynowicz	MD/PhD student	2016-2019
Kaice LaFavers	PhD student	2014-2017
Anna Justis	PhD student	2014-2017
Julie Brothwell	PhD student	2013-2016

Masters

Piya Das Ghatak	Masters student	2019-2020
Steven Wooten	Masters student, Marian University	2019-2020
Rochelle Ratanayake	Masters student	2018-2020
Cameron Melton	Masters student, IUPUI	2017-2019
Amberly Grothe	Masters student	2017-2019
Jocelyn Hanquier	Masters student	2017-2019

Mentoring

High School

Shasha Rayamajhi	UNMC High School Alliance	2021-2022
Mahesh Gupta	Project SEED summer program	2019

Undergraduate

Emma Foley	INBRE summer student	2023
Samantha Mercer	INBRE summer student	2021
Britney de Leon	INBRE summer student	2021
Annemarie Joseph	summer student volunteer	2019
Sarina Martinez-Benevidez	IUSM Summer Research Experience	2018
Patricia Esparza	IUPUI Senior Capstone	2016

Graduate

Charlie Porto	Masters student	8/24-present
Sushmita Adhikari	PhD student	1/23-present
Arif Sadi	PhD student	1/23-present
Maggie Sladek	PhD student	10/21-present
Brigham Killips	PhD student	3/21-present
Emily Heaton	PhD student	2/21-present
Piya Das Ghatak	Masters student	5/19-8/20
Rochelle Ratnayake	Masters student	8/18-7/20
Current position: PhD student, Michigan State University		
Baleigh Schuler	MD/PhD student	4/18-4/22
Current position: finishing MD studies		
Brianne Zapata	Masters student	6/15-4/17
Current Position: Laboratory Support Associate, Loyola Marymount University, Los Angeles, CA		
Anna Justis	PhD student	5/14-2/18
Current Position: Scientific writer, Dana Farber Cancer Institute		

Postdoctoral Associates

Peyton VanWinkle		3/24-present
Rajendra Angara		12/18-present
Tatiana Clemente		7/16-3/23
Current Position: Scientist, Celerion		
Dhritiman Samanta		9/15-6/20
Current Position: Assistant Professor, Midwestern University School of Osteopathic Medicine		
Minal Mulye		2/14-7/17
Current Position: Assistant Professor, Philadelphia College of Osteopathic Medicine		

Faculty

Pengwei Zhang	Assistant Professor	3/24-present
Kelsi Sandoz	Assistant Professor (Cornell University)	8/22-present
Beth Beam	Assistant Professor	6/22-present
Leonardo Augusto	Assistant Professor	10/20-present
Sabrina Absalon	Assistant Professor (IUSM)	10/19-2022

Oral Presentations

Local Invited Seminars

VA Seminar Series, UNMC	2022
Department of Microbiology and Molecular Biology, Creighton University	2021
Microbiology and Immunology Basic Research Seminar Series, UNMC	2021
Infectious Diseases Research Conference, IUSM	2019
Department of Physiology, IUSM	2018
Pulmonary Research Conference	2016
Pulmonary Research Conference	2015
Department of Physiology	2015
Department of Biochemistry	2014
Department of Biology, IUPUI	2014
Pulmonary Research Conference, IUSM	2013

National Invited Seminars

MIT, Department of Biology	2024
University of Illinois, Chicago, Department of Pathology	2023
University of Iowa, Department of Microbiology and Immunology	2023
Washington State University, Paul G. Allen School of Global Health	2023
Oklahoma State University, Dept. Microbiology and Molecular Genetics	2022
University of Texas at San Antonio, Dept. Molecular Microbiology and Immunology	2022
*invited by graduate students	
Kansas State University, Division of Biology	2022
American Society for Rickettsiology : Spotlight on Rickettsia virtual seminar series	2021
Virginia Commonwealth, Department of Microbiology and Immunology	2020
*postponed due to COVID	
Texas A&M, Department of Microbial Pathogenesis and Immunology	2020
University of Virginia, Department of Microbiology, Immunology, and Cancer	2020
University of Louisville, Department of Microbiology and Immunology	2020
Southern Illinois University, Department of Biology	2019
University of Nebraska Medical Center, Department of Pathology and Microbiology	2019
University of Toledo College of Medicine, Department of Microbiology and Immunology	2018
University of Notre Dame, Department of Biology	2017
University of Connecticut, Department of Molecular and Cellular Biology	2016
University of Vermont, Department of Microbiology and Molecular Genetics	2016
University of Maryland School of Medicine, Rickettsia group	2016
University of Kentucky, Department of Microbiology, Immunology, Molecular Genetics	2016
Purdue University, Department of Veterinary Pathobiology	2014
Research Institute at Nationwide Children's Hospital, Cincinnati, OH	2013

International Invited Seminars

University of Resensburg, Germany	2024
University of Erlangen, Germany	2024
University of Montpellier, Montpellier, France	2022

Invited Conference Talks

Celebrating Discovery in <i>Borrelia</i> , <i>Coxiella</i> , and <i>Yersinia</i> Biology: Contributions from RML and Beyond	2023
American Society for Rickettsiology 32 rd Annual Meeting	2023
FASEB Microbial Pathogenesis Declined due to scheduling conflict	2023
International Intracellular Bacteria Meeting	2022
American Society for Microbiology Missouri Valley Branch annual meeting	2022
American Society for Rickettsiology Annual Meeting	2019
International Congress on Rickettsia and other Intracellular Bacteria	2017
American Society for Rickettsiology Annual Meeting	2016
American Society for Cell Biology Midwest Trafficking Symposium	2016
20 th Annual Midwest Microbial Pathogenesis Conference	2013

Conference presentations by mentees in the Gilk Lab (only presenter is listed)

Poster presentations

Arid Sadi, American Society for Rickettsiology *travel award	2024
Sushmita Adhikari, ASM Microbe	2024
Maggie Sladek, ASM Missouri River Branch Annual Meeting	2024
Arif Sadi, ASM Missouri River Branch Annual Meeting *poster awards	2024
Emily Heaton, Midwest Microbial Pathogenesis Conference *MMPC Abstract award	2023
Maggie Sladek, American Society for Rickettsiology *ASR Travel award	2023
Brigham Killips, American Society for Rickettsiology	2023
Maggie Sladek, Midwest Microbial Pathogenesis Conference	2022
Brigham Killips, Midwest Microbial Pathogenesis Conference	2022
Tatiana Clemente, Gordon Conference on Microbial Toxins and Pathogenicity	2022
Rajendra Angara, FASEB Lipid Droplet Biology Conference	2022
Baleigh Schuler, American Society for Rickettsiology	2019
Rochelle Ratnayake, Midwest Microbial Pathogenesis Conference	2019
Dhritiman Samanta, Midwest Microbial Pathogenesis Conference	2019
Baleigh Schuler, Midwest Microbial Pathogenesis Conference	2019
Dhritiman Samanta, American Society for Cell Biology annual meeting	2018
Dhritiman Samanta, Midwest Microbial Pathogenesis Conference	2017
Anna Justis, Midwest Microbial Pathogenesis Conference	2017
Dhritiman Samanta, Midwest Microbial Pathogenesis Conference	2017
Minal Mulye, Midwest Microbial Pathogenesis Conference	2016
Anna Justis, Midwest Microbial Pathogenesis Conference	2016
Dhritiman Samanta, Annual Midwest Microbial Pathogenesis Conference	2016
Anna Justis, American Society for Rickettsiology	2015
Minal Mulye, Midwest Microbial Pathogenesis Conference *Poster award	2015
Anna Justis, Midwest Microbial Pathogenesis Conference *Poster award	2015
Minal Mulye, IUSM Postdoc Symposium *Poster award	2015

Minal Mulye, Midwest Microbial Pathogenesis Conference	2014
Anna Justis, 21 st Midwest Microbial Pathogenesis Conference, Chicago, IL	2014

Oral presentations

Rajendra Angara, American Society for Rickettsiology	2024
Rajendra Angara, ASM Missouri River Branch Meeting	2024
Sushmita Adhikari, ASM Missouri River Branch Meeting	2024
Brigham Killips, ASM Missouri River Branch Meeting	2024
Rajendra Angara, Cold Spring Harbor Pathogenesis Meeting	2023
Rajendra Angara, ASM Missouri River Branch Meeting	2023
Rajendra Angara, Midwest Microbial Pathogenesis Conference	2022
Tatiana Clemente, 30 th Meeting of the American Society for Rickettsiology	2019
*ASR travel award	
Tatiana Clemente, Annual Meeting of the American Society of Microbiology	2019
*IUSM travel award	
Dhritiman Samanta, 2 nd Annual Indiana Biology of Intracellular Pathogens retreat	2018
Dhritiman Samanta, IUSM Postdoctoral Research Symposium	2018
Tatiana Clemente, 25 th Annual Midwest Microbial Pathogenesis Conference	2018
Minal Mulye, Gordon Research Conference for Molecular and Cellular biology of Lipids	2017
*GRC travel award	
Tatiana Clemente, 24th Annual Midwest Microbial Pathogenesis Conference	2017
Minal Mulye, FASEB Lipid Droplets on move from health to disease	2016
Minal Mulye, American Society for Cell Biology Midwest Trafficking Symposium	2015

Patents

Provisional Patent

Airway Epithelial Therapy To Treat Viral Respiratory Infection

IU Reference Number: 2020-107-04

Application Number: 63/117,623

Filing Date: November 24, 2020

Grants

Active

1R01 AI155560 (Gilk/Omsland co-PI)	7/13/22-7/12/27	2.4 cal mo
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NIH/NIAID	\$2,868,448 (\$1,863,612 direct)
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Coxiella survival mechanisms in the acidic intracellular niche

The major goal of this project is to identify how *Coxiella* regulates the pH of the *Coxiella*-containing vacuole, as well as how the bacteria respond to acid stress.

Role: contact PI

R21 AI173990-01	11/4/22-11/3/24	1.8 cal mo
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NIH/NIAID	\$422,225 (\$275,000 direct)
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Coxiella secreted proteins mediating inter-organelle membrane contact sites

This project will characterize a new family of secreted *Coxiella* proteins which bind to the host ER to form membrane contact sites with other host organelles.

Role: PI

1187205 2/1/24-7/31/24 0 cal mo
 Burroughs Wellcome Fund \$5,000
33rd Meeting of the American Society for Rickettsiology
 Funds to support to 2024 meeting
 Role: PI

R13AI183714 7/1/24-6/30/27 0.12 cal mo
 NIH/NIAID \$33,000
Annual Meeting of the American Society for Rickettsiology
 Funds to support to 2024, 2025, and 2026 meetings
 Role: PI

2024-02686 4/1/24-3/31/25 0.12 cal mo
 USDA/NIFA \$50,000
33rd Meeting of the American Society for Rickettsiology
 Funds to support to 2024 meeting
 Role: PI

Completed

14SDG18420034 01/01/14-12/31/17 1.20 cal mo
 American Heart Association \$308,000 (\$280,000 direct)
Role of cholesterol in host cell colonization by the Q fever agent Coxiella burnetii
 The goal of this Scientist Development Grant was to identify how cholesterol affects formation of the *Coxiella burnetii* PV through live cell imaging and acquisition of different cellular markers to the PV.

N/A 7/1/14-6/30/15 0.60 cal mo
 Showalter Research Trust Fund \$60,000 (\$50,000 direct)
Manipulation of the endoplasmic reticulum by the bacterial pathogen Coxiella burnetii
 The primary goal of this project was to identify how a host cell cholesterol-binding protein, ORP1L, is recruited to the *Coxiella* vacuole, as well as if ORP1L-mediated membrane contact sites between the *Coxiella* vacuole and the endoplasmic reticulum (ER) are essential for *Coxiella* growth.
 Role: PI

R21 AI121786 12/01/15-11/30/18 (NCE) 1.20 cal mo
 NIH/NIAID \$422,587 (\$275,000 direct)
Reprogramming of host cell cholesterol homeostasis by Coxiella burnetii
 The goal of this study was to identify both bacterial and host cell proteins involved in changes in cholesterol homeostasis during *Coxiella* infection, using RNAseq of infected cells and a mutant transposon library.
 Role: PI

16POST2725015 (Mulye) 1/1/16-8/7/17 0 cal mo
 American Heart Association \$127,000
Lipid droplets in Q fever endocarditis
 This postdoctoral fellowship was awarded to Minal Mulye, a postdoctoral associate in my lab. Dr. Mulye currently has her own independent research program at Philadelphia College of Osteopathic Medicine.
 Role: sponsor/mentor

19POST34450220 (Samanta) 1/1/19 – 7/1/20 0 cal mo
 American Heart Association \$127,000
Elucidating the mechanisms behind Coxiella burnetii regulation of vesicular pH
 This is a postdoctoral fellowship to Dhritiman Samanta, a postdoctoral fellow in my lab. Dr. Samanta

currently has own independent research program at Midwestern University.

Role: sponsor/mentor

R21 AI139992-01 (Gilk/Omsland) 5/9/2018 - 4/30/21(NCE) 1.20 cal mo
NIH/NIAID \$455,688 (\$275,000 direct)

Coxiella survival mechanisms in the acidic intracellular niche

The major goal of this project is to identify how *Coxiella* regulates the pH of the *Coxiella*-containing vacuole, as well as how the bacteria respond to acid stress.

Role: contact PI

834525 (Clemente) 4/1/21 – 3/30/23 0 cal mo
American Heart Association \$149,080

Coxiella burnetii modulation of IL-17 signaling

This is a postdoctoral fellowship to Tatiana Clemente, a postdoctoral fellow in the Gilk Lab.

Role: sponsor/mentor

R21 AI149723 (Gilk) 7/1/20 - 6/30/23 1.20 cal mo
NIH/NIAID \$455,688 (\$275,000 direct)

Intracellular IL-17 signaling during Coxiella burnetii infection

This project will elucidate how *Coxiella* blocks IL-17 stimulated chemokine secretion in macrophages.

Role: PI

906475 (Angara) 1/1/22 – 12/31/23 0 cal mo
American Heart Association \$145,020

Coxiella-mediated regulation of lipid droplet metabolism in Q fever endocarditis

This is a postdoctoral fellowship to Rajendra Angara, a postdoctoral fellow in the Gilk Lab.

Role: sponsor/mentor

R01 AI139176 (Gilk) 5/1/2018 - 4/30/23 4 cal mo
NIH/NIAID \$2,164,333 (\$1,373,220 direct)

Coxiella manipulation of cholesterol in the intracellular niche

The goal of this project is to elucidate molecular mechanisms behind *Coxiella*'s ability to regulate host cholesterol levels, including cholesterol transfer through membrane contact sites and modification of sterols by *Coxiella* sterol-modifying enzymes.

Role: PI

Awards Declined

AHA Transformational Project Award 7/1/2018-6/30/2021 1.20 cal mo

Novel sterol modifying enzymes of the Q fever agent Coxiella burnetii

*declined due to overlap with successful R01

Publications (Peer Reviewed)

1. Donahue, CG, Carruthers VB, **Gilk SD**, and GE Ward. 2000. The *Toxoplasma* homolog of *Plasmodium* apical membrane antigen-1 (AMA-1) is a microneme proteins secreted in response to elevated intracellular calcium levels. *Molecular and Biochemical Parasitology* 111:15-30.
2. Gaskins E., **Gilk SD**, DeVore N, Mann T, Peck L, Ward GE, and C Beckers. 2004. Identification of the membrane receptor of a class XIV myosin in *Toxoplasma gondii*. *Journal of Cell Biology* 165:50-57.

3. Porcella SF, Raffel SJ, Anderson Jr. DE, **Gilk SD**, Bono JL, Schrumph ME, and TG Schwan. 2005. The Variable Tick Protein (Vtp) in Two Genomic Groups of the Relapsing Fever Spirochete *Borrelia hermsii* in Western North America. *Infection and Immunity* 73:6647-6658.
4. **Gilk SD**, Raviv Y, Hu K, Murray JM, Beckers C, and GE Ward. 2006. Identification of PhIL1, a novel cytoskeletal protein of the *Toxoplasma gondii* pellicle, through photosensitized labeling with [¹²⁵I]-5-Iodonaphthalene-1-azide (INA). *Eukaryotic Cell* 5(10):1622-1634
5. **Gilk SD**, Gaskins E, Ward GE, and C Beckers. 2009. GAP45 phosphorylation controls assembly of the *Toxoplasma* Myosin XIV Complex. *Eukaryotic Cell* 8(2): 190-196
*cover
6. Beare PA, Unsworth N, Andoh M, Voth DE, Omsland A, **Gilk SD**, Williams K, Sobral B, Porcella SF, Samuel JE, and RA Heinzen. 2009. Genome sequencing reveals extensive transposon-mediated genomic plasticity within the genus *Coxiella*. *Infection and Immunity* 77(2):642-56
7. **Gilk SD**, Beare PA, and RA Heinzen. 2010. *Coxiella burnetii* expresses a functional $\Delta 24$ sterol reductase. *Journal of Bacteriology* 192(23):6154-6159.
8. Dotzler-Barkhuff W, **Gilk SD**, Whitmarsh R., Tilley LD, Hunter C, and GE Ward. 2011. Targeted disruption of TgPhIL1 in *Toxoplasma gondii* results in altered parasite morphology and fitness. *PLoS One* 6(8):e23977
9. #Beare PA, #**Gilk SD**, Larson CL, Hill J, Stead CM, Howe D, Omsland A, Cockrell DC, Voth DE, and RA Heinzen. 2011. The Dot/Icm type IVB secretion system requirements for *Coxiella burnetii* growth in human macrophages. *mBio* 2(4): e00175-11.
*journal spotlight
#equal contribution
10. **SD Gilk**. 2012. The role of lipids in *C. burnetii* infection. *Coxiella burnetii: Linking structure to function*. Edited by R. Toman, J. L. Mege, R.A. Heinzen, and J.E. Samuel. Adv Exp Med Biol. 984:199-213.
11. Beare PA, Larson CL, **Gilk SD**, and RA Heinzen. 2012. Two systems for targeted gene deletion in *Coxiella burnetii*. *Applied and Environmental Microbiology* Jul; 78(13):4580-9.
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