Nick D. Pokorzynski, Ph.D.

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EDUCATION

2015 – 2020 Ph.D., Molecular Biosciences
Washington State University
College of Veterinary Medicine
School of Molecular Biosciences

2009 – 2013 B.Sc., Biochemistry, Molecular Biology/Biotechnology
Michigan State University
College of Natural Science
Department of Biochemistry and Molecular Biology

RESEARCH AND PROFESSIONAL EXPERIENCE

2025 – Present Assistant Professor, Tenure-track
Department of Microbiology
Oregon State University, Corvallis, OR

2021 – 2025 Postdoctoral Research Associate
Project: How bacteria govern metabolism in infection-relevant environments
Department of Microbial Pathogenesis
Yale School of Medicine, New Haven, CT
Advisor: Dr. Eduardo Groisman

2020 – 2021 Postdoctoral Research Associate
Project: Control of pathogen nutritional stress responses by host cells
Department of Pathology and Microbiology
University of Nebraska Medical Center, Omaha, NE
Advisor: Dr. Rey Carabeo

2019 (4 mos) Graduate Student Intern
Project: Modulation of host signaling pathways by the microbiome during colitis
Research and Early Development (gRED), Biomarker Discovery OMNI
Genentech, Inc., South San Francisco, CA
Advisor: Dr. Mary Keir, Dr. Jordan Mar

2015 – 2020 Graduate Research Assistant
Project: Iron-dependent regulation of tryptophan biosynthesis in *Chlamydia*
School of Molecular Biosciences, College of Veterinary Medicine
Washington State University, Pullman, WA
Advisor: Dr. Rey Carabeo

2012 – 2013 Undergraduate Laboratory Assistant
Project: Characterization of *Chlamydomonas* lipid biosynthesis mutants

Department of Biochemistry and Molecular Biology, College of Natural Science
Michigan State University, East Lansing, MI
Advisor: Dr. Christoph Benning

TEACHING EXPERIENCE

2017 (5 mos) Teaching Assistant
Washington State University, Pullman, WA
Course: MBIOS 430 – Combined Immunology and Virology Laboratory
Advisor: Dr. Phil Mixter

FELLOWSHIPS AND EXTRAMURAL FUNDING

2018 - 2020 NIH Ruth L. Kirschstein Predoctoral National Research Service Award
F31-AI136295
Direct Costs: $94,130.00

2015 – 2017 NIH Protein Biotechnology Training Program Trainee
T32-GM008336

2015 – 2017 Achievement Reward for College Scientists (ARCS) Fellowship
Seattle Chapter

MANUSCRIPTS IN PREPARATION

Pokorzynski ND, Sams-Dodd EC, Jones KA, Esneault C, Campagna SR, Groisman EA. Master virulence regulator controls *Salmonella* metabolism by commanding cyclic AMP synthesis. *Submitted.*

Alla MR, **Pokorzynski ND,** Lee J, Ouellette SP, Carabeo RA. *Chlamydia* iron starvation links nutritional immunity to pathogen recognition. *Submitted*.

Pokorzynski ND & Groisman EA. Physiological decrease in RNA polymerase amounts promotes specific stress response and renders *Salmonella* vulnerable to rifampicin. *In Preparation*.

PEER-REVIEWED PUBLICATIONS

9. **Pokorzynski ND,** Jones KA, Campagna SR, Groisman EA (2025) Cytoplasmic Mg^{2+} supersedes carbon source preference to dictate *Salmonella* metabolism. *Proc Natl Acad Sci USA*. 122 (13) e2424337122.

8. Chowdhury NB, **Pokorzynski ND,** Rucks EA, Ouellette SP, Carabeo RA, Saha R (2024) Metabolic model guided CRISPRi reveals a central role for phosphoglycerate mutase in *Chlamydia trachomatis* persistence. *mSystems.* 0:e00717-24. https://doi.org/10.1128/msystems.00717-24

7. **Pokorzynski ND** & Groisman EA (2023) How bacterial pathogens coordinate appetite with virulence. *Microbiology and Molecular Biology Reviews.* doi: https://doi.org/10.1128/mmbr.00198-22

6. Krypotou E, Townsend II GE, Gao X, Tachiyama S, Liu J, **Pokorzynski ND**, Goodman AL, Groisman EA (2023) Bacteria require phase separation for fitness in the mammalian gut. *Science.* 379, 6637.

5. Mar JS, Ota N, **Pokorzynski ND,** Peng Y, Jaochico A, Sangaraju D, Skippington E, Lekkerkerker A, Rothenberg ME, Tan M-W, Yi T, Keir M (2023) IL-22 alters gut microbiota composition and function to increase aryl hydrocarbon receptor activity in mice and humans. *Microbiome.* 11, 47.

4. **Pokorzynski ND,** Alla MR, Carabeo RA (2022) Host cell amplification of nutritional stress contributes to persistence in *Chlamydia trachomatis*. *mBio*. doi: https://doi.org/10.1128/mbio.02719-22

3. **Pokorzynski ND,** Hatch ND, Ouellette SP, Carabeo RA (2020) The iron-dependent repressor YtgR is a tryptophan-dependent attenuator of the *trpRBA* operon in *Chlamydia trachomatis*. *Nat Commun.* 11, 6430.

2. **Pokorzynski ND,** Brinkworth AJ, Carabeo RA (2019) A bipartite iron-dependent transcriptional regulation of the tryptophan salvage pathway in *Chlamydia trachomatis. eLife.* 8:e42295.

1. **Pokorzynski ND,** Thompson CC, Carabeo RA (2017) Ironing Out the Unconventional Mechanisms of Iron Acquisition and Gene Regulation in *Chlamydia*. *Front Infect Cell Microbiol.* 7, 1-19.

MEDIA

Infection control: How a pathogen survives a hostile environment. (2025) *Yale News.* https://news.yale.edu/2025/04/14/infection-control-how-pathogen-survives-hostile-environment

Pokorzynski ND (2021) The iron-dependent repressor YtgR is a tryptophan-dependent attenuator of the *trpRBA* operon in *Chlamydia trachomatis.* Recorded seminar. JRNLClub. https://jrnlclub.org/research-films/ytgr-tryptophan-chlamydia

Pokorzynski ND, Carabeo RA (2020) Behind the Paper: *Atypical Attenuation.* Nature Portfolio Microbiology Community. https://naturemicrobiologycommunity.nature.com/posts/atypical-attenuation

Chlamydia under siege (2019) *eLife* Digest. https://elifesciences.org/digests/42295/chlamydia-under-siege

HONORS AND AWARDS

2021	ASM Postdoctoral Travel Award World Microbe Forum
2021	First Place Oral Presentation Postdoctoral Category Missouri/Missouri Valley ASM Branch Meeting
2018	Trainee Travel Award Wind River Conference on Prokaryotic Biology
2018	Dr. Bruce Gibbins Travel Award Fellowship School of Molecular Biosciences Washington State University
2018	Sponsorship to attend AAAS CASE Workshop Washington, D.C. Washington State University

2017	Maloney Entrepreneur's Workshop Award Washington State University
2017	Second Place Oral Presentation Departmental Three-minute Thesis Competition Washington State University

AD-HOC PEER REVIEW

2025	*Frontiers in Cellular and Infection Microbiology*
2024	*Gut Microbes* *Microbiological Research*
2023	*Immunity, Inflammation and Disease* *Frontiers in Cellular and Infection Microbiology: Microbiology and Pathogenesis of* Chlamydia*,* Coxiella*, and* Rickettsia
2022	*Frontiers in Cellular and Infection Microbiology*
2021	*Frontiers in Immunology*

ORGANIZATIONS

2022 - 2023	eLife Community Ambassador Chaired sessions: ECR Wednesday Webinar: "Science policy in action" Webinar report: https://bit.ly/3SRybJn ECR Wednesday Webinar: "Getting involved in global science policy" Webinar report: https://bit.ly/3Vh9ub4
2019 – 2021	Member American Society for Microbiology
2018 – 2020	Co-founder Graduate and Professional Student Science Policy Initiative Positions held: Vice President, Treasurer Washington State University, Pullman WA
2018	Co-founder Washington Science Policy Network
2016 – 2020	Member American Association for the Advancement of Science

SERVICE

2025-2026	Graduate Recruitment and Admissions Committee Department of Microbiology

Oregon State University, Corvallis, OR

2025-2026 Seminar Committee
Department of Microbiology
Oregon State University, Corvallis, OR

2024-2025 Chair
Mechanisms of Microbial Transcription
Gordon Research Seminar
Southern New Hampshire University, Manchester, NH

Funding obtained:
NSF 2515943, Conference: 2025 Mechanisms of Microbial Transcription GRC/GRS
Award Amount: $18,000
ARO W911NF2510064, 2025 Mechanisms of Microbial Transcription Gordon Research Conference and Gordon Research Seminar
Award Amount: $7,500

2024 Discussion Leader – Career Panel
Microbial Stress Response Gordon Research Seminar
Mount Holyoke College, South Hadley, MA

2018 – 2019 Vice President
NIH Protein Biotechnology Training Program
Washington State University, Pullman WA

2017 – 2018 Forum Secretary
NIH Protein Biotechnology Training Program
Washington State University, Pullman WA

MENTORSHIP

Chris Esneault (Undergraduate Student)*
Groisman Lab, Yale School of Medicine, New Haven, CT
Current position: Student in Molecular, Cellular, and Developmental Biology Program, Yale University New Haven, CT
*Awarded the Yale College Dean's Research Fellowship and Trumbull Richter Summer Fellowship, 2024

Elisabeth Sams-Dodd (Visiting Undergraduate Student)
Groisman Lab, Yale School of Medicine, New Haven, CT
Current position: Student at University College London
London, UK

Nick Montimurro (Postgraduate Trainee)
Groisman Lab, Yale School of Medicine, New Haven, CT
Last known position: Anatomy & Physiology/Integrated Physical Science Teacher, Trumbull High School, Trumbull, CT

Tyler Zimmerman (Postgraduate Trainee)
Carabeo Lab, University of Nebraska Medical Center, Omaha, NE

Current position: PhD student in the laboratory of Dr. Rey Carabeo, University of Nebraska Medical Center, Omaha, NE

Monisha Alla (Rotating Graduate Student)
Carabeo Lab, University of Nebraska Medical Center, Omaha, NE
Current position: PhD student in the Department of Pathology and Microbiology, University of Nebraska Medical Center, Omaha, NE

Amanda Stastny (Rotating Graduate Student)
Carabeo Lab, University of Nebraska Medical Center, Omaha, NE
Last known position: PhD student in the laboratory of Dr. Rey Carabeo, University of Nebraska Medical Center, Omaha, NE

Joanna Hurtado (Rotating Graduate Student)
Carabeo Lab, Washington State University, Pullman, WA
Last known position: Master's recipient from the laboratory of Dr. Dana Shaw, Washington State University, Pullman, WA

Ekaterina Berulava (Undergraduate Student)
Carabeo Lab, Washington State University, Pullman, WA
Last known position: Pursuing doctorate of osteopathic medicine at Pacific Northwest University of Health Sciences, Yakima, WA

Kathryn Sutherland (Undergraduate Student)
Carabeo Lab, Washington State University, Pullman, WA
Last known position: DVM student, College of Veterinary Medicine, Washington State University, Pullman, WA

INVITED SEMINARS

2025 Physiological decrease in RNA polymerase amounts promotes *Salmonella* virulence gene transcription. IMB Seminar Series, Institute of Molecular Biology, University of Oregon, Eugene, OR, USA.

2025 How *Salmonella* establishes physiological priorities inside macrophages. Basic Science Seminar Series, Department of Pathology, Microbiology, and Immunology, University of Nebraska Medical Center. Omaha, NE, USA.

CONFERENCE PRESENTATIONS

2025 **Pokorzynski ND,** Groisman EA. Control of RNA polymerase abundance promotes virulence gene transcription in *Salmonella*. Mechanisms of Microbial Transcription Gordon Research Conference. Manchester, NH. Oral Presentation.

2024 **Pokorzynski ND**, Jones KA, Choi J, Campagna SR, Groisman EA. A virulence signal controls carbon metabolism in *Salmonella.* Molecular Genetics of Bacteria and Phages Meeting. Madison, WI. Oral Presentation.

2024 **Pokorzynski ND**, Jones KA, Choi J, Campagna SR, Groisman EA. A virulence signal controls carbon metabolism in *Salmonella.* Microbial Stress Response Gordon Research Conference. South Hadley, MA. Poster Presentation.

2024 **Pokorzynski ND**, Jones KA, Choi J, Campagna SR, Groisman EA. A virulence signal controls carbon metabolism in *Salmonella.* Microbial Stress Response Gordon Research Seminar. South Hadley, MA. Poster Presentation.

2023 **Pokorzynski ND**, Jones KA, Choi J, Campagna SR, Groisman EA. How cytoplasmic magnesium dictates carbon metabolism. Microbial Mechanisms of Transcription – Gordon Research Conference. Manchester, NH. Poster Presentation.

2023 **Pokorzynski ND**, Jones KA, Choi J, Campagna SR, Groisman EA. How cytoplasmic magnesium dictates carbon metabolism. Microbial Mechanisms of Transcription – Gordon Research Seminar. Manchester, NH. Oral Presentation and Poster Presentation.

2022 **Pokorzynski ND**, Groisman EA. How magnesium homeostasis dictates carbon source utilization. Annual Department of Microbial Pathogenesis Retreat. Yale West Campus, Orange, CT. Oral Presentation.

2021 **Pokorzynski ND**, Hatch ND, Ouellette SP, Carabeo RA. The iron-dependent repressor YtgR is a tryptophan-dependent attenuator of the *trpRBA* operon in *Chlamydia trachomatis*. World Microbe Forum. Virtual Conference. iPoster Presentation.

2021 **Pokorzynski ND**, Hatch ND, Ouellette SP, Carabeo RA. The iron-dependent repressor YtgR is a tryptophan-dependent attenuator of the *trpRBA* operon in *Chlamydia trachomatis*. Missouri/Missouri Valley American Society of Microbiology Branch Meeting. Virtual Conference. Oral Presentation.

2020 **Pokorzynski ND**, Hatch ND, Ouellette SP, Carabeo RA. Regulation of an iron-dependent repressor by tryptophan availability attenuates transcription of the tryptophan salvage genes in *Chlamydia trachomatis*. NIAID Fellowship Workshop. Webinar. Online Poster Presentation. *In-person workshop cancelled due to COVID-19.*

2020 **Pokorzynski ND**, Hatch ND, Ouellette SP, Carabeo RA. Regulation of an iron-dependent repressor by tryptophan availability attenuates transcription of the tryptophan salvage genes in *Chlamydia trachomatis*. American Society of Microbiology Microbe 2020. Chicago, IL. Poster Presentation and Rapid Fire Oral Presentation. *Cancelled due to COVID-19*.

2020 **Pokorzynski ND**, Hatch ND, Ouellette SP, Carabeo RA. Regulation of an iron-dependent repressor by tryptophan availability attenuates transcription of the tryptophan salvage genes in *Chlamydia trachomatis*. Missouri/Missouri Valley American Society of Microbiology Branch Meeting. Independence, MO. Oral Presentation. *Cancelled due to COVID-19.* Program: www.asmbranches.org/brmo/documents/2020_MBMVB_ASM_program.pdf

2019 **Pokorzynski ND** & Carabeo RA. A bipartite iron-dependent transcriptional regulation of the tryptophan salvage pathway in *Chlamydia trachomatis.* Chlamydia Basic Research Society. Seattle, WA. Oral and Poster Presentation.

2018 **Pokorzynski ND** & Carabeo RA. The tryptophan salvage pathway is dynamically regulated by the iron-dependent repressor YtgR in *Chlamydia trachomatis*. Wind River Conference on Prokaryotic Biology. Estes Park, CO. Poster Presentation.

2018 **Pokorzynski ND** & Carabeo RA. The tryptophan salvage pathway is dynamically regulated by the iron-dependent repressor YtgR in *Chlamydia trachomatis*. ASM Microbe 2018. Atlanta, GA. Poster Presentation.

2017 **Pokorzynski ND**, Brinkworth AJ, Wildung M, Thompson CC, Carabeo RA. The iron-dependent transcriptional repressor YtgR coordinately regulates iron homeostasis and tryptophan biosynthesis in *Chlamydia trachomatis.* Chlamydia Basic Research Society. Charlotte, NC. Oral and Poster Presentation. *Received Honorable Mention during Jane E. Raulston Poster Award Ceremony.*

2016 Brinkworth AJ, **Pokorzynski ND**, Wildung M, Thompson CC, Carabeo RA. RNA-Sequencing reveals an unexpected link between iron starvation and the tryptophan salvage pathway. European Society of Chlamydia Research. Oxford Town Hall, Oxford, UK. Oral Presentation.

2012 **Pokorzynski ND**, Liu B, Benning C. Complementation of *Chlamydomonas* Lipid Mutants. Summer Undergraduate Research Forum. Michigan State University, East Lansing, MI. Poster Presentation.