Qing Deng, Ph.D.

EDUCATION

BS (Life Sciences), Fudan University; PhD (Microbiology and Molecular Genetics), Medical College of Wisconsin; Postdoctoral Researcher (Medical Microbiology and Immunology), University of Wisconsin

PROFESSIONAL EXPERIENCE

2024-Present, 2024-Present, Professor (Biological Sciences), Purdue University; 2020-2024, Associate Professor (Biological Sciences), Purdue University; 2014-2020, Assistant Professor (Biological Sciences), Purdue University

PROFESSIONAL ACTIVITIES

Academia: 2014-2019, Biosafety Committee, Purdue University; 2019-present, Transgenic and Genome Editing Facility Faculty Advisory Committee, Purdue University; 2017-present, Bindley Flow Cytometry and Cell Separation Facility Faculty Advisory Committee, Purdue University; 2015-present, Faculty Mentor, Purdue Summer Research Opportunities Program for undergraduate students from underrepresented groups in research; 2022-present, Faculty Mentor, Emerging Leaders Science Scholars, Purdue University; 2015-present, Judge, the Lafayette Regional Science and Engineering Fair; 2018, Judge, the Purdue Undergraduate Research Conference Poster Symposium; 2020-present, Associate Editor, Frontiers in Cellular and Infection Microbiology (specialty section of Frontiers in Immunology and Frontiers in Microbiology); Guest Editor: Frontiers in Immunology; Research Topic "The Function of Phagocytes in Non-Mammals" in the specialty section "Comparative Immunology." Review Editor: Frontiers in Microbial Immunology (specialty section of Frontiers in Immunology and Frontiers in Microbiology); Session chair, Genetics, Immunity, Behavior, and Disease. TAGC24.Session chair, Insights into Cellular Dynamics and Functions (Zebrafish), The Allied Genetics Conference 2020.

Society: 2022-present: Professional Development Committee, Society of Leukocyte Biology

Grant Review: 2024- 2028, Member, NIAID Innate Immunity and Inflammation Study Section, NIH; 2024, Purdue Cancer Institute Pilot Grants; 2023, Purdue Office of Research new R01/U01 competition; 2022, ad hoc reviewer, NIH Fellowship Review Panel: Cell Biology, Developmental Biology, and Bioengineering [F05]; 2022, Fellowship, Medical Research Council, U.K.; 2021, 2022, ad hoc reviewer, NIAID Innate Immunity and Inflammation overflow Study Section; 2021, CTSI Core Pilot Review; 2019, Breast Cancer Now, U.K.; 2019, The Wellcome Trust DBT India Alliance Fellowship; 2019, Purdue Center for Cancer Research, the internal grant program; 2015, 2019, Indiana CTSI, Biomedical Research Grant; 2018, Wellcome Trust, U.K.; 2018 Independent Research Fund Denmark, Natural Sciences, Denmark; 2018, 2022, 2023; ad hoc reviewer, NIAID Innate Immunity and Inflammation Study Section, NIH; 2015, Total Cost Fellowships, Medical Research Council, U.K.

RESEARCH INTERESTS

I study the fundamental biology of neutrophils and their therapeutic application in treating devastating diseases. We also support collaborations on zebrafish disease models.

1) Basic research: By doing genetic screens in zebrafish, we are uncovering new genes and signaling mechanisms (microRNA and their targets) that govern the migration and activation of neutrophils. We then validate their function in human neutrophils, providing new targeting in manipulating neutrophil function to treat diseases. In addition, we characterize mitochondria and energy utilization in driving neutrophil migration in vivo. More recently, we started working on bioelectricity in neutrophil migration.

2) We collaborate with the Bao lab to derive neutrophils from induced pluripotent stem cells for targeted therapies. We are engineering neutrophils to express chimeric antigen receptors (CARs) for the treatment of infections, solid tumors, fibrotic diseases, and neurodegeneration.

3) We are members of the Emergent Mechanisms in Biology of Robustness, Integration & Organization (EMBRIO). We combine biology, imaging, with computational simulations and machine learning to understand signal integration when cells encounter multiple chemical and mechanical cues.

STATEMENT OF INTEREST

I am honored to be considered for the position of Councilor. As a lifetime member, I have long valued SLB as a home for cutting-edge science, mentorship, and meaningful collaboration. I am deeply committed to its mission and excited about the opportunity to help shape its future.

My research focuses on neutrophil biology across multiple systems, including zebrafish, mouse, and human cell models. This cross-species approach has provided a broad perspective on immune function and disease mechanisms. Over the years, my lab and trainees have regularly attended the meeting and have been recognized with several SLB awards. I've seen firsthand the powerful role SLB plays in supporting young scientists.

I have developed numerous collaborations through SLB events and connections, resulting in exciting interdisciplinary projects that integrate immunology, imaging, and cellular physiology. Looking ahead, I am particularly enthusiastic about promoting cross-disciplinary research, especially at the intersection of immunology and computational biology. As AI and data science continue to reshape the biomedical landscape, I believe SLB is uniquely positioned to lead conversations and initiatives that bridge traditional boundaries and prepare our field for the next generation of discovery.

If elected, I will work to strengthen support for trainees, expand interdisciplinary and AI-related programming, and amplify SLB's impact as a welcoming and innovative community. It would be a privilege to serve and give back to the society that has been instrumental in my scientific journey.