Brittany J. Belin, Ph.D.

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DEGREES

Ph.D., Biophysics — 2014
University of California, San Francisco (UCSF)
Advisor: Prof. R. Dyche Mullins

B.S., Biochemistry & Philosophy — 2007
University of Notre Dame
Advisor: Prof. Holly Goodson

POSITIONS

Assistant Professor — 2026-present
University of Kentucky, Department of Biology

Principal Investigator — 2020-2026
Carnegie Science, Department of Embryology

Adjunct Assistant Professor — 2020-2026
Johns Hopkins University, Department of Biology

Postdoc, Environmental Microbiology — 2015-2020
California Institute of Technology (Caltech)
Advisor: Prof. Dianne K. Newman

Junior Research Specialist — 2014-2015
Howard Hughes Medical Institute (HHMI)

HONORS & FELLOWSHIPS

Excellence in Graduate Teaching and Mentorship Award — 2023
Johns Hopkins University Krieger School of Arts & Sciences

K99/R00 NIH Pathway to Independence Award (NIGMS) — 2017-2023

Simons Foundation Fellow of the Jane Coffin Childs Memorial Fund — 2015-2017

Julius R. and Patricia A. Krevans Distinguished Dissertation Award — 2014
UCSF Graduate Division

***Molecular Biology of the Cell* Paper of the Year** — 2013

Mel Jones Excellence in Graduate Student Research Award — 2013
UCSF Integrated Program in Quantitative Biology (iPQB)

NIH Ruth L. Kirschstein Predoctoral (F31) Fellowship (NIA) — 2011-2013

National Science Foundation Graduate Research Fellowship — 2009-2011, 2013-2014

Outstanding Undergraduate Science Thesis Award — 2007
University of Notre Dame College of Science

TEACHING

Instructor, Molecular and Cell Biology of Symbiosis — 2023-present
Marine Biological Laboratory (MBL), Woods Hole, MA

Instructor, Bacterial Cell Biology and Development (ME.340.711) — 2024
Graduate Elective, Johns Hopkins Medical Institute

Lead Instructor and Curriculum Developer, Proposal Writing (AS.020.619) — 2021-2024
Cellular, Molecular, Developmental Biology & Biophysics PhD Program, Johns Hopkins University

Instructor and Curriculum Developer, Scientific Writing (Bi23-4) — 2017
Division of Biology & Bioengineering, Caltech

Guest Lecturer, Introduction to the Biology of Plants (Bi23-5) — 2017
Division of Biology & Bioengineering, Caltech

Teaching Assistant and Lecturer, Graduate Student Summer Bootcamp — 2009-2013
Integrated Program in Quantitative Biology (iPQB), UCSF

Instructor, Microbial Diversity Summer Program — 2009
Celsius & Beyond K-12 Educational Nonprofit, San Francisco, CA

Instructor, K-12 Science Education Partnership — 2008-2010
UCSF/San Francisco Unified School District

Standardized Test Developer — 2008
WestEd Educational Research Agency

SERVICE

Internal

Co-Organizer and Chair, Microbiology Minisymposium — 2022-2024
Johns Hopkins Medical Institute / Carnegie Institution for Science

Organizer, Carnegie Matters Mental Health Workshops — 2023
Carnegie Institution for Science with Dragonfly Mental Health

Member, Institutional Policies Review Group — 2021-2022
Carnegie Institution for Science

Chemical Safety Officer, Department Safety Committee — 2020-2026
Carnegie Institution for Science, Department of Embryology

External

Ad-hoc Reviewer: *Biophysical Journal, Physical Biology*, *mBio, Applied Environmental Microbiology*, *Archives of Microbiology*, *Trends in Microbiology, PLoS One, PCI Microbiology* — 2020-present

External IBC Committee Member, Deep Root Biolabs LLC, Baltimore, MD — 2025-present

Co-Organizer, Webinars on Pandemic-related Challenges for Research, American Society for Cell Biology — 2022

Associate Member, Women in Cell Biology (WICB) Committee, American Society for Cell Biology — 2021-2022

Organizer and Chair, "Lipids and membranes in microbial communication" Symposium, ASM/FEMS World Microbe Forum — 2021

Organizer and Chair, "Architecture of Microbial Communities and Host-Microbe Interactions" Plenary Session, ASM Annual Meeting — 2018

Liaison between the Committee for Women in Cell Biology and Committee for Postdocs & Students, ASCB — 2015

Chair of Professional Development Programming Subcommittee, Committee for Postdocs & Students (COMPASS), ASCB — 2013-2014

PATENTS

U.S. Patent No.: US10131585. Filed 10/19/2016. Title: "HOPANOID-PRODUCING BACTERIA AND RELATED BIOFERTILIZERS, COMPOSITIONS, METHODS AND SYSTEMS"

PUBLICATIONS

1. Lawrence, E.C., Ollikainen, N., Pan, H., **Belin, B.J.** 2026. Origin and transport of bacterial hopanoids. *mSystems* 0:e00619-26.
2. Lubin, M., Teixeira, D., **Belin, B.J.** 2026. Characterization of chemotaxis in soybean symbiont *Bradyrhizobium diazoefficiens*. *Appl Environ Microbiol* 92:e00928-26.
3. Carlew, T.S., Atherton, A.A., Shim, A.M., Parada Rojas, C., Buchanan, R.A., Chang, J., Sachs, J. L, **Belin, B.J.** 2026. *Aeschynomene americana* induces terminal bacteroid differentiation in *Bradyrhizobium* sp. USDA3516, a novel model for dalbergioid-rhizobium symbiosis. *BMC Plant Biol* 26, 1235.
4. Pan, H., Shim, A.M., Lubin, M.B., **Belin, B.J.** 2024. Hopanoid lipids are required for efficient soybean-Bradyrhizobium diazoefficiens symbiosis. *mBio*. 15(4):e0247823
5. Mitchison-Field, L.M.Y., **Belin, B.J.** 2023. Bacterial lipid biophysics and membrane organization. *Curr. Opin. Microbiol.* 74:102315.
6. Tookmanian, E.M., **Belin, B.J.**, Saenz, J., Newman, D.K. 2021. The role of hopanoids in fortifying rhizobia against a changing climate. *Environ. Microbiol.*, 23(6):2906-2918
7. **Belin, B.J.**, Tookmanian, E.M., de Anda, J., Wong, G.C.L., Newman, D.K. 2019. Extended Hopanoid Loss Reduces Bacterial Motility and Surface Attachment and Leads to

Heterogeneity in Root Nodule Growth Kinetics in a Bradyrhizobium-Aeschynomene Symbiosis. *Mol. Plant. Microbe Interact.*, 32(10):1415-1428.

8. **Belin, B.J.**, Busset, N., Giraud, E., Molinaro, A., Silipo, A. & Newman, D.K. 2018. Hopanoid lipids: from membranes to plant-bacteria interactions. *Nat. Rev. Micro.*, 16(5):304-315.
9. **Belin, B.J.**, Lee, T., Mullins, R.D. 2015 DNA damage induces nuclear actin filament assembly by Formin-2 and Spire-1/2 that promotes efficient DNA repair. *eLife*, 4:e07735.
10. **Belin, B.J.**, Goins, L.M., Mullins, R.D. 2015. Comparative analysis of tools for live cell imaging of actin network architecture. BioArchitecture, 4(6):189-202.
11. **Belin, B.J.**, Mullins, R.D. 2013. What we talk about when we talk about actin in the nucleus. *Nucleus*, 4(4):291-297.
12. **Belin, B.J.**, Cimini, B.A., Blackburn, E.H., Mullins, R.D. 2013. Visualization of actin filaments and monomers in somatic cell nuclei. *Mol. Biol. Cell*, 24(7): 982-994.
13. Zuchero, J.B., **Belin, B.**, Mullins, R.D. 2012. Actin binding to WH2 Domains Regulates Nuclear Import of the Multifunctional Actin Regulator JMY. *Mol. Biol. Cell*, 23(5):853-863.

SELECTED INVITED TALKS

- University of Missouri Kansas City, 2026. Kansas City, MO, USA.
- UCSD Plant Biology Symposium, 2026. San Diego, California, USA.
- Plant and Animal Genomes Conference, 2026. San Diego, California, USA.
- University of Kentucky, 2025. Lexington, Kentucky, USA.
- University of Maryland – College Park, 2025. College Park, Maryland, USA.
- Cambridge University, 2025. Cambridge, Cambridgeshire, UK.
- Bacterial Cell and Developmental Biology GRC, 2025. Manchester, New Hampshire, USA.
- Pennsylvania State University, 2025. State College, Pennsylvania, USA.
- Texas A&M University, 2025. College Station, Texas, USA.
- The Scripps Research Institute, 2025. San Diego, California, USA.
- American Society for Cell Biology Annual Meeting, 2024. San Diego, California, USA.
- Aegean Conference on Model Hosts, 2024. Heraklion, Crete, Greece.
- Institute for Marine & Environmental Biotechnology, University of Maryland – Baltimore, 2023. Baltimore, Maryland, USA.
- South Dakota State University, 2023. Brookings, South Dakota, USA.
- Johns Hopkins University, 2022. Baltimore, Maryland, USA.
- Conference on Beneficial Microbes, 2022. Madison, Wisconsin, USA.
- North American Symbiotic Nitrogen Fixation Conference, 2022. Madison, Wisconsin, USA.
- CauloCon, 2021. Virtual.
- ASM/FEMS World Microbe Forum, 2021. Virtual.