

# Navish Wadhwa, Ph.D.

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☎ (602) 496-5456

## Faculty Appointment

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2022 – **Assistant Professor**, Arizona State University  
Department of Physics and Biodesign Center for Mechanisms of Evolution  
Center for Biological Physics  
**Graduate faculty:**  
School of Life Sciences (Microbiology; Molecular/Cellular Biology)  
School for Engineering of Matter, Transport and Energy (Biological Design)

## Education

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2012 – 2015 **Ph.D. in Physics**  
Technical University of Denmark  
2010 – 2012 **M.S. in Engineering Mechanics**  
Virginia Polytechnic Institute and State University  
2004 – 2008 **B.Tech. in Mechanical Engineering**  
Indian Institute of Technology Delhi

## Academic Training and Experience

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2016 – 2022 **Postdoctoral Research**, Harvard University  
Mentors: DR. HOWARD BERG  
2012 – 2015 **Graduate Research**, Technical University of Denmark  
Mentors: DR. ANDERS ANDERSEN, DR. THOMAS KIØRBOE, DR. TOMAS BOHR  
2010 – 2012 **Graduate Research**, Virginia Polytechnic Institute and State University  
Mentor: DR. SUNGHWAN JUNG  
2008 – 2010 **Junior Research Fellowship**, National Centre for Biological Sciences Bangalore  
Mentor: DR. SANJAY SANE  
2007 – 2008 **Undergraduate Research**, Indian Institute of Technology Delhi  
Mentor: Dr. Brijesh Eshpuniyani

## Additional Leadership and Research Training

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2024 **Faculty Success Program**, National Center for Faculty Development & Diversity  
2021 **Lab Dynamics: Management Skills for Scientists**, Harvard University  
2017 **Physiology course**, Marine Biological Laboratory  
2017 **Visiting Scientist**, Janelia Research Campus  
2016 **Advanced Bacterial Genetics course**, Cold Spring Harbor Laboratories  
2014 **Particle Image Velocimetry course**, German Aerospace Center

## Honors and Awards

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### Since employment at ASU

2024 New Investigator Award, Arizona Biomedical Research Centre

### Before employment at ASU

2021 INTERSECTIONS SCIENCE FELLOWS SYMPOSIUM Associate (2nd prize for short talk)  
2020 Pathway to Independence Award, National Institutes of Health  
2019 MESELSON PRIZE FOR THE MOST BEAUTIFUL EXPERIMENT OF THE YEAR, Harvard University  
2017 Society of General Physiologists Scholar, Marine Biological Laboratory  
2014 YOUNG SCIENTIST AWARD, European Mechanics Society  
2013 Best Poster Award, Department of Physics, Technical University of Denmark  
2010 MILTON VAN DYKE AWARD, American Physical Society Division of Fluid Dynamics  
2009 Junior Research Fellowship, National Centre for Biological Sciences  
2006 Keshar Devi Scholarship, Indian Institute of Technology Delhi

## Publications

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#: corresponding author; †: equal contribution; underline: trainees mentored by Wadhwa.

### Published

1. Ergin, F. G., Günaydınoglu, E., Kurtuluş, D. F., & **Wadhwa, N.**<sup>#</sup>. (2023). Estimating the pressure force around swimming plankton using micro particle image velocimetry. *Fluid Dynamics Research*, 55(6), 065505.
2. Hu, H., Popp, P. F., Santiveri, M., Roa-Eguiara, A., Yan, Y., Martin, F. J., Liu, Z., **Wadhwa, N.**, Wang, Y., Erhardt, M., et al. (2023). Ion selectivity and rotor coupling of the vibrio flagellar sodium-driven stator unit. *Nature communications*, 14(1), 4411.
3. **Wadhwa, N.**<sup>#†</sup>, Sassi, A.<sup>†</sup>, Berg, H. C., & Tu, Y.<sup>#</sup>. (2022). A multi-state dynamic process confers mechano-adaptation to a biological nanomachine. *Nature Communications*, 13(2), 5327.
4. **Wadhwa, N.**<sup>#</sup> & Berg, H. C.<sup>#</sup>. (2022). Bacterial motility: Machinery and mechanisms. *Nature Reviews Microbiology*, 20, 161–173.
5. Hu, H., Santiveri, M., **Wadhwa, N.**, Berg, H. C., Erhardt, M., & Taylor, N. M. (2021). Structural basis of torque generation in the bi-directional bacterial flagellar motor. *Trends in Biochemical Sciences*, 47(2), 160–172.
6. **Wadhwa, N.**<sup>#</sup>, Tu, Y., & Berg, H. C. (2021). Mechanosensitive remodeling of the bacterial flagellar motor is independent of direction of rotation. *Proceedings of the National Academy of Sciences*, 118(15), e2024608118.
7. Santiveri, M., Roa-Eguiara, A., Kühne, C., **Wadhwa, N.**, Hu, H., Berg, H. C., Erhardt, M., & Taylor, N. M. (2020). Structure and function of stator units of the bacterial flagellar motor. *Cell*, 183(1), 244–257.e16.
8. **Wadhwa, N.**<sup>#</sup>, Phillips, R., & Berg, H. C. (2019). Torque-dependent remodeling of the bacterial flagellar motor. *Proceedings of the National Academy of Sciences*, 116(24), 11764–11769.
9. Andersen, K. H., Berge, T., Gonçalves, R. J., ..., **Wadhwa, N.**, & Kiørboe, T. (2016). Characteristic sizes of life in the oceans, from bacteria to whales. *Annual Review of Marine Science*, 8(1), 217–241.
10. Andersen, A., **Wadhwa, N.**, & Kiørboe, T. (2015). Quiet swimming at low reynolds number. *Physical Review E*, 91, 042712.

11. **Wadhwa, N.**<sup>#†</sup>, Martens, E. A.<sup>#†</sup>, Jacobsen, N. S., Lindemann, C., Andersen, K. H., & Visser, A. (2015). Size structures sensory hierarchy in ocean life. *Proceedings of the Royal Society B*, 282(1815), 20151346.
12. Kjørboe, T., Jiang, H., Gonçalves, R. J., Nielsen, L. T., & **Wadhwa, N.** (2014). Flow disturbances generated by feeding and swimming zooplankton. *Proceedings of the National Academy of Sciences*, 111(32), 11738–11743.
13. **Wadhwa, N.**<sup>#</sup>, Andersen, A., & Kjørboe, T. (2014). Hydrodynamics and energetics of jumping copepod nauplii and copepodids. *Journal of Experimental Biology*, 217(17), 3085–3094.
14. **Wadhwa, N.**, Vlachos, P., & Jung, S. (2013). Noncoalescence in the oblique collision of fluid jets. *Physical Review Letters*, 110, 124502.
15. **Wadhwa, N.**, & Jung, S. (2011). Non-coalescence of jets. *Physics of Fluids*, 23(9), 091105.
16. **Wadhwa, N.**, Jain, V., Fowlkes, J. B., Bull, J. L., & Eshpuniyani, B. (2010). A boundary element model of multiple microcirculatory bubbles in cardiovascular. *International Journal of Emerging Multidisciplinary Fluid Sciences*, 2, 143–160.

## Submitted

1. Brown, P. T., Jabbarzadeh, N., Pintuff, A., Meneses, L., Monakhova, E., Kruithoff, R., **Wadhwa, N.**, Galati, D. F., & Shepherd, D. P. (2024). Fourier synthesis optical diffraction tomography for kilohertz rate volumetric imaging. *under review*.
2. Panich, J.<sup>†</sup>, Dudebout, E.<sup>†</sup>, **Wadhwa, N.**<sup>#</sup>, & Blair, D.<sup>#</sup>. (2024). Swashing motility: A novel propulsion-independent mechanism for surface migration in *Salmonella* and *E. coli*. *under review*.

## Presentations

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### Invited Conference/Keynote Talks by Wadhwa

6. Mechanobiology of Infections, Ascona, Switzerland, 2026 Upcoming
5. Motile Active Matter, Bonn, Germany, 2024
4. Complex Kinetics and Dynamics from Single Molecule to Cells, Dijon, France, 2024
3. Institute for Complex Adaptive Matter Global Summit, Santa Barbara, CA, 2023
2. Gordon Research Conference on Bioenergetics, Andover, NH, 2023
1. 9th World Congress of Biomechanics, Taipei City, Taiwan, 2022

### Invited Departmental and Public Talks by Wadhwa

26. University of Arkansas, Department of Physics, Fayetteville, AR, 2025
25. RWTH University Hospital, Institute of Medical Microbiology, Aachen, Germany, 2024
24. Humboldt University, Berlin  $\mu$ -club, Berlin, Germany, 2024
23. Max Planck Institute for Terrestrial Microbiology, Marburg, Germany, 2024
22. University of Copenhagen Center for Protein Research, Copenhagen, Denmark, 2024
21. Rice University, Center for Theoretical Biological Physics, Houston, TX, 2023
20. University of Utah, Department of Mechanical Engineering, Salt Lake City, UT 2022
19. Biological Physics & Physical Biology seminar series, virtual, 2022
18. Northeastern University, Department of Biology, Boston, MA, 2022
17. Purdue University, Department of Physics and Astronomy, West Lafayette, IN, 2022

## Presentations (continued)

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16. Northwestern University, Department of Molecular Biosciences, Evanston, IL, 2022
15. Johns Hopkins University, Thomas C. Jenkins Department of Biophysics, Baltimore, MD, 2022
14. University of California Merced, Soft, Living, Active and Adaptive Matter seminar series, virtual, 2021
13. Harvard University, Kavli seminar series, Cambridge, MA, 2021
12. École Polytechnique Fédérale de Lausanne, Physics of Living Systems seminar series, virtual, 2021
11. Microscale Ocean Biophysics seminar series, virtual, 2021
10. Harvard University, Department of Molecular and Cellular Biology, Cambridge, MA 2020
9. Yale Quantitative Biology Institute (cancelled due to Covid-19), 2020
8. Princeton University, Center for the Physics of Biological Function, Princeton, NJ, 2019
7. Brandeis University, Materials Research Science and Engineering Center, Waltham, MA, 2019
6. Brown University, Division of Applied Mathematics Fluids and Thermal Sciences, Providence, RI 2018
5. Virginia Tech, Department of Biomedical Engineering and Mechanics, Blacksburg, VA 2016
4. Cambridge Department of Applied Mathematics and Theoretical Physics, Cambridge, UK, 2015
3. Max Planck Institute for Terrestrial Microbiology, Marburg, Germany, 2015
2. Harvard School of Engineering and Applied Sciences, Cambridge, MA, 2014
1. Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India, 2012

### Contributed oral presentations

18. Yanagisawa, S., **Wadhwa, N.**, Experimental evolution of high viscosity swimmer *E. coli*, *Biodesign Fusion Retreat*, Tempe, AZ, 2025 (1st prize for flash talk)
17. Sawant, S., Kazan, I.C., Ozkan, S.B., **Wadhwa, N.**, Allosteric control of stator dynamics in the bacterial flagellar motor, *BioPhest*, Tempe, AZ, 2025 (selected talk)
16. **Wadhwa, N.**, Panich, J., Dudebout, E., Blair, D., Propulsion without propellers: How bacteria move on surfaces without flagella, *American Physical Society March Meeting*, Anaheim, CA, 2025 (selected talk)
15. Sawant, S., Kazan, I.C., Ozkan, S.B., **Wadhwa, N.**, Allosteric control of stator dynamics in the bacterial flagellar motor, *Bacterial Locomotion and Signal Transduction XVIII*, Cancun, Mexico, 2025 (selected talk)
14. Dudebout, E., Panich, J., Blair, D., **Wadhwa, N.**, Swashing motility: A propulsion-independent mechanism for bacterial surface migration, *Bacterial Locomotion and Signal Transduction XVIII*, Cancun, Mexico, 2025 (selected talk)
13. **Wadhwa, N.**, Tu, Y., Berg, H.C., Mechanobiology of stator remodeling in the bacterial flagellar motor, *American Physical Society March Meeting*, virtual, 2021 (selected talk)
12. **Wadhwa, N.**, Tu, Y., Berg, H.C., Stochastic physics of stator assembly in the bacterial flagellar motor, *Gordon Research Conference - Stochastic Physics in Biology*, Ventura, CA, 2021 (selected talk)
11. **Wadhwa, N.**, Phillips, R., Berg, H.C., Physics behind the autonomous assembly of the bacterial flagellar motor, *Physics of Living Matter 15*, virtual, 2020 (selected talk)
10. **Wadhwa, N.**, Phillips, R., Berg, H.C., Torque- and speed-dependent remodeling of the bacterial flagellar motor, *American Society of Cell Biology Conference*, Washington, DC, 2019 (selected talk)
9. **Wadhwa, N.**, Berg, H.C., Adaptation to load in the bacterial flagellar motor, *Bacterial Locomotion and Signal Transduction Conference*, New Orleans, LA, 2019 (selected talk)

## Presentations (continued)

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8. **Wadhwa N.**, Martens E.A., Jacobsen N.S., Lindemann C., Andersen K.H., and Visser A., Size matters: The interplay between sensing and size in aquatic environments, *Complex Motion in Fluids Summer School*, Humlebæk, Denmark, 2015.
7. **Wadhwa N.**, Hydrodynamics of swimming in zooplankton, Dansis Research Seminar, Kongens Lyngby, Denmark, 2015.
6. **Wadhwa N.**, Andersen A., Kiørboe T., How to be invisible as a microscopic swimmer, *American Physical Society's Division of Fluid Dynamics Meeting*, San Francisco, CA, 2014
5. **Wadhwa N.**, Andersen A., Kiørboe T., Hydrodynamics and energetics of jumping copepod nauplii and adults, *European Fluid Mechanics Conference*, Kgs. Lyngby, Denmark, 2014
4. **Wadhwa N.**, Andersen A., Kiørboe T., How plankton hide: swimming quietly at low Reynolds numbers, *Active Fluids Workshop*, Mariehamn, Åland, 2014
3. **Wadhwa N.**, Andersen A., Kiørboe T., Swimming by jumping in marine zooplankton, *Complex Motion in Fluids Summer School*, Humlebæk, Denmark, 2013
2. **Wadhwa N.**, Vlachos P., Jung S., Bouncy fluid jets, *American Physical Society's Division of Fluid Dynamics Meeting*, San Diego, CA, 2012
1. **Wadhwa N.**, Vlachos P., Jung S., Bouncing jets, *American Physical Society's Division of Fluid Dynamics Meeting*, Baltimore, MD, 2011

## Talks at ASU

19. Javi, F., **Wadhwa, N.**, Navigation of bacteria to confined quiescent regions, BII/CME Seminar Series on Mechanisms of Cellular Evolution, 2025
18. Bapat, M., **Wadhwa, N.**, Understanding the physical determinants of flagellar surface sensing and biofilm formation in bacteria, BII/CME Seminar Series on Mechanisms of Cellular Evolution, 2025
17. Meneses, L., **Wadhwa, N.**, Osmotic stress induced bacterial membrane depolarization, BII/CME Seminar Series on Mechanisms of Cellular Evolution, 2025
16. **Wadhwa, N.**, How physical forces regulate bacterial motility across scales, Biological Physics & Structural Discovery Seminars, 2024
15. Wise, B., **Wadhwa, N.**, Nanomachine pool size determines *E. coli* motility, BII/CME Seminar Series on Mechanisms of Cellular Evolution, 2024
14. Gogerty, C., **Wadhwa, N.**, Linking flagellar mechanosensing with cellular signaling in control of biofilm formation, BII/CME Seminar Series on Mechanisms of Cellular Evolution, 2024
13. Meneses, L., **Wadhwa, N.**, An osmotic shock depolarizes *E. coli*, BII/CME Seminar Series on Mechanisms of Cellular Evolution, 2024
12. Dudebout, E.\*, Panich, J.\*, Blair, D., **Wadhwa, N.**, A novel fermentation-driven bacterial surface motility, BII/CME Seminar Series on Mechanisms of Cellular Evolution, 2024
11. Dudebout, E.\*, Panich, J.\*, Blair, D., **Wadhwa, N.**, Metabolism drives propulsion-independent surface motility in *Salmonella* and *E. coli*, ASU-CyCergy Paris Summer Zoom talks, virtual, 2024
10. Yanagisawa, S., **Wadhwa, N.**, How flagellar motor structure affects *E. coli* swimming, BII/CME Seminar Series on Mechanisms of Cellular Evolution, 2024
9. Yanagisawa, S., **Wadhwa, N.**, Adaptation of *E. coli* swimming in high viscosity environment, ASU-CyCergy Paris Summer Zoom talks, virtual, 2024
8. Yanagisawa, S., **Wadhwa, N.**, Evolutionary relationships between rotary molecular motor structures and performance, BII/CME Fall Retreat, 2024

## Presentations (continued)

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7. Sawant, S., **Wadhwa, N.**, Bridging molecular and community scales in Biofilm formation, BII/CME Seminar Series on Mechanisms of Cellular Evolution, 2023
6. Sawant, S., **Wadhwa, N.**, Structural insights into the dynamics of bacterial nanomotors, School of Life Sciences Brown Bag Seminar, 2023
5. **Wadhwa, N.**, ASU Molecular and Cellular Biology graduate program seminar series, 2023
4. **Wadhwa, N.**, Center for Immunotherapy, Vaccines, and Virotherapy seminar series, 2022
3. **Wadhwa, N.**, BII/CME Seminar Series on Mechanisms of Cellular Evolution, 2022
2. **Wadhwa, N.**, Department of Physics Colloquium, 2022
1. **Wadhwa, N.**, Biodesign Graduate Program Seminar Series, 2022

## Poster presentations

26. Wise, B., **Wadhwa, N.**, Nanomotor pool size controls *E. coli* motility, *ASU Physics Undergraduate Research Symposium*, Tempe, AZ, 2025 (Rick and John Jacob Award for Undergraduate Research)
25. Javi, F., **Wadhwa, N.**, Navigation of bacteria to confined quiescent regions: A microfluidic model for the urinary lumen, *10th Annual ABRC-Flinn Research Conference*, Phoenix, AZ, 2025
24. Wise, B., **Wadhwa, N.**, Nanomotor pool size controls *E. coli* motility, *BioPhest*, Tempe, AZ, 2025 (Best poster award)
23. Meneses, L., **Wadhwa, N.**, Osmotic stress induced bacterial membrane depolarization, *BioPhest*, Tempe, AZ, 2025
22. Dudebout, E., Panich, J., Blair, D., **Wadhwa, N.**, Swashing: A propulsion-independent mechanism of bacterial surface migration, *BioPhest*, Tempe, AZ, 2025
21. Sawant, S., **Wadhwa, N.**, Uncovering the structural basis of mechanosensitivity in bacterial flagellar stators, *Gordon Research Conference - Sensory Transduction in Microorganisms*, Ventura, CA, 2024
20. Panich, J., Dudebout, E., **Wadhwa, N.**, and Blair, D., Metabolism drives propulsion-independent surface motility in *Salmonella* and *E. coli*, *Gordon Research Conference - Sensory Transduction in Microorganisms*, Ventura, CA, 2024
19. Wise, B., Sawant, S., Meneses, L., **Wadhwa, N.**, *In vivo* measurements of the bacterial flagellar motor, *BII/CME Fall Retreat*, Phoenix, AZ, 2024
18. Dudebout, E., Panich, J., Blair, D., **Wadhwa, N.**, Metabolism drives propulsion-independent surface motility in *Salmonella* and *E. coli*, *BioPhest*, Tempe, AZ, 2024
17. Sawant, S., **Wadhwa, N.**, Uncovering the structural basis of mechanosensitivity in bacterial flagellar stators, *BioPhest*, Tempe, AZ, 2024
16. Dudebout, E., Panich, J., Blair, D., **Wadhwa, N.**, A novel fermentation-driven bacterial surface motility, *SMBE Satellite Meeting on Mechanisms of Cellular Evolution*, Tempe, AZ, 2023
15. Meneses, L., Belser, S., Yang, J., Castillo, D., **Wadhwa, N.**, Osmotic shock depolarizes *Escherichia coli*, *SMBE Satellite Meeting on Mechanisms of Cellular Evolution*, Tempe, AZ, 2023
14. Dudebout, E., Osar, R., Blair, D., **Wadhwa, N.**, Mathematically Modeling Bacterial Sliding, *Biodesign Fusion Retreat*, Phoenix, AZ, 2023
13. Sawant, S., Faguy, F., **Wadhwa, N.**, Structural insights into dynamics of bacterial nanomotors, *Biodesign Fusion Retreat*, Phoenix, AZ, 2023
12. Meneses, L., **Wadhwa, N.**, Membrane Potential Dynamics in *E. coli*, *Biodesign Fusion Retreat*, Phoenix, AZ, 2023



## Presentations (continued)

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11. Dudebout, E., Osar, R., Blair, D., Wadhwa, N., Mathematically Modeling Bacterial Sliding, *BioPhest*, Tempe, AZ, 2023
10. Meneses, L., Wadhwa, N., Membrane Potential Dynamics in *E. coli*, *BioPhest*, Tempe, AZ, 2023
9. Sawant, S., Faguy, F., Wadhwa N., Structural insights into dynamics of bacterial nanomotors, *BioPhest*, Tempe, AZ, 2023 (Best poster award)
8. Sawant, S., Wadhwa N., Role of Flagellar mechanosensing in Biofilm formation, *SMBE Satellite Meeting on Mechanisms of Cellular Evolution*, Tempe, AZ, 2023
7. **Wadhwa, N.**, Phillips, R., Berg, H.C., Torque- and speed-dependent remodeling of the bacterial flagellar motor, *Gordon Research Conference - Sensory Transduction in Microorganisms*, Ventura, CA, 2020
6. **Wadhwa, N.**, Tu, Y., Phillips, R., Berg, H.C., Mechanobiology of stator remodeling in the bacterial flagellar motor, *Bacterial Locomotion and Signal Transduction Conference*, virtual, 2021
5. **Wadhwa, N.**, Tu, Y., Berg, H.C., Mechanobiology of stator remodeling in the bacterial flagellar motor, *Biophysical Society Meeting*, virtual, 2021
4. Cirillo L, Fadero TC, Krishnamurthy D, **Wadhwa N.**, Nixon-Abell J., Obara C. J., Lippincott-Schwartz J., A relationship between protein mobility and organelle morphology in the endoplasmic reticulum, *American Society for Cell Biology meeting*, Philadelphia, PA, 2017
3. **Wadhwa N.**, Andersen A., Kiørboe T., Stealth swimming, *Bacterial Locomotion and Signal Transduction (BLAST) Conference*, New Orleans, LA, 2017
2. **Wadhwa N.**, Andersen A., Kiørboe T., Swimming by jumping in marine zooplankton, *International workshop on Trait-based approaches to Ocean Life*, Copenhagen, Denmark, 2013
1. **Wadhwa N.**, Andersen A., Kiørboe T., Size dependent flow structure changes in swimming copepods, *Microscale interactions in aquatic environments*, Les Houches, France, 2013

## Grants and Research Support

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### Active Research Support at ASU

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| 2024 – 2026 | Arizona Biomedical Research Centre New Investigator Award<br>Uncovering the role of flow sensing in urinary tract infections<br>Total cost: \$225,000<br>Role: PI  |
| 2023 – 2025 | Seed Grant, Biological Integration Institute for Mechanisms of Cellular Evolution at ASU<br>Evolutionary relationships between rotary molecular motor structures and performance<br>Total cost: \$300,000<br>Role: PI (co-I: Wayne Frasch) |
| 2022 – 2025 | NIH R00 Pathway to Independence, National Institute of General Medical Sciences<br>Identifying the mechanisms of mechanosensing by the bacterial flagellar motor<br>Total cost: \$750,000<br>Role: PI                                      |

## Grants and Research Support (continued)

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### Research Support prior to ASU

2020 – 2022 NIH K99 Pathway to Independence, National Institute of General Medical Sciences  
Bacterial mechanobiology from the lens of the flagellar motor  
Total cost: \$200,000  
Role: PI

## Mentorship

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### Postdoctoral Fellows

2023 – Seiga Yanagisawa  
2024 – Mrinmayee Bapat  
2024 – Farhad Javi

### Ph.D. Students

2023 – Shabduli Sawant (Biological Design PhD program)

### Master's Students

2022 – Eric Dubebout (Biochemistry 4+1 program, Barrett Honors College student)

### Honors Thesis Undergraduate Students

2024 – Brennen Wise (Biophysics, Barrett Honors College student)  
2023 – 2024 Frances Faguy (Microbiology, Barrett Honors College student). Next: Ph.D., Northern Arizona University.

### Non-thesis Undergraduate Students

2023 – 2023 David Vandian (Molecular Biosciences and Biotechnology, Physics, and Linguistics, Barrett Honors College student)  
2022 – 2023 Wren Osar (Physics, Barrett Honors College student). Next: Ph.D., Cornell.

### Research Staff

2023 – Carolina Gogerty (Research Specialist)  
2022 – Luis Meneses (Research Technician)  
2024 – 2024 Pranav Mohan Sharma  
2023 – 2024 David Castillo (Research Scientist)

### Committee member and advisor to students from other labs

2024 – Weiqing Xu (Physics Ph.D. program, Pressé lab, ASU)  
Lillian Otteson (Physics Ph.D. program, Vaiana lab, ASU)  
2023 – Emma Henderson (Microbiology Ph.D. program, Shrivastava lab, ASU)  
2022 – Statton Tinker (Biology Ph.D. program, Wideman lab, ASU)



## Mentorship (continued)

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2022 – 2023 Logan Graham (Microbiology M.Sc. program, Lynch lab, ASU)  
Shep Bryan (Physics Ph.D. program, Pressé lab, ASU)

### Mentoring prior to ASU

2019 Jinming Yang (visiting student from USTC). Next: Ph.D., Yale  
Sophia Belser (visiting student from King's College London). Next: M.Phil., Cambridge  
2018 Olenka Jain (undergraduate student at Harvard). Next: Ph.D., Princeton  
Daozheng Gong (visiting student from USTC). Next: Ph.D., U. Chicago  
Siyu He (visiting student from Xian Jiaotong University). Next: Ph.D., Columbia  
2017 Isabel Esain Garcia (visiting student from Imperial College London). Next: Ph.D., Cambridge  
2016 Ying Zuo (visiting student from USTC). Next: Ph.D., Hong Kong U. Sci. Tech.

## Mentored Trainees' Honors and Awards

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2025 **Rick and John Jacob Award for Undergraduate Research**, ASU Physics (Brennen Wise)  
**Outstanding Graduate Student Research**, School for Engineering of Matter, Transport and Energy (Shabduli Sawant)  
**People's Choice Award for the best flash talk**, Biodesign Fusion Retreat (Seiga Yanagisawa)  
**Best Poster Award**, *BioPhest* (Brennen Wise)  
**ASU Graduate Student Government Travel Grant** (Eric Dudebout)  
**ASU Graduate College Travel Award** (Eric Dudebout)  
**Agouron Institute Travel Award** (Shabduli Sawant)  
**Biodesign Travel Award** (Shabduli Sawant)

2024 **Travel award** to attend *Lab Tales: A Science Storytelling Workshop* at Princeton (Shabduli Sawant)  
**Inducted into Sigma Pi Sigma** (Brennen Wise)

2023 **ASU Knowledge Enterprise Rookie of the Year** Finalist (Carolina Gogerty)  
**Best Poster Award**, *BioPhest* (Shabduli Sawant)  
**Fulton Fellowship**, School of Engineering of Matter, Transport and Energy (Shabduli Sawant)

## Teaching

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### Courses for which I have been the instructor of record

PHY 121 **University Physics I: Mechanics; 3 credits**  
Fall 2022: 120 students  
Fall 2023: 115 students

PHY 310 **Classical Parts/Field/Matter I; 3 credits**  
Spring 2024: 35 students  
Spring 2025: 40 students

## Teaching (continued)

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EVO 501     **Current Topics in Evolutionary Biology; 1 credit**  
Fall 2022: 7 students  
Fall 2023: 4 students

### Other Teaching at ASU

MIC 501     **Foundations in Microbiology**  
Fall 2022: 20 students  
Guest lecturer for a 1-week module

LIA 194     **The Force of Life: Mechanics in Biology**  
Guest lecturer

PHY 191     **Physics Frontiers at ASU**  
Guest lecturer

**Barrett Summer Scholars: A Physics Potpourri**  
Guest lecturer

### Pedagogical training

2024     **ICAP theory of cognitive engagement to enhance active learning**

2021     **THE INCLUSIVE STEM TEACHING PROJECT**

### Teaching prior to ASU

2020     Guest lecturer, *Freshman Seminars: Physics*, Emory University

2014     Teaching Assistant, *Experimental Methods and Instrumentation in Physics*, Technical University of Denmark

2013     Guest lecturer, *Introduction to Biophysics*, Technical University of Denmark  
              Guest lecturer, *Physical Oceanography*, Technical University of Denmark

2012     Instructor, *Foundations of Physics Laboratory*, Virginia Tech

2011     Instructor, *Mechanical Behavior of Materials*, Virginia Tech  
              Teaching Assistant, *Dynamics*, Virginia Tech

2010     Teaching Assistant, *Statics*, Virginia Tech

## Service

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### Conference Organization

2025     **Co-chair**, *BioPhest*, Tempe, AZ.

2024     **Co-organizer**, *Symposium on Mechanisms of Cellular Evolution*, Tempe, AZ.

2021     **Keynote Session Chair**, *Bacterial locomotion and signal transduction meeting*

## Service (continued)

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### Peer review

- 2014 – ~ **25 total reviews**  
(in alphabetical order) The American Naturalist; Biomolecules; Communications Biology; eLife; Frontiers in Marine Science; Journal of Experimental Biology; Journal of Experimental Marine Biology and Ecology; Journal of Physics D; mBio; Nature Communications; Physical Review E; Physical Review Letters; Physical Review X; PLOS One; Proceedings of the National Academy of Sciences; Soft Matter

### Grant review

- 2024 *ad hoc* UKRI Biotechnology and Biological Sciences Research Council (BSSRC)  
2017 *ad hoc* National Science Foundation

### Society membership

- 2010 – American Physical Society  
2020 – Biophysical Society  
2025 – American Association for the Advancement of Science

### Service prior to ASU

- 2022 COMMUNITY TASK FORCE ON DIVERSITY, INCLUSION AND BELONGING, Harvard University  
2022 Website and Public Relations Committee, MCB Department, Harvard University  
2016 Finance committee, FAS postdoctoral association, Harvard University