

Harsh Vashistha, Ph.D

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Current Position

Postdoctoral associate in Neuroscience Sep 2021-present
Department of MCDB, Yale University, New Haven, CT, USA
PI: Dr. Damon Clark

Education

University of Pittsburgh, Pittsburgh, PA, USA
Ph.D. in Physics Aug 2021
M.S. in Physics Dec 2018
Dissertation: The roles of intergeneration inheritance and intrageneration molecular dynamics in shaping living cells. Advisor: Dr. Hanna Salman

Indian Institute of Science Education and Research Bhopal (IISERB), M.P, India
B.S.- M.S.(integrated) in Physics June 2015
Dissertation: Induction of ferromagnetic ordering in paramagnetic CaRuO₃ by intrinsic tensile strain.
Advisor: Dr. D. S. Rana

Marine Biological Laboratory, Woods Hole, MA, USA
Methods in Computational Neuroscience summer course Summer 2022

Peer-reviewed Publications

1. B. Knapp, L. Willis, C. Gonzalez, **H. Vashistha**, J. J. Touma, M. Tikhonov, J. Ram, H. Salman, J. E. Elias, K. C. Huang, Metabolomic rearrangement controls the intrinsic microbial response to temperature changes, *Nature microbiology* (2024).
2. M. Kohram, A. Sanderson, A. Loui, P. V Thompson, **H. Vashistha**, A. Shomar, Z. N. Oltvai and H. Salman, Non-lethal deleterious mutation-induced allostasis accelerates bacterial aging, *PNAS* (2024).
3. **H. Vashistha**, J. Jammal and H. Salman, Bacterial cell-size changes resulting from altering the relative expression of Min proteins, *Nature communications* (2023).
4. M. ElGamel, **H. Vashistha**, H. Salman and A. Mugler, Multigenerational memory in cell size homeostasis, *Phys. Rev. E* (2023).
5. **H. Vashistha** and D. A. Clark, Feature maps: How the insect visual system organizes information, *Current Biology* (2022).
6. **H. Vashistha**, M. Kohram and H. Salman, Non-genetic inheritance restraint of cell to cell variation, *eLife* (2021).
7. A. Stawsky, **H. Vashistha**, JT Nechleba, H. Salman and N. Brenner, Multiple timescales in bacterial growth homeostasis, *iScience* (2021).

8. M. Kohram, **H. Vashistha**, S. Leibler, B. Xue and H. Salman, Bacterial growth control mechanisms inferred from multivariate statistical analysis of single-cell measurements, *Current biology* (2021).
9. S. Rashid, Z. Long, S. Singh, M. Kohram, **H. Vashistha**, S. Navlakha, H. Salman, Z. N. Oltvai, and Z.B. Joseph, Adjustment in tumbling rates improves bacterial chemotaxis on obstacle-laden terrains, *PNAS*(2019).
10. L. Susman, M. Kohram, **H. Vashistha**, J. T. Nechleba, H. Salman, and N. Brenner, Individuality and slow dynamics in bacterial growth homeostasis, *PNAS* (2018).

Awards and honors

- Degree completion fellowship, University of Pittsburgh, PA, USA, 2021.
- Andrew W. Mellon predoctoral fellowship, University of Pittsburgh, PA, USA, 2020.
- Three Minute Thesis (3MT) competition, Department of Physics and Astronomy, University of Pittsburgh, PA, USA, 2019.
- International Summer school on Theoretical Biophysics research fellowship and travel grant, Cargese, France, 2017.
- IASC-INSANA-NASI research fellowship, Indian Academy of Sciences, 2013.
- Innovation in Science Pursuit for Inspired Research (INSPIRE) fellowship, D.S.T., Government of India, 2010.
- Qualified IIT-JEE, India, 2010.

Conferences and Workshops

- Neuroscience Bootcamp, Yale University, 2023
- Databasics in Python, School of Computing and Information, University of Pittsburgh, 2020.
- American Physical Society (APS) march meeting, Boston, USA, 2019.
- International Summer school on Theoretical Biophysics (ISTBP), Cargese, France, 2017.
- Astronomy and Telescope-making Workshop, IISER Bhopal, India, 2014.
- IAS Summer Research program, IISER Kolkata, India, 2013.
- Visiting Students Program @ ARIES (VSPA), Nainital, India, 2012.
- VIJYOSHI, Indian Institute of Science (IISc), Bangalore, India, 2010.

Selected Presentations

- **H. Vashistha**, Phenotypic variability and non-genetic inheritance in isogenic populations, *Stanford university*, Stanford, CA, USA, 2020.
- **H. Vashistha**, M. Kohram and H. Salman, Strength and longevity of non-genetic inheritance in bacterial cells, *APS meeting abstracts*, Boston, MA, USA, 2019.
- **H. Vashistha**, Individuality and non-genetic inheritance in bacteria, *ISTBP*, Cargese, France, 2017.
- **H. Vashistha**, Induction of ferromagnetic ordering in paramagnetic $CaRuO_3$ by intrinsic tensile strain, *IISERB*, India, 2015.