

Farshid Jafarpour

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Work Authorization: U.S. Citizen

Education

- 2010–2016 **Ph.D. in Physics**, *University of Illinois at Urbana-Champaign*, GPA: 3.99.
Thesis: Stochastic Dynamics in Spatially Extended Physical and Biological Systems
Advisor: Professor Nigel Goldenfeld
M.S. in Mathematics, *University of Illinois at Urbana-Champaign*, (May 2014).
- 2008–2010 **B.S. in Chemical Engineering**, *North Carolina State University*, Raleigh, GPA: 4.00.
Class Valedictorian, Summa Cum Laude
B.S. in Physics, *North Carolina State University*, Raleigh.

Awards and Fellowships

- Spring 2016 Scott Anderson Award, University of Illinois
Spring 2014 Outstanding Instructor, University of Illinois
Fall 2013 University Fellowship, University of Illinois
Spring 2012 University Fellowship, University of Illinois
7 semesters Excellence in Teaching, University of Illinois

Publications

10. **F. Jafarpour**, C. S. Wright, S. Iyer-Biswas. Universality of Stochastic Exponential Growth in Complex Autocatalytic Reaction Networks (under preparation)
9. **F. Jafarpour**, C. S. Wright, H. Gudjonson, J. Riebling, E. Dawson, K. Lo, A. Fiebig, S. Crosson, A. R. Dinner, S. Iyer-Biswas. Bridging the time scales of single-cell and population dynamics. *Phys. Rev. X* 8, 021007 (2018)
8. **F. Jafarpour**, M. Vennettilli, S. Iyer-Biswas. Biological timekeeping in the presence of stochasticity (under review). preprint arXiv:1703.10058
7. T. Biancalani*, **F. Jafarpour***, N. Goldenfeld. Giant amplification of noise in fluctuation-induced pattern formation. *Phys. Rev. Lett.* 118.1 (2017) (***Equal Contribution**)
6. **F. Jafarpour**, T. Biancalani, N. Goldenfeld. Noise-induced symmetry breaking far from equilibrium and the emergence of biological homochirality. *Phys. Rev. E.* 95.3 (2017)
5. N. Goldenfeld, T. Biancalani, **F. Jafarpour**. Universal biology and the statistical mechanics of early life. *Phil. Trans. R. Soc. A*, 375, 20160341 (2017)
4. D. Pirjol, **F. Jafarpour**, S. Iyer-Biswas. Phenomenology of stochastic exponential growth. *Phys. Rev. E.* 95.6 (2017)
3. **F. Jafarpour**, T. Biancalani, N. Goldenfeld. Noise-induced mechanism for biological homochirality of early life self-replicators. *Phys. Rev. Lett.* 115.15 (2015) (**Featured in Physics**)
2. **F. Jafarpour**, L. Angheluta, N. Goldenfeld. Velocity statistics for interacting edge dislocations in one dimension from Dyson's coulomb gas model. *Phys. Rev. E.* 88.4 (2013)
1. G. Karimi, **F. Jafarpour**, X. Li. Characterization of flooding and two-phase flow in polymer electrolyte membrane fuel cell stacks. *J. Power Sources*, Vol 187, Issue 1, (2009)

Seminars/Invited Talks

- 2017 **Universal Biology Workshop**, *Earth-Life Science Institute, Tokyo Institute of Technology.*
(invited by: Prof. Carlos Mariscal)
- 2016 **Invited Panelist, SpaceVision Conference**, *Purdue University.*
(invited by: Students for the Exploration and Development of Space)
- 2016 **Widely Applied Mathematics Seminars**, *Harvard University.*
(invited by: Prof. Ariel Amir)
- 2016 **Special KIC(Bethe)/LASSP Seminar**, *Cornell University.*
(invited by: Prof. James Sethna)
- 2015 **Biophysics Symposium**, *Princeton University.*
(invited by: Prof. Curtis Callan)
- 2015 **Complex Matter and Biophysics Seminar**, *North Carolina State University.*
(invited by: Prof. Karen Daniels)
- 2015 **ELSI Seminar**, *Earth-Life Science Institute (ELSI), Tokyo Institute of Technology.*
(invited by: Dr. Nicholas Guttenberg)

Conference Talks

- 2015 F. Jafarpour, T. Biancalani, N. Goldenfeld. Noise-induced homochirality from autocatalysis without chiral inhibition. Astrobiology Science Conference
- 2015 F. Jafarpour, T. Biancalani, N. Goldenfeld. Noise-Induced Homochirality in Spatially Extended Chemical and Biological Systems. Bulletin of the American Physical Society
- 2014 F. Jafarpour, N. Goldenfeld. Mathematical Model of Evolution of Complexity. Astrobiology Graduate Conference

Work Experience

Summer 2016 Quantitative Developer, Akuna Capital, Chicago IL

Teaching Experience

- 2016-2017 **Guest Lecturer** - Physics 570: Stochastic Processes in Physics (Purdue University)
- Fall 2015 **Mentor to Teaching Assistants** - Physics 101: Mechanics & Heat (University of Illinois)
- 2010-2015 **Teaching Assistant** - Physics 101: Mechanics & Heat (University of Illinois)
Outstanding Instructor Award (Spring 2014)
Rated excellent by students (all six semesters)
- Spring 2011 **Teaching Assistant** - Physics 213: Thermal Physics (University of Illinois)
Rated excellent by students
Teaching Assistant Physics 214: Quantum Physics (University of Illinois)

Computer skills

Languages C, C++, Mathematica, Python, Matlab
Other \LaTeX , HTML/CSS, Bash