Joanna Robaszewski

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Education

Aug. 2014 - Sept. 2020	Doctor of Philosophy (PhD) in Physics, specialization in Quantitative Biology **Brandeis University**, Waltham, MA, USA
Aug. 2014 - Aug. 2015	Master of Science in Physics **Brandeis University**, Waltham, MA, USA
Sept 2009 - June 2013	Bachelor of Science in Physics **California Institute of Technology**, Pasadena, CA, USA

Professional Experience

Jan 2021 - Present	**Postdoctoral Research Fellow** for Prof. Peng Yin Wyss Institute and Dept. of Systems Biology, Harvard University, Boston MA
Aug 2014 - Oct. 2020	**Graduate Research Assistant** for Prof. Zvonimir Dogic Dept. of Physics, Brandeis University, Waltham, MA Dept. of Physics, University of California - Santa Barbara, Santa Barbara, CA Investigated self–assembly in model liquid crystal systems, with the goal of understanding the physical behavior of biological membranes
Jan 2018 - May 2018	Howard Hughes Medical Institute **Instructor** Quantitative Biology Research Community, Brandeis University, Waltham, MA Awarded position to design a short course to introduce undergraduates to fundamental concepts and research in experimental soft condensed matter
July 2016 July 2017	**Physics Instructor** for POSSE Foundation Bootcamp Brandeis University, Waltham, MA Led lectures introducing students from underrepresented groups to undergraduate physics
Aug 2013 - Aug 2014	**Visiting Postgraduate Research Fellow** for Prof. Peng Yin Molecular Systems Laboratory, Wyss Institute, Harvard Medical School, Boston, MA Developed programmable molecular systems, primarily using single stranded DNA tiles; experimented with physical models of self-assembly on the macroscale
March 2013 - June 2013	**Undergraduate Research Assistant** for Prof. Rob Phillips Dept. of Biochemistry and Molecular Biophysics, Caltech, Pasadena, CA Experimentally investigated thermodynamic models of gene regulation

Aug 2012 - Jun 2015	**Teaching Assistant** for courses in physics and astrophysics Dept. of Physics, Brandeis University, Waltham, MA Dept. of Astronomy and Astrophysics, Caltech, Pasadena, CA Summer Science Program (SSP), Santa Barbara, CA Led hands–on laboratory sessions and helped with course preparation and instruction for Profs. H. Wellenstein (Brandeis), J. Johnson (Caltech) and T. Furutani (SSP)
April 2011 - Aug. 2011	**Summer Undergraduate Research Fellow** for Prof. George Djorgovski Center for Advanced Computing Research, Caltech, Pasadena, CA Developed a program (Python) to classify light curves of flare stars; ran follow-up observations on flare star candidates at Palomar Observatory
June 2010 - Aug. 2010	**Homer J. Stewart Research Fellow** for Prof. Lynne Hillenbrand Dept. of Astronomy and Astrophysics, Caltech, Pasadena, CA Conducted spectroscopic analysis of young stars and brown dwarfs; utilized the Unix-based IRAF system for image processing and data analysis

Skills and Interests

Lab Techniques	**Biological methods:** Bacteriophage production and phase display, molecular cloning; DNA extraction, purification, sequencing; gels and blots, protein purification, chromatography, spectrophotometry, fluorescence analysis and assays **Microscopy:** Electron microscopy (SEM, TEM), probe microscopy (AFM), optical microscopy (brightfield, DIC, phase contrast, fluorescence, TIRF, confocal), optical traps
Programming	Python, MATLAB, Mathematica. Experienced with Windows, Linux
Languages	Fluent in **English**, working proficiency in **Spanish**
Additional	Interested in science communication, advocacy, translation to the marketplace

Leadership Experience, Service, and Awards

2018	Co-chair of Brandeis Career Development for the Sciences Committee
2017	Physics liaison to the Brandeis Career Development for the Sciences Committee
2017 - 2018	Designed and advised research project for undergraduate student
2016	Research2Innovation workshop for research translation to the marketplace
2019	Best Poster Award (2019 Soft Condensed Matter Gordon Research Seminar)
2015 - 2017	NIH Quantitative Biology Training Fellowship (Brandeis University)
2014 - 2015	Martin Fisher Endowed Fellowship in Physics (Brandeis University)
2011	Summer Undergraduate Research Fellowship (Caltech)
2011	Northeast Conference on Science and Skepticism Scholarship
2010	Homer J. Stewart Research Fellowship (Caltech)

References

Prof. Peng Yin
Postdoc research adviser
Professor of Systems Biology
Harvard University
py@hms.harvard.edu

Prof. Zvonimir Dogic
Graduate research adviser
Professor of Physics
University of California, Santa Barbara
zdogic@physics.ucsb.edu

Prof. Jane Kondev
Academic mentor
Professor of Physics
Brandeis University
kondev@brandeis.edu

Publications and Presentations

Robaszewski, Joanna. Jia, Leroy. Adkins, Raymond. Pelcovits, Robert. Powers, Thomas. Dogic, Zvonimir. "Inducing vesicle formation in colloidal membranes by controlling membrane thickness." *In preparation.* (2021)

Miller, Joia. Hall, Doug. Robaszewski, Joanna. Sharma, Prerna. Hagan, Michael. Grason, Gregory. Dogic Zvonimir. "All twist and no bend makes raft edges splay: Spontaneous curvature of domain edges in colloidal membranes." *Science Advances*, 6, 31, eaba2331 (2020)

Balchunas, Andrew. Jia, Leroy. Zakhary, Mark. Robaszewski, Joanna. Gibaud, Thomas. Dogic, Zvonimir. Pelcovits, Robert. and Powers, Thomas. "Force-Induced Formation of Twisted Chiral Ribbons." *Physical Review Letters* 125, 018002 (2020)

Lin, Tong. Yan, Jun. Ong, Luvena. Robaszewski, Joanna. Lu, Hoang. Mi, Yongli. Yin, Peng. Wei, Bryan. "Hierarchical Assembly of DNA Nanostructures Based on Four-Way Toehold-Mediated Strand Displacement." *Nano Letters* 18, 8 (2018)

Wei, Bryan. Vhudzijena, Michelle. Robaszewski, Joanna. Yin, Peng. "Self-Assembly of 2D complex shapes from single-stranded DNA tiles." *Journal of Visualized Experiments* 99, e52486-e52486 (2015)

Robaszewski, Joanna. Dogic, Zvonimir. "Edge Tension Instability Drives Vesicle Formation in Non-Amphiphilic Colloidal Membranes."
2019 Gordon Research Conference and Seminar: Soft Condensed Matter [Poster].
Won Gordon Research Seminar Best Poster Award.

Robaszewski, Joanna. Dogic, Zvonimir. "Assembling vesicles with filamentous viruses."
2017 Boston Area Soft Matter Conference [Talk].

Robaszewski, Joanna. Dogic, Zvonimir. "Two and Three Dimensional Conformations of Filamentous Phage Assemblies." *2016 Gordon Research Conference: Bioinspired Materials* [Poster].

Robaszewski, Joanna. Dogic, Zvonimir. "Polyhistidine Tagged Phage in Colloidal Membrane Assemblies." *2015 Brandeis University Quantitative Biology Retreat* [Poster].