

# Asja Radja

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Department of Physics, Bryn Mawr College

**Research interests: To advance the application of statistical mechanics and computational modeling to evolutionary biology by employing field work, experimental imaging, and phenomenological modeling which, when combined, reveal rules of biological self-assembly that generate complex morphologies seen in a multitude of living matter systems.**

**Appointments** Bryn Mawr College, Assistant Professor, Department of Physics, 2022 – Present  
Harvard University, NSF-Simons Fellow, Quantitative Biology Initiative, 2020 – 2022  
Harvard University, Schmidt Science Fellow, Applied Math Department, 2019 – 2020

**Education** University of Pennsylvania, Ph.D. in Physics, 2019  
University of Pennsylvania, M.S. in Physics, 2015  
University of Texas at Dallas, B.S. in Physics and Biochemistry, 2013

**Awards** NSF-Simons Fellowship, 2020  
Schmidt Science Fellowship, 2019  
The Herbert B. Callen Memorial Prize, 2019  
Finalist in Wikipedia Science Photo Competition (US), 2018  
Dean’s Award for Distinguished Teaching by Graduate Students, 2017  
Presidential Achievement Scholarship, 2012  
Patty Henry Pinch Scholarship, 2012  
Undergraduate Research Award, 2011  
Academic Excellence Scholarship, 2008 – 2013

**Publications** A Radja. “Pollen wall patterns as a model for biological self-assembly” **JEZ-B Molecular and Developmental Evolution**, 2020. [\[pdf\]](#)

J Liu, **A Radja**, Y Gao, R Yin, A Sweeney, S Yang. “Mimicry of biophysical pathway leads to diverse pollen-like surface patterns” **PNAS**, 2020. [\[pdf\]](#)

**A Radja**, EM Horsley, MO Lavrentovich, AM Sweeney. “Pollen cell wall patterns form from modulated phases” **Cell**, 2019. [\[pdf\]](#)

MO Lavrentovich, EM Horsley, A Radja, AM Sweeney, RD Kamien. “First-order patterning transitions on a sphere as a route to cell morphology” **PNAS**, 2016. [\[pdf\]](#)

G Yang, AE Bolotnikov, PM Fochuk, O Kopach, J Franc, E Belas, KH Kim, GS Camara, A Hossain, Y Cui, AL Adams, **A Radja**, R Pinder, RB James. “Post-growth thermal annealing study of CdZnTe for developing room-temperature X-ray and gamma-ray detectors” **Journal of Crystal Growth**, 2013. [\[pdf\]](#)

K Roodenko, HM Nguyen, L Caillard, **A Radja**, P Thissen, JM Gordon, YN Garstein, AV Malko, YJ Chabal. “Anisotropic optical properties of thin-film thiocarbocyanine dye aggregates” **Journal of Physical Chemistry C**, 2013. [\[pdf\]](#)

**Invited talks** **Harvard Condensed Matter Theory Kid’s Seminar**, February 2022  
**Joint Mathematics Meeting, AMS**, March 2022

**NSF-Simons Research Centers for Mathematics of Complex Biological Systems Annual Meeting**, March 2022

**Discrete and Topological Models in Molecular Biology**, April 2022

**European Evolutionary and Developmental Biology Meeting**, May 2022

**Princeton University Rising Stars in Biological Engineering**, November 2020

**Broad Institute Models, Inference, and Algorithms Seminar Series**, November 2020

## Other talks

**University of Pennsylvania, Biochemistry and Molecular Biophysics Colloquium**, 2017

**American Physical Society, March Meeting**, 2017

**Penn-KIST Joint Symposium**, Poster, 2016

**American Physical Society, March Meeting**, 2016

**Shape Up Conference**, Poster, 2015

**Geometry and Physics of Spatial Random Systems Conference**, Poster, 2015

**American Physical Society, March Meeting**, 2012

## Outreach

**Cambridge Ringe and Latin School Volunteer**, Fall 2019-Spring 2020 [1-2hr/week STEM tutoring for high school students]

**Women+ of Color Workshop Volunteer**, 2019 [Reviewed graduate school applications for underserved members of community – [program link](#)]

**PennLENS (University of Pennsylvania Laboratory Experience in Natural Sciences) Mentor**, Summer 2015,2016 [Mentored two high school students, 5hrs/week for summer in research lab setting – [program link](#)]

**SPARK Mentor**, Spring 2015 [Mentored middle school student 2hrs/week for semester – [program link](#)]

**Lecturer at Swarthmore Catalyst Conference**, 2015 [Taught students about structural color in nature during afternoon conference – [program link](#)]

**NanoDay Facilitator**, 2015 [Group leader for high school students – [program link](#)]