Matthew J. Bovyn

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Education

University of California, Irvine (UCI) Fall 2014 - Present

PhD Physics	Advisors: Jun Allard and Steve Gross
MS Physics	Mathematical Computational and Systems Biology Gateway Program
	Concentration in Chemical and Materials Physics

Northern Arizona University (NAU) Fall 2007 - Winter 2012

BS Physics	Minor in Mathematics
BSE Mech Eng	Minor in Physical Science
	Liberal Studies Honors

Publications

J.P. Bergman[†], M.J. Bovyn[†], F.F. Doval, A. Sharma, M.V. Gudheti, S.P. Gross, J.F. Allard[‡], M.D. Vershinin[‡], **Cargo Navigation Across 3D Microtubule Intersections**. *Proceedings of the National Academy of Sciences of the United States of America*, 115(3), 537-542. [†],[‡] These authors contributed equally.

W.M. Grundy, S.J. Morrison, M.J. Bovyn, S.C. Tegler, and D.M. Cornelison. 2011. **Remote Sensing D/H Ratios in Methane Ice: Temperature-Dependent Absorption Coefficients of CH3D in Methane Ice and in Nitrogen Ice.** *Icarus* Volume 212, Issue 2, 941–949

S.C. Tegler, D.M. Cornelison, W.M. Grundy, W. Romanishin, M.R. Abernathy, M.J. Bovyn, J.A. Burt, D.E. Evans, C.K. Maleszewski, and Z. Thompson. 2010. **Methane and Nitrogen Abundances on Pluto and Eris.** *The Astrophysical Journal* **725**, 1296–1305

Invited Talks

SIAM Conference on the Life Sciences, Minneapolis, August 2018

Selected Conference and Workshop Presentations

Poster: **Geometry Matters for Cargos Navigating 3D Microtubule Intersections**	Biophysical Society Annual Meeting, San Francisco, February 2018. American Society for Cell Biology Annual Meeting, Philadelphia, December 2017.
Poster: **Brownian dynamics simulation reveals freedom of motors in the cargo membrane can influence cargo dynamics**	Biophysical Society Thematic Meeting, Taipei, June 2017. Biophysical Society Annual Meeting, Los Angeles, February 2016. American Society for Cell Biology Annual Meeting, San Diego, December 2015. Quantitative Cell Biology Network Workshop, Chicago, October 2015.

Talk: **Driving Sodium-Potassium Pumps With An Oscillating Electric Field: Effects On Muscle Recovery**	American Physical Society March Meeting, Baltimore, March 2013. Won "Outstanding Undergraduate Presenter" Award

Funding and Awards

Current	NSF Integrative Graduate Education and Research Traineeship (IGERT) DGE-1144901 to Vasan Venugopalan, UCI Beckman Laser Center
	NIH R01 GM123068 to Jun Allard and Steve Gross
Years 2 & 3	NIH T32 Training Grant EB009418-07 to Arthur Lander and Qing Nie, UCI Center for Complex Biological Systems
Year 1	Mathematical, Computational and Systems Biology Fellowship
	NSF GRFP Honorable Mention
Undergraduate	The Outstanding Senior of the NAU College of Engineering, Forestry and Natural Sciences
	NAU Gold Axe Award
	NAU Department of Physics and Astronomy Bedwell Scholarship
	NAU Department of Physics and Astronomy Adel Scholarship
	Raytheon Missile Systems Scholarship
	NAU Department of Physics and Astronomy Chair's Scholarship
	Arizona Board of Regent's High Honors Tuition Scholarship
	Dean's List - 7 Semesters

Professional Activity

Founder and Organizer: Biophysics and Systems Biology Seminar Series

- Founded a series of research in progress talks for students in the Mathematical, Computational, and Systems Biology gateway program with co-founder Kerrigan Blake, 2016
- Expanded the seminar series to host invited speakers, 2017
- Scheduled and hosted speakers

Founder: UCI Center for Complex Biological Systems Outreach Program

- Founded an outreach program for the UCI Center for Complex Biological Systems with co-founder Sean Horan
- Won ASCB COMPASS outreach grant

President: NAU Society of Physics Students

- Organized and led outreach events to local schools
- Organized "Zone Meeting" for chapters throughout Arizona

Member: Tau Beta Pi, The Engineering Honor Society

Member: Sigma Pi Sigma, National Physics Honor Society

Teaching

Supplemental Instructor, NAU:

- Physics 111: General Physics I (mechanics, non-calculus based)
- Physics 262: University Physics II (electricity and magnetism, calculus based)

Experience Before PhD

Winter 2014	Rotation Student Laboratory for Fluorescence Dynamics Irvine, California *Fluorescence Lifetime Imaging of Turbid Samples* Advisors: Enrico Gratton and Ylenia Santoro
Summer 2014	Graduate Student Researcher Beckman Laser Institute Irvine, California *Deep Tissue Biophotonics for Breast Cancer Diagnostics* Advisors: Bruce Tromberg and Albert Cerussi
Jan 2014 to Jun 2014	Tutor Tutor Doctor & Varsity Tutors Irvine, California *High School Physics and Calculus*
Feb 2013 to Jun 2013	Research Assistant Univeristy of Puerto Rico, Rio Piedras San Juan, Puerto Rico *Herbarium Server Development*
Fall 2012	Research Assistant Northern Arizona University *Planetary Astrophysics of Icy Outer Solar System Objects* Advisors: Will Grundy and Stephen Tegler
Summer 2012	NSF Research Experience for Undergraduates Intern Univeristy of South Florida *Biophysics of Sodium-Postassium Pumps* Advisor: Wei Chen
Fall 2011 to Spring 2012	Research Assistant Northern Arizona University *Planetary Astrophysics of Icy Outer Solar System Objects* Advisors: Will Grundy and Stephen Tegler
Summer 2011	NSF Research Experience for Undergraduates Intern Univeristy of Idaho *Solid State Physics of Nanosprings* Advisor: Dave McIlroy
Fall 2010 to Spring 2011	NASA Space Grant Intern Northern Arizona University *Near Infrared Spectroscopy of Carbon Dioxide Ice* Advisors: Will Grundy and Stephen Tegler
Summer 2010	Research Assistant Lowell Observatory, Flagstaff Arizona *Planetary Astrophysics of Icy Outer Solar System Objects* Advisors: Will Grundy and Dave Cornelison