

### Education

- 2011 — 2017 Ph.D. in Biophysics  
University of Michigan, Ann Arbor, MI
- 2006 — 2011 B.S. in Biophysics, B.A. in Music Performance  
University of California at Los Angeles, CA

### Research

- 2017 — present **Postdoctoral Fellow**  
Physical characterization of *in vivo* predator prey dynamics  
Steve Pressé, Principal Investigator
- 2011 — 2017 **Graduate Research Assistant**  
Single Molecule Fluorescence Microscopy Methods  
Dr. Julie S. Biteen, Research Advisor
- Single molecule super resolution fluorescence imaging
  - Analysis methods development in Matlab
  - Image correlation spectroscopy
- 2010 — 2011 **Undergraduate Research Assistant**  
UCLA Department of Physics and Astronomy  
Dr. Dolores Bozovic, Research Advisor
- Synthesis of core-shell nanoparticles with a custom-built apparatus
  - Dissection of Bullfrog inner ears
  - New method of magnetic actuation of saccular hair bundles

### Teaching

- 2016 Graduate Student Instructor, Chem. 463 (Thermodynamics)
- 2015 Graduate Student Instructor, Bioph. 370, Chem. 463
- 2014 Graduate Student Instructor, Chem. 130, Chem. 463
- 2013 Graduate Student Instructor, Chem. 130, Chem. 463
- 2012 Graduate Student Instructor, Chem. 130, Chem. 230

### Awards and Honors

- 2016 Rackham Graduate School Travel Grant
- 2015 Rackham Graduate School Spring/Summer Research Grant
- 2014 Rackham Graduate School International Travel Grant

### Publications

#### Journal Articles

- David Rowland**, Julie Biteen. 2017. Measuring molecular motions inside single cells with improved analysis of single-particle trajectories. *Chem. Phys. Lett.* 674:173-178.
- David Rowland**, Hannah Tuson, Julie Biteen. 2016. Resolving fast, confined diffusion in bacteria with image correlation spectroscopy. *Biophys. J.* 110:2241—2251.
- Bing Fu, Jessica D. Flynn, Benjamin P. Isaacoff, **David Rowland**, and Julie S. Biteen. 2015. Super-resolving the distance-dependent plasmon-enhanced fluorescence of single dye and fluorescent protein molecules. *J. Phys. Chem. C*, 119:19350—19358.

**David Rowland**, Julie Biteen. 2013. Top-hat and asymmetric Gaussian-based fitting functions for quantifying directional single-molecule motion. *ChemPhysChem* 15:714–720.

**David Rowland**, Yuttana Roongthumskull, Jae-Hyun Lee, Jinwoo Cheon, Dolores Bozovic, 2011. Magnetic actuation of hair cells. *Appl. Phys. Lett.* 99, 193701.

#### Conference Proceedings

**David Rowland**, Damien Ramunno-Johnson, Jae-Hyum Lee, Jinwoo Cheon, Dolores Bozovic. Magnetic bead actuation of saccular hair cells. *Mechanics of Hearing*, 2011.

#### Presentations

##### Talks

Midwestern Quantitative Biology Seminar, 2016. *Resolving fast confined diffusion in bacteria with image correlation spectroscopy*

Association for Research in Otolaryngology Midwinter Meeting, 2011. *Magnetic actuation of bullfrog saccular hair cells*

##### Posters

Fast diffusion in bacteria using spatio-temporal image correlation spectroscopy. *Midwest Single Molecules Workshop*, University of Illinois Urbana-Champaign, 2014.

Measuring changes in *V. cholerae* TcpP motion with super-resolution and STICS. *Biophysical Society Winter Meeting*, San Francisco, 2014.

Fitting function for directed motion of point sources. *Chemical Biophysics Symposium*, University of Michigan, 2013.

Fitting function for localization and characterization of mobile single molecules, *Midwest Single Molecules Workshop*, University of Michigan, 2012.

#### References

Dr. Julie Biteen  
University of Michigan, Ann Arbor  
Department of Chemistry  
(734) 647-1165  
jsbiteen@umich.edu

Dr. Charles Brooks III  
University of Michigan, Ann Arbor  
Department of Chemistry and Biophysics  
Program  
(734) 647-6682  
brooksc1@umich.edu

Dr. Dolores Bozovic  
University of California, Los Angeles  
Department of Physics and Astronomy  
(310) 825-6176  
bozovic@physics.ucla.edu