

- Mentored undergraduate student from basic wet-chemistry skills through project design and completion

University of Utah

Salt Lake City, Utah

2012-2014

Undergraduate Researcher

- Made and characterized highly reflective 1D Bragg stack photonic crystals with high radiation durability using sol-gel processing techniques
- Monitored CdSe nanocrystal reaction kinetics using *in-situ* UV-Vis absorbance spectroscopy
- Processed thousands of spectra using MATLAB and Visual Basic programming
- Supervised and graded organic chemistry labs as Lab Teaching Assistant
- Learned application of HPLC, GC, MS, TGA and wet-chemistry analytical techniques in advanced coursework

Watson Pharmaceuticals (Teva)

Salt Lake City, Utah

2011-2012

Intern, Analytical R&D Research Stability

- Performed HPLC and UPLC timepoint assays, maintained and troubleshooting of LC instruments
- Maintained a Good Manufacturing Practices compliant/FDA regulated lab notebook
- pH and Viscosity determination and adhesive cold flow testing on transdermal products to determine stability of active pharmaceutical components
- Report findings in timely and clear manner through reports, presentations, and discussions with managers
- Safely prepare and track standards for analysis of federally regulated active ingredients

AWARDS & SELECTED AFFILIATIONS

Best Poster Award, Quantum Dot/Phosphor Global Summit, 2019

Jack Miller Award for Excellence in Teaching by a Graduate Student, 2016

University of Utah Honors at Entrance full-tuition scholarship, 2010

Girls Science Day at Columbia: Oversaw age-appropriate scientific activities for middle-school students

SELECTED PUBLICATIONS

- Brauser, E. M. †; **Hull, T. D.** †; McLennan, J. D.; Siy, J. T.; Bartl, M. H. “Experimental Evaluation of Kinetic and Thermodynamic Reaction Parameters of Colloidal Nanocrystals.” *Chemistry of Materials* 2016, 28 (11), 3831–3838. (†authors contributed equally)
- Guo, Y.; Yaffe, O.; **Hull, T. D.**; Owen, J. S.; Reichman, D. R.; Brus, L. E. “Dynamic Emission Stokes Shift and Liquid-like Dielectric Solvation of Band Edge Carriers in Lead-Halide Perovskites.” *Nature Communications* 2019, 10 (1), 1175.
- Glaser, T.; Müller, C.; Sendner, M.; Krekeler, C.; Semonin, O. E.; **Hull, T. D.**; Yaffe, O.; Owen, J. S.; Kowalsky, W.; Pucci, A.; et al. “Infrared Spectroscopic Study of Vibrational Modes in Methylammonium Lead Halide Perovskites.” *J. Phys. Chem. Lett.* 2015, 6 (15), 2913–2918.
- Semonin, O. E.; Elbaz, G. A.; Straus, D. B.; **Hull, T. D.**; Paley, D. W.; Van der Zande, A. M.; Hone, J. C.; Kymissis, I.; Kagan, C. R.; Roy, X.; et al. “Limits of Carrier Diffusion in N-Type and P-Type CH₃NH₃PbI₃ Perovskite Single Crystals.” *J. Phys. Chem. Lett.* 2016, 7 (17), 3510–3518.
- Elbaz, G. A.; Straus, D. B.; Semonin, O. E.; **Hull, T. D.**; Paley, D. W.; Kim, P.; Owen, J. S.; Kagan, C. R.; Roy, X. “Unbalanced Hole and Electron Diffusion in Lead Bromide Perovskites.” *Nano letters* 2017, 17 (3), 1727–1732.