Shane Devlin

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EDUCATION

University of California, Berkeley | Berkeley, CA — August 2018 - Present
College of Chemistry
Candidate for PhD in Chemistry (expected May 2023)

Boston University | Boston, MA — May 2018
College of Arts and Sciences
Bachelor of Arts in Chemistry with Honors, Cum Laude

RESEARCH EXPERIENCE

Experimental Physical Chemistry, Department of Chemistry at UC Berkeley — Octo 2018 – Present
Advisor: Richard J. Saykally

- Operated ultrafast laser systems for non-linear spectroscopy studies of ion adsorption to aqueous interfaces (broadband deep UV sum frequency generation and second harmonic generation)
- Implemented planar liquid sheet technology into non-linear optics experiment, in collaboration with Jake Koralek (sample delivery department at LCLS)
- Conducted research at synchrotron sources and Xray Free Electron Laser facilities, including Xray Reflectivity studies of laser melted carbon (FERMI, Trieste), Mega-Electron Volt Ultrafast Electron Diffraction (MeV-UED, LCLS) of laser melted diamond, and Soft Xray Second Harmonic Generation on thin water sheets (ChemRIX, LCLS)
- Performed frequent data analysis with programs such as Python, Jupyter Notebook, and Igor

Experimental Physical Chemistry, Dept. of Chemistry at Boston University — Nov 2015 – May 2018
Advisors: Shamsunder Erramilli and Lawrence Ziegler

- Trained in nonlinear optics experiments, including vibrational sum-frequency generation spectroscopy and two-dimensional IR spectroscopy

PUBLICATIONS:

- Devlin, S.W.; Jamnuch, S.; Pascal, T.; Saykally, R.J. "Transient Agglomeration Drives Reversed Fractionation of The Aqueous Carbonate System at the Air-water Interface" manuscript in progress.
- Devlin, S. W.; Benjamin, I.; Saykally, R. J. "On The Mechanism of Ion Adsorption To Aqueous Interfaces: Air-water vs. Oil-Water" *PNAS,* **2022,** In Press.
- Devlin, S. W.; McCaffrey, D.; Saykally, R. J. "Characterizing Anion Adsorption to Aqueous Interfaces: Air-water vs Toluene-water" *J. Phys. Chem. Lett.* ***2022,*** *13,* 222-228.
- Du, C.; Andino, R. S.; Rotondaro, M. C.; Devlin, S. W.; Erramilli, S.; Ziegler, L. D.; Thuo, M. M. "Substrate Roughness and Tilt Angle Dependence of Sum-Frequency Generation Odd--Even Effects in Self-Assembled Monolayers." *J. Phys. Chem. C* **2022**, *126* (16), 7294–7306.
- Raj, S. L.; Devlin, S. W.; et al. "Free Electron Laser Measurements of Liquid Carbon Reflectivity in the Extreme Ultraviolet" *Photonics,* **2020,** 7(2), 35.
- Andino RS, Liu J, Miller CM, Chen X, Devlin S.W, Hong MK, Rajagopal R, Erramilli S, Ziegler LD. "Anomalous pH-Dependent Enhancement of *p*-Methyl Benzoic Acid Sum-Frequency Intensities: Cooperative Surface Adsorption Effects." *J Phys Chem A*. **2020,** 124(16), 3064-3076.

CONFERENCES AND PRESENTATIONS

Ultrafast Xray Summer School, LCLS, Stanford, CA — June 2022

- Workshop on Xray Free Electron Laser technology + LCLS endstations

American Chemical Society Conference, San Diego CA March 2022
- Poster presentation

Graduate Research Conference, Berkeley CA October 2019
- Presentation to the Department of Chemistry faculty and graduate students

AWARDS

Department of Chemistry Instructional Achievement Award April 2022
- Awarded to graduate student instructors who have had significant impact on student learning

Outstanding Graduate Student Instructor Award April 2022
- Awarded to graduate student instructors who excel in teaching

Undergraduate ACS Physical Chemistry Award May 2018
- Awarded to a senior who excelled in physical chemistry research + coursework

TEACHING EXPERIENCE

Head Graduate Student Instructor, Intensive Gen. Chem. (majors) at UC Berkeley Spring 2020, 2021
- Worked closely with Professors John Arnold and Rich Saykally to develop assignments, exams, and lead review sessions. Gave multiple lectures to class of over 200 students

Graduate Student Instructor, General chemistry (non majors) at UC Berkeley Fall 2018
- Led weekly laboratory sessions and discussion sections
- Developed worksheets and laboratory reports for students

Teaching Assistant, General Chemistry (non-majors) at Boston University Spring 2017
- Led a weekly laboratory session and graded reports + exams