

ZACHARY STREETER

PERSONAL INFORMATION

Born in West Monroe, Louisiana, 23 May 1988

email zacharylouis42@gmail.com

github <https://github.com/zstreeter>

Adress 2314 Bonar St. Berkeley, Ca 94702

phone (M) +1 (318) 614 6728

Familial Single, no children

Status

GOALS

Seek understanding while providing service to others.

INTERNSHIPS AND RESEARCH POSITIONS

2012–2013 Synchrotron Radiation Center

SRC Built gas handling systems, ran leak checks for high vacuum line, wrote Igor Pro code for data analysis, and worked on calibrating the monochrometer. Also attended lectures in relativistic electrodynamics and worked on electrodynamic problem sets.

Reference: Gary FINDLEY +1 (318) 342 1835 · findley@ulm.edu

Summer Center for Advanced Microstructures and Devices

2014

CAMD Became a user in order to continue research from SRC.

Reference: Cherice EVANS +1 (718) 997 4216 · cherice.evans@qc.cuny.edu

Spring Brookhaven National Laboratory

2015

BNL Performed experiments with soft X-rays utilizing the Linear Electron Accelerator Facility (LEAF) and the van de Graaff. Prepared samples in glove box and worked on purifying Xenon.

Reference: Richard Holroyd +1 (631) 344 4329 · holroydr@optonline.net

Summer Lawrence Berkeley National Laboratory

2016 to

Present

LBNL Created fully dimensional potential energy surfaces for H_2O^{++} using MOLPRO and Columbus Quantum Chemistry packages. Honed programming skills in C and Fortran. Used NERSC supercomputers EDISON and CORI for running large parallel code. Became proficient in parallel programming using PETSC, MPI, and OpenMP.

Reference: Clyde W. McCurdy +1 (510) 486 4283 · cwmccurdy@lbl.gov

EDUCATION

2007-2009, The University of Louisiana, Monroe

2011-2014

Bachelor of Science GPA: 3.46 · School: School of Sciences

Major (Concentration): Biology (Chemical Biology)

Personal Courses: Attended formal lectures in Statistical Mechanics, Quantum

Mechanics, Electricity and Magnetism, and Relativistic Electrodynamics.
 Advisor: Prof. Gary FINDLEY & Prof. Ann FINDLEY

2015- The University of California, Davis
 present

Doctor of
 Philosophy

GPA: 3.6 · School: Chemistry
 Description: This degree is a PhD in Theoretical Chemical Physics.
 Advisor: Prof. Clyde W. McCURDY

TEACHING

Spring Queens College
 2015

Teaching Assistant

Taught second semester of freshman chemistry and the corresponding lab.
 Created lab and recitation quizzes and was the sole arbiter as to how the
 courses were conducted .
 Assisted Professor: Prof. Cherice EVANS

2015-2016 University of California, Davis

Teaching Assistant

Taught freshman chemistry for two quarters. Also taught quantum mechanics
 for physical chemistry students.

TALKS AND POSTERS PRESENTED AT CONFERENCES

2013 SRC Users
 Meeting

Zachary Streeter, Kamil Krynski, C. M. Evans, and G. L. Findley, "*Quasi-Free
 electron in near critical point hydrogen and deuterium*," 2013 SRC Users Meeting,
 University of Wisconsin Synchrotron Radiation Center, Stoughton, WI,
 September 27 – 28, 2013.

2013 SRC Users
 Meeting

Kamil Krynski, Zachary Streeter, C. M. Evans, and G. L. Findley, "*Field
 ionization and photoionization of CH₃I perturbed by diatomic molecules: electron
 scattering in H₂, HD, D₂, O₂ and CO*," 2013 SRC Users Meeting, University of
 Wisconsin Synchrotron Radiation Center, Stoughton, WI, September 27 – 28,
 2013.

2014 DAMOP

Cherice Evans, Kamil Krynski, Zachary Streeter, and G. L. Findley, "*Field
 Ionization and Photoionization of CH₃I Perturbed by Diatomic Molecules: Electron
 Scattering in H₂, D₂, O₂, and CO*," 45th Annual Meeting of the APS Division of
 Atomic, Molecular, and Optical Physics, Madison, WI, June 2 – 6, 2014.

2014 DAMOP

Zachary Streeter, Kamil Krynski, C. M. Evans, and G. L. Findley, "*The energy of
 the quasi-free electron in near critical point H₂, D₂, and O₂*," 45th Annual Meeting
 of the APS Division of Atomic, Molecular, and Optical Physics, Madison, WI,
 June 2 – 6, 2014.

2016 APS

Kamil Krynski, Zachary Streeter, C. M. Evans, and G. L. Findley, "*Energy of the
 Quasi-Free Electron in H₂, D₂, and O₂: Probing Intermolecular Potentials within the
 Local Wigner-Seitz Model*," American Physical Society March Meeting, Baltimore,
 MD, March 14 – 18, 2016.

2017 DAMOP

Zachary Streeter, Frank Yip, Dylan P. Reedy, Allen Landers, C. William
 McCurdy, "*Classical trajectory studies on the dynamics of one-photon double
 photionization of H₂O*," 48th Annual Meeting of the APS Division of Atomic,
 Molecular, and Optical Physics , Sacramento, CA, June 5 – 9, 2017.

2018 ACS

Cherice M. Evans, Jennifer Hare, Baxter Flor, Kamil Krynski, Zachary Streeter,
 and G. L. Findley, "*Energy of the Quasi-Free Electron in CO and HD: Extension of
 the Local Wigner-Seitz Model to Polar Fluids*," 225th ACS National Meeting and
 Exposition, New Orleans, LA, March 18 – 22, 2018.

2019 DAMOP

Z. L. Streeter, and C. W. McCurdy, "*Sequential dissociation of H₂O⁺⁺ following*

double photoionization" 50th Annual Meeting of the APS Division of Atomic, Molecular, and Optical Physics, Milwaukee, WI, May 27 – 31, 2019.

PUBLICATIONS

- Published* C. M. Evans, Kamil Krynski, Zachary Streeter, and G. L. Findley, "*Energy of the Quasi-free Electron in H₂, D₂ and O₂: Probing Intermolecular Potentials within the Local Wigner-Seitz Model*," J. Chem. Phys. **143**, 224303 (2015)"
- Published* C. M. Evans, Baxter Flor, Kamil Krynski, Zachary Streeter, and G. L. Findley, "*Energy of the Quasi-Free Electron in CO and HD: Probing Intermolecular Potentials within the Local Wigner-Seitz model*," J. Chem. Phys. **149**, 064307 (2018).
- Published* Zachary L. Streeter, Frank L. Yip, Robert R. Lucchese, Benoit Gervais, and C. William McCurdy, "*Dissociation dynamics of the water dication following one-photon double ionization I: Theory*," Phys. Rev. A, **98**, 053429 (2018).
- Published* D. Reedy, J. B. Williams, B. Gaire, A. Gatton, M. Weller, A. Menssen, T. Bauer, K. Henrichs, Ph. Burzynski, B. Berry, Z. L. Streeter, J. Sartor, I. Ben-Itzhak, T. Jahnke, R. Dörner, Th. Weber, and A. L. Landers, "*Dissociation dynamics of the water dication following one-photon double ionization I: Experiment*," Phys. Rev. A, **98**, 053430 (2018).

RESEARCH INTERESTS

Experimental Molecular Electronic Spectroscopy

- Experimental applications of synchrotron radiation.
- Vacuum ultraviolet (VUV) spectroscopy of highly-excited states of atoms.
- Electric and magnetic field effects in the VUV.
- Applications of quantum defect theory to molecular Rydberg states.
- Rydberg/valence mixing.

Theoretical Physics and Chemistry

- Quantum Information and Computation.
- Nonlinear chemical reaction kinetics.
- Scattering Theory.
- Symplectic Mechanics.
- Underlying Symmetries throughout Physics.

January 19, 2020