

## Curriculum Vitae—Amber T. Krummel

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### EDUCATION & TRAINING

2007-2010, Harvard Research Fellow, Harvard University, Cambridge, MA  
2002-2007, Ph.D. in Chemistry, University of Wisconsin—Madison, Madison, WI  
1997-2001, B.S. in Chemistry with Honors, Portland State University, Portland, OR

### PROFESSIONAL APPOINTMENTS & LEADERSHIP ROLES

Faculty Director of Innovation Liaison Management, Office of the Vice President of Research, Colorado State University, Fort Collins, CO, (2024-Present)  
Editorial Advisory Board, The Journal of Chemical Physics, (2023-Present)  
Secretary-Treasurer, Physical Division of the American Chemical Society, (2022-Present)  
Program Chair, Ultrafast Phenomena 2024, Optica, (2022-Present)  
CSU Presidential Leadership Fellow 2021-2023, Office of the Vice President of Research, Fort Collins, CO  
Associate Chair of Operations (2020-Present), Chemistry Dept., Colorado State University, Fort Collins, CO  
Editorial Advisory Board, The Journal of Physical Chemistry, (2019-2021)  
Technical Program Committee, Ultrafast Phenomena 2018, 2020, and 2022, Optica, (2017-2022)  
Executive Vice President of Research & Development (8/2015-8/2023), Revelant, LLC, Webster, TX.  
Associate Professor, (8/2017-Present) Chemistry Dept., Colorado State University, Fort Collins, CO.  
Assistant Professor, (8/2010-2017) Chemistry Dept., Colorado State University, Fort Collins, CO.  
Research Assistant, (9/2001-8/2002), Portland State University, Portland, OR (Professor Niles Lehman)  
National Institutes of Health Summer Internship, Summer 1999, Bethesda, MD (Dr. Anita Roberts)

### AWARDS

2019-2021 Monfort Professor, Colorado State University, highest honor for junior faculty at CSU  
2016 College of Natural Sciences Early Career Faculty Excellence in Teaching & Mentoring, CSU  
2016 Department of Energy Early Career Award  
2015 Alfred P. Sloan Research Fellowship  
2013 National Science Foundation CAREER Award  
2012 British Petroleum ExploRe Recipient given to 4 researchers across the world  
2007 Outstanding Mentor Award, University of Wisconsin—Madison, Dept. of Chemistry  
2006-2007 Marie Christine Kohler Fellow, University of Wisconsin—Madison  
2004-2005 NSF GK-12 Fellow, K-Through-Infinity Program, University of Wisconsin—Madison  
2001 Outstanding Service Award, “For exceptional research and teaching service to the department,” Portland State University, Department of Chemistry  
2001 Sally K. Reardon Memorial Award, “Given to one graduate of the University Honors Program for outstanding academic accomplishments,” University Honors College, Portland State University  
1997-2001 Oregon Laurels Scholarship, State of Oregon  
1997-2001 University Honors College, Portland State University

### MEMBERSHIPS

American Chemical Society, American Physical Society, Society for Petroleum Engineers

## PUBLICATIONS

### From independent work

40. Almaraz, R., Sayer, T., Toole, J., Austin, R., Farah, Y., Redwing, J., Trainor, N., Krummel, A. T., Montoya-Castillo, A., and Sambur, J., **Quantifying Interfacial Energetics of Monolayer MoS<sub>2</sub> Using *In Situ* Spectroelectrochemistry and Many-Body Theory**, *Energy & Environmental Science*, 2023, *accepted*; <https://doi.org/10.26434/chemrxiv-2023-kl1cv>.
39. Sayer, T., Farah, Y.R., Austin, R., Sambur, J. B., Krummel, A.T., and Montoya-Castillo, A., **Trion Formation Explains Dynamical Peak Shift in the Optical Spectra of Transition Metal Dichalcogenides**, *Nano Letters*, 2023, *23(13)*, pg. 6035–6041.
38. Donaldson, P. M., Greetham, G. M., Middleton, C. T., Luther, B. M., Hamm, P., Zanni, M.T., Krummel, A. T., **Breaking Barriers in Ultrafast Chemical Spectroscopy and Imaging Using 100 kHz Amplified Laser Systems**, *Accounts of Chemical Research*, 2023, *ASAP*; <https://doi.org/10.48550/arXiv:2303.04250v2>.
37. Tibbetts, C.A., Brantley, S., Gimble, N., Prieto, A.L., Corcelli, S.A., and Krummel, A.T., **Fluoroethylene Carbonate Additive Drives Structuring in Organic Carbonate Electrolytes**, *Energy Letters*, 2023, *submitted*.
36. Austin, R.\*, Farah, Y.R.\*, Sayer, T., Montoya-Castillo, A., Krummel, A.T., and Sambur, J. B., **In-Operando Hot Carrier Extraction in Monolayer MoS<sub>2</sub> Electrochemical Cells**, *Proceedings of the National Academy of Sciences*, 2023, *120*, e2220333120.
35. Kuhs, C., Mattson, M.A., and Krummel, A.T., **Vibrational Properties and Population Transfer Rates of Solvent Dependent Violanthrone-79 Aggregates**, *Journal of Chemical Physics*, 2023, *in preparation*.
34. Tibbetts, C.A., Wyatt, A.B., Luther, B.M., Rappe A., and Krummel, A.T., **Dicyanamide Anion Reports on Water Induced Local Structural and Dynamics Heterogeneity in Ionic Liquid Mixtures**, *Journal of Physical Chemistry*, 2023, <https://doi.org/10.1021/acs.jpcc.2c07060>, journal cover selected.
33. Farah, Y. R. and Krummel, A.T., **Heterodyne-Detected Vibrational Sum Frequency Generation Reports the pH-Dependent Reorientation of N3-Dye at the TiO<sub>2</sub> Interface**, *Journal of Chemical Physics*, 2022, v. 157, pg.044702, <https://doi.org/10.1063/5.0099543>.
32. Tibbetts, C.A., Wyatt, A.B., Luther, B.M., and Krummel, A.T., **Practical Aspects of 2D IR Microscopy**, (2021), invited chapter in ACS Books Symposium Series volume on Emerging Trends in Chemical Applications of Lasers, 2021, *Chapter 6*, pg. 109-134, DOI: 10.1021/bk-2021-1398.ch006.
31. Farah, Y. and Krummel, A.T., **pH-dependent Interfacial Structures of N3 Dye on a Gold Surface**, *Journal of Chemical Physics*, 2020, v.154, pg.124702, DOI: 10.1063/5.0040986.
30. Guchhait, B., Tibbetts, C.A., Tracy, K.M., Luther, B.M., and Krummel, A.T., **Ultrafast Vibrational Dynamics of a Trigonal Planar Anionic Probe in Ionic Liquids (ILs): A Two-Dimensional Infrared (2DIR) Spectroscopic Investigation**, *Journal of Chemical Physics*, 2020, v.152, pg. 164501.
29. Tibbetts, C.A., Luther, B.M., and Krummel, A.T., “**Approaches to Coherent Multidimensional Microspectroscopy**,” an invited book chapter in the edited book entitled, Coherent Multidimensional Spectroscopy, 2019, Springer Nature publishing.
28. Kuhs, C., Luther, B.M., and Krummel, A.T., **Recent Advances in 2D IR Spectroscopy Driven by Advances in Ultrafast Technology**, *IEEE Journal of Special Topics in Quantum Electronics (JSTQE)*, 2019, invited paper, vol. 25, issue 4, pg. 3100313.

27. Tracy, K.M., Guchhait, B., Tibbetts, C.A., Luther, B.M., and Krummel, A.T., **Visualizing Chemical Dynamics in a Room Temperature Ionic Liquid Microdroplet**, *ChemRxiv*, 2019, DOI:10.26434/chemrxiv.9936464.v1.
26. Tracy, K. M., Tibbetts, C.A., Guchhait, B., Luther, B. M., and Krummel, A. T. **Multibench Nonlinear Optical Spectrometer based on a 100 kHz Mid-IR OPCPA Laser Source**, in Proceedings for the 21<sup>st</sup> International Conference on Ultrafast Phenomena, 2018.
25. Green, T., Mattson, M.A., Cyran, J.D., Lake, P., McCullagh, M. and Krummel, A.T., **Elucidating Structural Evolution of Perylene Diimide Aggregates Using 2D IR Spectroscopy & Molecular Dynamics Simulations**, *Journal of Physical Chemistry B*, 2018, v.122(18), pg. 4891-4900.
24. Rich, C. C. Lindberg, K. A. and Krummel, A.T. **Phase Acrobatics: The Influence of Excitonic Resonance and Gold Nonresonant Background on Heterodyne-Detected VSFG Emission**, *Journal of Physical Chemistry Letters*, 2017, v.8(7), pg. 1331-1337.
23. Tracy, K. M., Barich, M. V., Carver, C.\* and Krummel, A.T. **High Throughput 2D IR Spectroscopy Achieved by Interfacing Microfluidic Technology with a High Repetition Rate 2D IR Spectrometer**, *Journal of Physical Chemistry Letters*, 2016, v. 7, pg. 4865-4870.  
\*indicates undergraduate researcher
22. Luther, B. M., Tracy, K. M., and Krummel, A. T. **Demonstrating 100 kHz 2D IR Spectroscopy Using a Mid-IR OPCPA Laser Source**, in Proceedings for the 20<sup>th</sup> International Conference on Ultrafast Phenomena, 2016.
21. Rich, C. C., Mattson, M. A., and Krummel, A.T. **Direct Measurement of the Absolute Orientation of N3 Dye at Gold and Titanium Dioxide Surfaces with Heterodyne-Detected Vibrational SFG Spectroscopy**, *Journal of Physical Chemistry C*, 2016, v. 120, pg. 6601-6611.
20. Luther, B.M., Tracy, K.M., Gerrity, M., Brown, S., and Krummel, A.T. **2D IR Spectroscopy at 100 kHz Utilizing a Mid-IR OPCPA Laser Source**, *Optics Express*, 2016, v. 24(4), pg. 4117-4127.
19. Lehmkuhl, B., Noblitt, S., Krummel, A.T., and Henry, C.S. **Fabrication of IR-Transparent Microfluidic Devices by Anisotropic Etching of Channels in CaF<sub>2</sub>**, *Lab-on-a-Chip*, 2015, **15**, pg. 4364-4368.
18. Cyran, J.D. and Krummel, A.T. **Probing Structural Features of Self-Assembled Violanthrone-79 using Two-Dimensional Infrared Spectroscopy**, *Journal of Chemical Physics*, 2015, **142**, pg. 212435.
17. Cyran, J.D., Nite, J.M., and Krummel, A.T. **Characterizing Anharmonic Vibrational Modes of Quinones with Two Dimensional Infrared Spectroscopy**, *Journal of Physical Chemistry, B*, 2015, 119(29), pg. 8917-8925.
16. Barich, M.V. and Krummel, A.T. **Polymeric Infrared Compatible Microfluidic Devices for Spectrochemical Analysis**, *Analytical Chemistry*, 2013, 85(21), pg. 10000-10003.
15. Nite, J.M., Cyran, J.D., and Krummel, A.T. **Active Bragg Angle Compensation for Shaping Ultrafast Mid-Infrared Pulses**, *Optics Express*, 2012, 20(21), pg. 23912-23920.

#### From previous work

14. Krummel, A. T., Datta, S., Münster, S., and Weitz, D. A. **Visualizing Multiphase Flow and Trapped Fluid Configurations in a Model Three-Dimensional Porous Medium**, *AICHE*, DOI: 10.1002/aic.14005 (2013).
13. Andrews, A.B., McClelland, A., Korkeila, O., Demidov, A., Krummel, A. T., Mullins, O.C., and Chen, Z. **Molecular orientation of asphaltenes and PAH model compounds in Langmuir-Blodgett films using sum frequency generation spectroscopy**, *Langmuir*, 2011, 27(10), pg. 6049-6058.

12. Romanowsky, M.B., Heymann, M., Abate, A.R., Krummel, A. T., Fraden, S., and Weitz, D. A. **Functional patterning of PDMS microfluidic devices using integrated chemo-masks**, *Lab on a Chip*, **10**, 1521-1524 (2010).
11. Shum, H. C., Abate, A.R., Lee, D., Studart, A. R., Wang, B., Chen, C.-H., Thiele, J., Shah, R. K., Krummel, A. T., and Weitz, D. A. **Droplet microfluidics for fabrication of non-spherical particles**, *Macromolecular Rapid Communications*, **31**, 108-118 (2010).
10. Abate, A. R., Lee, D., Holtze, C., Krummel, A.T., Do, T., and Weitz, D. A. **Functionalized glass coating for PDMS microfluidic devices**, in *Lab on a Chip Technology: Fabrication and Microfluidics*, edited by Keith E. Herold and Avraham Rasooly (Caister Academic Press, 2009).
9. Abate, A. R., Krummel, A. T., Lee, D., Marquez, M., Holtze, C., and Weitz, D. A. **Photoreactive Coating for High-Contrast Spatial Patterning of Microfluidic Device Wettability**, *Lab on a Chip*, **8**, 2157-2160 (2008).
8. Krummel, A. T., Zanni, M. T. **Evidence for Coupling Between Nitrile Groups Using DNA Templates: A Promising New Method for Monitoring Structures with Infrared Spectroscopy**, *Journal of Physical Chemistry, B* (2008), **112**, 1336-1338.
7. Krummel, A. T., Zanni, M. T. **Interpreting DNA VCD Spectra Using a Coupling Model from 2D IR Spectroscopy**. *Journal of Physical Chemistry, B* (2006), **110**, 24720-24727.
6. Krummel, A. T., Zanni, M. T. **DNA Vibrational Coupling Revealed with Two-Dimensional Infrared Spectroscopy: Insight into Why Vibrational Spectroscopy is Sensitive to DNA Structure**. *Journal of Physical Chemistry, B* (2006), **110**, 13991-14000.
5. Yu, W., Rusterholtz, K. J., Krummel, A. T., Lehman, N. **Detection of High Levels of Recombination Generated During PCR Amplification of RNA Templates**. *BioTechniques* (2006), 40(4), 499-507.
4. Legette, L., Joyce, M., Krummel, A. T., Franko, E. (2006) **The Citizen Scholar: Exposing a Neglected Responsibility**, a symposium on Public Responsibility and the Role of the Ph.D., Berland, E. (Ed.), National Conference on Graduate Student Leadership Proceedings 2005, St. Louis: Washington University.
3. Fulmer, E. C., Mukherjee, P., Krummel, A. T., Zanni, M. T. **A Pulse Sequence for Directly Measuring the Anharmonicities of Coupled Vibrations: Two-Quantum Two-Dimensional Infrared Spectroscopy**. *Journal of Chemical Physics* (2004), 120(17), 8067-8078.
2. Mukherjee, P., Krummel, A. T., Fulmer, E. C., Kass, I., Arkin, I. T., Zanni, M. T. **Site-Specific Vibrational Dynamics of the CD3 $\zeta$  Membrane Peptide Using Heterodyned Two-Dimensional Infrared Photon Echo Spectroscopy**. *Journal of Chemical Physics* (2004), 120(21), 10215-10224.
1. Krummel, A. T., Mukherjee, P., and Zanni, M. T. **Inter and Intrastrand Vibrational Coupling in DNA Studied with Heterodyned 2D-IR Spectroscopy**. *Journal of Physical Chemistry, B*. (2003), **107**, 9165-9169.

#### **PATENTS & DISCLOSURES (6 issued patents, 5 issued while at CSU, 3 provisionals)**

Krummel, A. T. "Band-Pass Filter," International Patent Application No. PCT/US2017/041944; Issued on July 14, 2020 in Canada (CA3030602C, CA3079834C), September 17, 2020 in Australia (AU2017297505B2), and is expected in U.S. in 2023.

Krummel, A. T. "Device and Methods for Increasing the Solubility of Crystals in Water," International Patent Application No. PCT/US2017/044158; U.S. Patent Application No. 16/320,042 issued May 17, 2022, issued on July 23, 2020 in Australia (AU2017302338A1), and is expected in Canada in 2023.

Barich, M.V., Spears, H.M.\*, and Krummel, A.T. "Method and Device for Enhanced Mixing in a Microfluidic Channel," CSU Tech ID number 15-057; provisional patent filed.

\*indicates undergraduate researcher

Barich, M.V., Spears, H.M.\*, and Krummel, A.T. “Optically Thin Microfluidic Devices,” CSU Tech ID number 13-089; provisional patent filed.

\*indicates undergraduate researcher

Nite, J.M. and Krummel, A.T. “Active Bragg Angle Compensation Pulse-Shaper,” CSU Tech ID number 12-113; provisional patent filed.

### **From previous work**

Abate, A. R., Krummel, A.T., Holtze, C., and Weitz, D.A. “Surfaces, Including Microfluidic Channels, with Controlled Wetting Properties,” US Patent Application No. 12/935,203, PCT No. PCT/US2009/000850.

## **FUNDING & SUPPORT (\$10.1M Research + \$2.3M Support, \$12.4M Total)**

### **Current**

Principal Investigator, “**Probing the Role of Electrolyte Dynamics in Chemical Reactivity Near Electrode Surfaces,**” DOE, BES-Condensed Phase and Interfacial Molecular Sciences, \$760K, 2023-2026.

Co-Principal Investigator, “**CCI Phase 1: NSF Center for Sustainable Photoredox Catalysis,**” NSF, \$1.8M (\$182K for Krummel), 2023-2026.

Faculty Lead, **NSF I-Corps Hub New Partnership Institution Program West Region (IN-W)**, NSF, \$600K, 2023-2026.

Faculty Advisor (OVPR), “**Lab-to-Life (L2L) Program,**” Economic Development Administration (EDA) **Build to Scale**, \$1.6M, 2023-2026.

Principal Investigator, “**Modernizing Laboratory Spaces for Undergraduate Chemistry Courses,**” CSU UFFAB, \$727,644, 2022.

Principal Investigator, “**Instrument Development: Creating a Tunable, Broad Bandwidth 2D IR Microscope for Quantitative Imaging of Chemical Dynamics Near Reactive Surfaces,**” NSF, CHE-Chemical Measurement & Imaging, \$510K, 2021-2024.

Principle Investigator, “**Exploring Anomalous Dynamics in Room Temperature Ionic Liquids using Nonlinear Optical Spectroscopy & Imaging,**” DOD-AFOSR, Molecular Dynamics & Theoretical Chemistry, \$467,488, 2020-2024.

### **Completed**

Principal Investigator, “**2D IR Microscopy—Technology for Visualizing Chemical Dynamics in Heterogeneous Environments,**” DOE, BES-Condensed Phase & Interfacial Molecular Sciences, \$890K, 2016-2022.

Principal Investigator, “**Visualizing Chemical Structures & Dynamics in Functional Devices,**” Monfort Professorship, Colorado State University, \$100K, 2019-2022.

Co-PI, “**Molecular Driving Forces of Peptide Based Biometrics,**” Department of Defense, U.S. Army Research Office, \$145K for Krummel, 2016-2021.

Principal Investigator, “**CAREER: Elucidating Surfactin Modus Operandi with 2D IR Spectroscopy,**” NSF, CHE-Structure, Dynamics, & Mechanisms, \$663K, 2013-2020.

Principal Investigator, “**Preliminary Characterization of Crystal Polymorphs and Asphaltene Aggregation,**” CSU-EnercatUSA Master Service Agreement, co-PIs: J. Neilson & M. McCullagh, \$640K, 2015-2020.

Principal Investigator, “**Striving to Visualize Chemical Dynamics in Heterogeneous Environments,**” Alfred P. Sloan Research Fellowship, Alfred P. Sloan Foundation, \$50K, 2015-2017.

Principal Investigator, “**The Dynamic Reaction Mapping of Enhanced Oil Recovery Techniques using 2D IR,**” BP ExploRe Program, \$5M, 2012-2017.

Principal Investigator, **“Investigating the role of solute-solvent interactions in asphaltene nanoaggregation using 2D IR spectroscopy,”** ACS-PRF, \$100K, 2011-2013.

### INVITED PRESENTATIONS

May 2024 Stanford University, Department Colloquium, Palo Alto, CA  
April 2024 University of Colorado—Boulder, Chemical Physics Colloquium, Boulder, CO  
March 2024 267<sup>th</sup> ACS National Meeting, New Orleans, LA  
August 2023 266<sup>th</sup> ACS National Meeting, San Francisco, CA  
July 2023 Vibrational Dynamics (Organizer), Telluride Science Research Center (TSRC), Telluride, CO  
June 2023 ChemDiCE, TSRC, Telluride, CO  
June 2023 International Conference on Nonlinear Optics at Interfaces, Rome, Italy  
April 2023 MRS Spring Meeting, San Francisco, CA  
March 2023 265<sup>th</sup> ACS National Meeting, Indianapolis, IN  
August 2022 264<sup>th</sup> ACS National Meeting, Chicago, IL  
July 2022 Coherent Multidimensional Spectroscopy Workshop, TSRC, Telluride, CO  
June 2022 10<sup>th</sup> Coherent Multidimensional Spectroscopy Conference, Austin, TX  
April 2022 University of Washington, Seattle, WA  
January 2022 University of Kansas, Lawrence, KS  
December 2021 Pacificchem, Honolulu, HI (three invited talks)  
September 2021 Rice University, Houston, TX  
August 2021 262<sup>nd</sup> ACS National Meeting, Atlanta, GA  
July 2021 Vibrational Dynamics, TSRC, Telluride, CO  
June 2021 Town Talk & “Science Straight Up” podcast, TSRC, Telluride, CO  
June 2021 ChemDiCe, TSRC, Telluride, CO  
June 2021 XX<sup>th</sup> Intern’l Conference on Time-Resolved Vibrational Spectroscopy, Ann Arbor, MI  
June 2021 16<sup>th</sup> Annual Chautauqua School on Nonlinear Optics, West Lafayette, IN (Keynote Speaker)  
May 2021 Gordon Research Conference on Chemical Imaging, Manchester, NH (Postponed, COVID-19)  
March 2021 SPIE Photonics West, San Francisco, CA  
November 2020 University of California—Los Angeles, Los Angeles, CA  
June 2020 Telluride Science Research Center, Telluride, CO  
February 2020 SUNY Stony Brook, Stony Brook, NY  
February 2020 Boston University, Boston, MA  
September 2019 XIX<sup>th</sup> Intern’l Conference on Time-Resolved Vibrational Spectroscopy, Auckland, NZ  
August 2019 258<sup>th</sup> ACS National Meeting, San Diego, CA  
July 2019 10<sup>th</sup> Intern’l Conference on Advanced Vibrational Spectroscopy, Auckland, NZ  
June 2019 Telluride Science Research Center, Telluride, CO  
December 2018 Center for Chemical Innovations Workshop, Rice University  
November 2018 Santa Clara University  
November 2018 San Jose State University  
November 2018 Coherent Multidimensional Spectroscopy in Materials Science, American Chemical Society Southwest Regional Meeting, Little Rock, AR  
September 2018 Rice University  
August 2018 Gordon Research Conference on Vibrational Spectroscopy  
July 2018 Coherent Multidimensional Spectroscopy, TSRC, Telluride, CO  
June 2018 International Conference on Coherent Multidimensional Spectroscopy, Seoul, South Korea  
July 2017 ChemDiCE, TSRC, Telluride, CO  
June 2017 9<sup>th</sup> Intern’l Conference on Advanced Vibrational Spectroscopy, Victoria, Canada  
April 2017 253<sup>rd</sup> ACS National Meeting, San Francisco, CA  
March 2017 Pittcon, Chicago, IL  
January 2017 64<sup>th</sup> Pacific Conference on Spectroscopy & Dynamics, Pacific Grove, CA  
January 2017 Portland State University

September 2016 University of Pennsylvania  
August 2016 Gordon Research Conference on Water & Aqueous Solutions, Holderness, NH  
June 2016 Electronic Structure at Interfaces, TSRC, Telluride, CO  
June 2016 DOE Workshop, NREL, Golden, CO  
June 2016 Southwest Ultrafast Conference, Austin, TX  
April 2016 University of Rochester  
April 2016 Stanford University  
March 2016 University of California at San Diego  
March 2016 University of Illinois at Urbana-Champaign  
February 2016 Georgia Tech  
February 2016 Emory University  
January 2016 Ohio State University  
December 2015 Pacifichem, Honolulu, Hawaii  
December 2015 University of California—Irvine  
November 2015 University of Southern California  
November 2015 University of Kansas  
October 2015 Portland State University  
June 2015 XVIIth Intern'l Conference on Time-Resolved Vibrational Spectroscopy, Madison, WI  
April 2015 University of Wisconsin—Madison  
April 2015 Purdue University  
March 2014 Wilhelm und Else Heraeus-Stiftung Seminar on “Wetting of Structures with Complex Geometries.”  
Physikzentrum Bad Honnef, Germany  
March 2014 American Physical Society National Meeting, Denver, CO  
January 2014 University of Colorado—Boulder  
September 2013 246th ACS National Meeting, Indianapolis, Indiana  
November 2012 Physics of Natural Reservoirs Wksp, Centre de Recherche Paul Pascal, Bordeaux, France  
July 2012 Vibrational Dynamics, TSRC, Telluride, CO  
August 2011 242nd ACS National Meeting, Denver, CO  
April 2011 Geilo School on “Cooperative Phenomena in Flows,” Norway  
October 2010 Fort Lewis College, Dept. of Chemistry, Durango, CO  
October 2010 Creighton University, Omaha, NE  
August 2010 Physics Colloquium at Colorado State University, Fort Collins, CO

### **From previous work**

January 2010 University of Southern California  
January 2010 Georgia Institute of Technology  
January 2010 Columbia University  
January 2010 University of Chicago  
December 2009 Yale University  
December 2009 Johns Hopkins University  
December 2009 University of Notre Dame  
December 2009 University of South Carolina  
December 2009 University of Vermont  
December 2009 Colorado State University  
December 2009 Georgetown University  
November 2009 University of Pittsburgh  
June 2009 The Tata Institute for Fundamental Research, Mumbai, India

### **CONTRIBUTED PRESENTATIONS**

August 2019 258<sup>th</sup> ACS National Meeting, San Diego, CA

July 2018 21<sup>st</sup> International Conference on Ultrafast Phenomena, Hamburg, Germany  
July 2016 Intern'l Conference on Coherent Multidimensional Spectroscopy, Gröningen, Netherlands  
August 2015 250<sup>th</sup> ACS National Meeting, Boston, MA  
July 2014 Intern'l Conference on Coherent Multidimensional Spectroscopy, Eugene, OR

## RESEARCH SUPERVISED

### Students and Postdoctoral Fellows Currently Supervised:

Luke Guerrieri (G)	Rochelle LaForest (G)
Sarah Hall (G)	Dr. Kallol Mukherjee (P)
Rachelle Austin (G)	Audrey Urbanski (U)
Agustin Pineda (G)	Carsten Mueller (HS)
Devin Williams (G)	

P= Postdoctoral Fellow / G=Graduate Student / U=Undergraduate Researcher / HS=High School

### Former Postdoctoral Fellows:

Dr. Christopher Rich (Postdoctoral Fellow, Tenure Track Chemistry Lecturer, Binghamton University)  
Dr. Thomas Green (Postdoctoral Fellow, Visiting Assistant Professor, Bucknell University)  
Dr. Biswajit Guchhait (Postdoctoral Fellow, Assistant Professor, Shiv Nadar University, India)

### Former Graduate Students:

Jennifer Blaser (M.S. graduate, RFI Ingredients, Loveland, CO)  
Dr. Jenée Cyran (Ph.D. graduate, Assistant Professor, Boise State University)  
Dr. Michael Barich (Ph.D. graduate, SomaLogic, Longmont, CO)  
Maria Phillips (M.S. graduate, ams OSRAM, Minneapolis, MN)  
Katie Lindberg (M.S. graduate, Cactus Communications, Houston, TX)  
Dr. Kathryn Tracy (Ph.D. graduate, ASML, Stamford, CT)  
Dr. Christopher Kuhs (Ph.D. graduate, U.S. Army DEVCOM Army Research Laboratory, Houston, TX)  
Dr. Max Mattson (Ph.D. graduate, Parker Hannifin, Evanston, IL)  
Autumn Wyatt (M.S. graduate, KM Labs, Boulder, CO)  
Dr. Yusef Farah (Ph.D. graduate, postdoctoral fellow at CSU)  
Dr. Clara Tibbetts (Ph.D graduate, Optica/SPIE/AAAS Congressional Science & Technology Policy Fellow)

### Former Undergraduate Research Students:

Dakota Lorenz (currently a graduate student in Chemistry at CSU)  
Heidi Spears (currently a graduate student in Chemistry at the University of Washington)  
Robert Weakly (Ph.D. in Chemistry at the University of Washington, Optical Engineer at Lockheed Martin)  
Killian O'Connell  
Jonah Phillipi (REU student, graduate student at Tulane University, Cybersecurity Management)  
Christina Carver (Software Engineer II, KBI Biopharma)  
Clifford Allington (currently a graduate student in Chemistry at MIT, NDSEG Fellow)  
Daniel Scherer (Mechanical Design Engineer, SpaceX)  
Sheridon Kelly (currently a graduate student in Chemistry at UC-Berkeley)

## COLLABORATORS (past 48 months)

Dr. Steven Corcelli (Department of Chemistry & Biochemistry, University of Notre Dame), Dr. Amy Prieto (Department of Chemistry, Colorado State University), Dr. Martin McCullagh (Department of Chemistry, Oklahoma State University), Dr. Justin Sambur (Department of Chemistry, Colorado State University), Dr. Andres Montoya-Castillo (Department of Chemistry, University of Colorado—Boulder) Dr. Sterling Backus (Thorlabs, Boulder, CO).



## SERVICE

### **Departmental Service:**

Associate Chair of Operations (January 2020-present)  
Tenure Track Faculty Search Committee (2023)  
Department Services & Space Committee (2016-2018 member, 2019-2020 chair)  
Student Awards Committee (2016-2019 co-chair)  
Faculty Awards Committee (2017-2018 member)  
Graduate Operations Committee (2017-2018 member)  
Graduate Recruiting Committee (2010-2014 member, 2014 co-chair, 2014-2016 chair)  
Industrial Recruiting Committee (2010-2013 member)  
Physical Chemistry Seminar Coordinator (2010-2014)  
Faculty Search Committee (2012-2013, 2014-2015, 2015-2016, 2017-2018)  
Chemical Biology Science Advisory Board (2011-2015)

### **Graduate Committees:**

*Chemistry (note: those listed are only those for which I was not the major Advisor. All are Ph.D. students unless otherwise noted.)*

#### ***Current***

Chris Gale (2018-present)  
Kelly Nieto (2018-present)  
Dakota Lorenz (2018-Present)  
Dani Lustig (2018-Present)

#### ***Past***

Samantha Miller (2017-2022, Ph.D.)	John Gann (2018-2020, M.S.)
Michael Van Erdewyk (2017-2022, Ph.D.)	Eric Lopez (2015-2017, M.S.)
Lucas Quintana (2018-2022, M.S.)	Andrew Martinolich (2014-2018)
Mortaza Derakhshani Molayousefi (2014-2021, Ph.D.)	Eve Mozur (2015-2020)
Kelly Du Pont (2015-2021, Ph.D.)	Blaine McCarthy (2018-2020)
Julie Holder (2014-2019, M.S.)	Erin Stuckert (2011-2017)
Kathleen Berg (2014-2019)	Mark Hofelder (2011-2013, M.S.)
Joshua Blechle (2010-2016)	Jessica Joslin (2010-2014)
Katherine Boehle (2014-2018)	Brynson Lehmkuhl (2012-2014, M.S.)
Chase Gerold (2013-2018)	Guan Qian (2011-2012)
Michael Cuddy (2010-2012)	

#### ***External Committees***

Daniel Z. Shaw (Ph.D. student, Physics, CSU)  
Byron Fritch (Ph.D. student, Physics, CSU)  
Rachel Neville (Ph.D. student, Mathematics, CSU)  
Dr. Scott Domingue (Ph.D., Electrical & Computer Engineering, CSU)  
Shannon Woods (M.S. student, Physics, CSU)  
Matthew Williams (Ph.D. student, Physics, CSU)

#### **University Service:**

University Committee for Innovation Strategy (2022-present)  
OVP—CSU Strata Liaison Committee (2022-present)  
Faculty Search Committee in Physics (2018-2019)  
Center for Women's Studies & Gender Research (2010-present Affiliate Faculty member, 2011-2014 Board member)

Faculty Search Committee in Mechanical Engineering (2013-2014)

**External Service:**

Guest Editor, Journal of Chemical Physics Special Issue on Chemical Imaging, 2020-Present

Guest Editor, Journal of Chemical Physics Special Issue: Celebrating 25 Years of 2D IR Spectroscopy, 2022-Present

Editorial Advisory Board, Journal of Chemical Physics, 2023-Present

Editorial Advisory Board, The Journal of Physical Chemistry, 2018-2022

Optical Society of America, Ultrafast Phenomena 2022-present, Program Chair

American Chemical Society, Secretary/Treasurer, Physical Division, 2022-Present

American Chemical Society, Member-At-Large, Physical Division, 2018-2021

Optical Society of America, Ultrafast Phenomena 2018-present, Technical Program Committee Member

Committee of Visitors, Department of Energy, Basic Energy Science, 2017

American Chemical Society, National Meeting Symposia organizer, 2015 & 2017 for the Division of Physical Chemistry

American Physical Society, National Meeting Symposia organizer, 2012 & 2014 for the Division of Chemical Physics

**Reviewer for:**

*Journals*

Analytical Chemistry

Biophysical Journal

Chemical Science

Journal of the American Chemical Society

Journal of Chemical Physics

Journal of Physical Chemistry B

Journal of Physical Chemistry C

Journal of Physical Chemistry Letters

Physical Chemistry Chemical Physics

Structure & Dynamics

Langmuir

Energy & Fuels

Lab-on-a-Chip

ACS Journal of Applied Materials & Interfaces

Nature Communications

Optics Express

Optics Letters

Proceedings of the National Academy of Sciences

Science Advances

*Funding Agencies*

Dutch Research Council, NWO

Department of Defense

National Science Foundation (Panel Reviewer and Ad Hoc Reviewer)

National Science Foundation—Graduate Research Fellowship Program

ACS Petroleum Research Foundation

Department of Energy

**TEACHING**

CHEM 120 Foundations in Modern Chemistry (4 Credits, F2020, 4 Credits, F2022, 4 Credits F2023)

CHEM 775 Pillars of Physical Chemistry (1 Credit, S2020, S2021)

CHEM 573A Molecular Spectroscopy: Light-Matter Interactions (1 Credit, S2017, S2019, S2020, S2021, S2023)

CHEM 573B Molecular Spectroscopy: Electric Fields in Practice (1 Credit, S2017, S2019, S2020, S2021, S2023)

CHEM 573C Molecular Spectroscopy: Condensed Phase Spectroscopy (1 Credit, S2018)

CHEM 474 Physical Chemistry I (3 Credits, F2016, F2017, F2018)

CHEM 793 Physical Chemistry Seminar (1 Credit, F2017)

CHEM 571 Quantum Chemistry (3 Credits, F2010, F2011, F2012)

CHEM 773 Atomic & Molecular Spectroscopy (3 Credits, S2012, S2014)

CHEM 480A1 Problem Solving in Physical Chemistry (1 Credit, F2012)

CHEM 111 General Chemistry I (4 Credits, S2013)

CHEM 111 General Chemistry I (4 Credits, Majors' section, F2014, F2015)

**REFERENCES:** Provided upon request.