

Connor G. Bischak

(He/His)

Assistant Professor
Department of Chemistry, University of Utah
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Professional Experience

- 2021-Present **Assistant Professor of Chemistry, Salt Lake City, UT**
Department of Chemistry
University of Utah
- 2018-2021 **Washington Research Foundation Postdoctoral Fellow, University of Washington, Seattle, WA**
Research Advisor: Prof. David Ginger
- 2017-2018 **Transitional Postdoctoral Fellow, University of California Berkeley, Berkeley, CA**
Research Advisor: Prof. Naomi Ginsberg
- 2010-2011 **Fulbright Research Fellow, Ruhr University Bochum, Bochum, Germany**
Research Advisor: Prof. Martina Havenith

Education

- 2011- 2017 **Ph.D., Physical Chemistry**, University of California Berkeley, Berkeley, CA
Research Advisor: Prof. Naomi Ginsberg
Dissertation Title: *Elucidating Heterogeneities and Dynamic Processes at the Nanoscale with Cathodoluminescence and Cathodoluminescence-Activated Microscopies*
- 2006-2010 **B.S., Chemistry**, Haverford College, Haverford PA
Research Advisors: Prof. Casey Londergan, Prof. Joshua Schrier
Minor in German and German Studies
Magna Cum Laude with High Honors
ACS Certified Degree
Thesis Title: *Using Cyanylated Cysteine as a Site-Specific Infrared Probe to Elucidate Dynamic Protein Structure*

Distinctions

- 2024 **Scialog: Automating Chemical Laboratories Fellow**
- 2023 **2023 ORAU Ralph E. Powe Junior Faculty Enhancement Award**
- 2022 **Dreyfus Foundation 2022 Machine Learning in the Chemical Sciences and Engineering Award**
- 2022 **ACS Petroleum Research Fund Doctoral New Investigator**
- 2021 **ACS PMSE Future Faculty Scholar**
- 2021 **Cottrell Postdoctoral Fellowship**
- 2020 **ACS PHYS Young Investigator Award**
- 2019-2021 **Momental Research Fellow**

2019	Office of Postdoctoral Affairs Travel Award
2018-2021	Washington Research Foundation Postdoctoral Fellowship
2017	Edmund Optics Educational Award Finalist
2011-2016	NSF Graduate Research Fellowship
2010-2011	Fulbright Research Fellow
2010	American Institute of Chemists Student Award

Publications

Published (* denotes equal contribution):

*Independent Work (# - graduate student, * - undergraduate student)*

27. Jackson, S. R.,[#] Kingsford, R. L.,[#] Collins, G. W.,[#] **Bischak, C. G.** Crystallinity Determines Ion Injection Kinetics and Local Ion Density in Organic Mixed Conductors. *Chem. Mater.* 2023. 35, 5392-5400.
26. Kingsford, R. L.,[#] Jackson, S. R.,[#] Bloxham, L. C.,* **Bischak, C. G.** Controlling Phase Transitions in 2D Perovskites through Organic Cation Alloying. *J. Am. Chem. Soc.* 2023. 145, 21, 11773-11780.

Postdoctoral Work:

24. Guo, J., Chem, S. E., Giridharagopal, R., Bischak, C. G., Onorato, J. W., Yan, K., Shen, Z., Li, C.-Z., Luscombe, C. K., Ginger, D. S. Why accumulation mode organic electrochemical transistors turn off much faster than they turn on. Submitted. <https://arxiv.org/abs/2305.01179>
24. Han, Y, Wang, J., **Bischak, C. G.** Kim, S., Lee, K., Shin, D., Lee, M. J., Ginger, D. S., Hwang, I. Significance of Ambient Temperature Control for Highly Reproducible Layered Perovskite Light-Emitting Diodes. *ACS Photonics.* 2020, 7, 2489-2497.
23. **Bischak, C. G.**, Flagg, L. Q., Ginger, D. S. Ion exchange gels enhance organic electrochemical transistor performance in aqueous solution. *Adv. Mater.* 2020, 2002610.
22. **Bischak, C. G.**, Flagg, L. Q., Yan, K., Rehman, T., Davies, D. W., Quezada, R. J., Onorato, J. W., Luscombe, C. K., Diao, Y., Li, C.-Z., Ginger, D. S. A reversible structural phase transition by electrochemical ion injection into a conjugated polymer. *J. Am. Chem. Soc.* 2020, 142, 7434-7442.
21. Flagg, L. Q., **Bischak, C. G.**, Quezada, R. J., Onorato, J. W., Luscombe, C. K., Ginger, D. S. P-Type Electrochemical Doping Can Occur by Cation Expulsion in a High Performing Polymer for Organic Electrochemical Transistors. *ACS Mater. Lett.* 2020, 2, 254-260.
20. Han, Y., Park, S., Wang, J., Jariwala, S., Lee, K., **Bischak, C. G.**, Kim, S., Lee, M., Ginger, D. S., Hwang, I. Controlling Spatial Crystallization Uniformity and Phase Orientation of Quasi-2D Perovskite-based Light-Emitting Diodes using Lewis Bases. *Adv. Mater. Interfaces,* 2020, 7, 1901860.
19. **Bischak, C. G.**, Flagg, L. Q., Yan, K., Li, C. Z., Ginger, D. S. Fullerene Active Layers for N-type Organic Electrochemical Transistors. *ACS Appl. Mater. Interfaces,* 2019, 11, 28138-28144.
18. Flagg, L. Q.,* **Bischak, C. G.**,* Onorato, J. W., Rashid, R. B., Luscombe, C. K., Ginger, D. S. Polymer Crystallinity Controls Water Uptake in Glycol Side Chain Polymer Organic Electrochemical Transistors. *JACS,* 2019, 141, 4345-4354.

Graduate Work:

17. **Bischak, C. G.**, Raybin, J. G., Kruppe, J. W., Ginsberg, N. S. Charging driven coarsening and melting of an initially static colloidal monolayer at an ionic liquid-vacuum interface. *Soft Matter.* 2020, 16, 9578-9589.

16. **Bischak, C. G.**,* Lai, M.,* Fan, Z.,* Lu, D., David, P., Dong, D., Chen, H., Etman, A. S., Lei, T., Sun, J., Grünwald, M., Limmer, D. T., Yang, P., Ginsberg, N. S. Liquid-Like Interfaces Mediate Structural Phase Transitions in Lead Halide Perovskites. *Matter*. 2020, 3, 534-545.
Editors' Favorite Matter Papers of 2020
15. Wai, R. B., Ramesh, N., Aiello, C. D., Raybin, J. G., Zeltmann, S. E., **Bischak, C. G.**, Barnard, E., Aloni, S., Ogletree, D. F., Minor, A. M., Ginsberg, N. S. Resolving Enhanced Mn²⁺ Luminescence at the Surface of CsPbCl₃ with Time-Resolved Cathodoluminescence. *J. Phys. Chem. A*. 2020, 11, 2624-2629.
14. Lai, M., Obliger, A., Lu, D., Kley, C. S., **Bischak, C. G.**, Kong, Q., Lei, T., Dou, L., Ginsberg, N. S., Limmer, D. T., Yang, P. Intrinsic anion diffusivity in lead halide perovskites is facilitated by a soft lattice. *PNAS*, 2018, 115, 11929-11934.
13. Kong, Q., Lee, W., Lai, M., **Bischak, C. G.**, Gao, G., Wong, A. B., Lei, T., Yu, Y., Wang, L., Ginsberg, N. S., Yang, P. Phase transition induced p-n junction in single halide perovskite nanowire. *PNAS*, 2018, 115, 8889-8894.
12. **Bischak, C. G.**,* Wong, A. B.,* Lin, E., Limmer, D. T., Yang, P., Ginsberg, N. S. Tunable polaron distortions control the extent of halide demixing in lead halide perovskites. *J. Phys. Chem. Lett.*, 2018, 9, 3998-4005.
11. **Bischak, C. G.**, Wai, R.B., Cherqui, C., Busche, J.A., Quillin, S.C., Hetherington, C. L., Wang, Z., Aiello, C.D., Schlom, Aloni, S., D. M., Ogletree, D. F., Masiello, D. J., Ginsberg, N. S. Non-invasive cathodoluminescence-activated nano-imaging of dynamic processes in liquids. *ACS Nano*, 2017, 11, 10583-10590.
10. Dou, L., Lai, M., Kley, C. S., Y. Yang, **Bischak, C. G.**, Zhang, D., Eaton, S. W., Ginsberg, N. S., Yang, P. Spatially resolved multi-color CsPbX₃ nanowire heterojunctions via anion exchange. *PNAS*, 2017, 114, 7216-7221.
9. **Bischak, C. G.**, Hetherington, C. L., Wu, H. Aloni, S., Ogletree, D. F., Limmer, D. T., Ginsberg, N. S. Origin of reversible photo-induced phase separation in hybrid perovskites. *Nano Letters*, 2017, 17, 1028-1033.
8. Lai, M., Kong, Q., **Bischak, C. G.**, Yu, Y., Dou, L., Eaton, S. W., Ginsberg, N. S., Yang, P. Structural, optical, and electrical study of phase controlled cesium lead iodide nanowires. *Nano Research*, 2017, 1-8.
7. Dou, L., Wong, A. B., Yu, Y., Kornienko, N., Eaton, S. W., Fu, A., **Bischak, C. G.**, Ding, T., Lai, M., Peng, H., Ginsberg, N. S., Wang, L. W., Alivisatos, A. P., Yang, P. Atomically thin two-dimensional organic-inorganic hybrid perovskites. *Science*, 2015, 349, 1518-1521.
6. **Bischak, C. G.**, Sanehira, E., Precht, J. T., Luther, J. M., Ginsberg, N. S. Heterogeneous charge carrier dynamics in organic-inorganic hybrid materials: nanoscale lateral and depth-dependent variation of recombination rates in methylammonium lead halide perovskite thin films. *Nano Letters*, 2015, 15, 4799-4807.
5. **Bischak, C. G.**, Hetherington, C. L., Wang, Z., Precht, J. T., Kaz, D.M., Schlom, D. G., Ginsberg, N. S. Cathodoluminescence-activated nano-imaging: Non-invasive near-field scanning optical microscopy in an electron microscope. *Nano Letters*, 2015, 15, 3383-3390.
4. Kaz, D. M., **Bischak, C. G.**, Hetherington, C. L. Howard, H. H., Marti, X., Clarkson, J. D., Adamo, C., Schlom, D. G., Ramesh, R., Aloni, S., Ogletree, D. F., Ginsberg, N. S. Bright cathodoluminescent thin films for scanning nano-optical excitation and imaging. *ACS Nano*, 2013, 7, 10397-10404.

Prior to Graduate School:

3. Xu, Y., Baumer, A., Meister, K., **Bischak, C. G.**, DeVries, A. L., Leitner, D. M., Havenith, M. Protein-water dynamics in anti-freeze protein III activity. *Chemical Physics Letters*, 2016, 647, 1-6.
2. Londergan, C. H., Baskin, R., **Bischak, C. G.**, Hoffman, K. W., Snead, D. M., Reynoso, C. Dynamic asymmetry and the role of the conserved active site thiol in rabbit muscle creatine kinase. 2014, *Biochemistry*, 2015, 54, 83-95.
1. **Bischak, C. G.**, Longhi, S., Snead, D. M., Costanzo, S., Terrer, E., Londergan, C. H. Probing structural transitions in the intrinsically disordered C-terminal domain of the measles virus nucleoprotein by vibrational spectroscopy of cyanylated cysteines. *Biophysical Journal*, 2010, 99, 1676-1683.

Patents

N. S. Ginsberg, **C. G. Bischak**, C. L. Hetherington, D. M. Kaz. "Cathodoluminescence-Activated Nanoscale Imaging," U.S. Patent Application 20180080885 published on March 8, 2018.

Presentations

Invited Presentations:

American Chemical Society Spring 2024 Meeting & Expo. "Mapping Local Ion Concentrations in Organic Mixed Conductors" New Orleans, LA, 3/2024. (Upcoming)

Utah State University Department of Chemistry Seminar. "Mapping and Controlling Dynamic Processes in Organic and Hybrid Semiconductors" Los Angeles, CA, 2/2024.

University of Southern California Department of Chemistry Seminar. "Mapping and Controlling Dynamic Processes in Organic and Hybrid Semiconductors" Los Angeles, CA, 1/2024.

Texas Tech University Department of Chemistry Seminar. "Mapping and Controlling Dynamic Processes in Organic and Hybrid Semiconductors" Lubbock, TX, 10/2023.

SPIE Optics + Photonics 2023 Meeting "Controlling Phase Transitions in 2D Perovskites with Cation Alloying" San Diego, CA, 9/2023.

2023 Materials Research Society Spring Meeting "Mixing and Matching Organic Cations in 2D Perovskites" San Francisco, CA, 4/2023.

American Chemical Society Spring 2022 Meeting & Expo. "Optimizing Ion Injection Kinetics in Conjugated Polymers by Tuning Crystallinity" Indianapolis, IN, 3/2023.

Gustavus Adolphus College, Invited Seminar "Interrogating Dynamic Processes in Emerging Semiconductor Materials" Saint Peter, MN. 12/2022.

Idaho State University, Invited Seminar "Mapping and Controlling Dynamic Processes in Emerging Semiconductor Materials" Pocatello, ID. 10/2022.

2022 NanoScientific Symposium Americas Scanning Probe Microscopy "Mapping Dynamic Processes in Energy Materials with Photoinduced Force Microscopy (PiFM)" Virtual. 9/2022.

Telluride Science Research Center Workshop: Electronic and Structural Dynamics in Hybrid Perovskites: Theory Meets Experiment. "Imaging Structural Transformations in Hybrid Perovskites" Telluride, CO. 7/2022.

American Chemical Society Spring 2022 Virtual Meeting & Expo “Using Side Chain Chemistry to Tune Structural Changes Upon Ion Insertion in Conjugated Polymers” San Diego, CA. 3/2022 (**ACS PMSE Future Faculty Symposium Talk**)

Pacific Lutheran University, Invited Seminar “Materials in Motion: Nanoscale Movie Making of Dynamic Processes” Virtual. 11/2021.

University of California, Berkeley Faculty Candidate Seminar “Materials in Motion: Structural Phase Transitions in Energy Materials” Virtual. 1/2021.

Northwestern University Rising Stars in Nano “Materials in Motion: Structural Phase Transitions in Energy Materials” Virtual. 1/2021.

University of Utah Faculty Candidate Seminar “Materials in Motion: Structural Phase Transitions in Energy Materials” Virtual. 1/2021.

University of Texas at Austin Faculty Candidate Seminar “Materials in Motion: Structural Phase Transitions in Energy Materials” Virtual. 12/2020.

University of Washington Faculty Candidate Seminar “Materials in Motion: Structural Phase Transitions in Energy Materials” Virtual. 12/2020.

American Chemical Society Virtual Postdoc Symposium “Electrochemically-driven structural phase transitions in conjugated polymers” Virtual, 11/2020

American Chemical Society Fall 2020 Virtual Meeting & Expo “Electrochemically-driven structural phase transitions in conjugated polymers” Virtual, 8/2020 (**ACS PHYS Young Investigator Award Talk**) (<https://www.youtube.com/watch?v=-oSQO-WAaSc&t=0s>)

University of Chicago Special Seminar “From Solar Cells to Bioelectronics: The Interplay Between Electron and Ion Transport in Soft Semiconducting Materials” Chicago, IL, 1/2020.

Gaballe Laboratory for Advanced Materials Special Seminar “Coupled ionic-electronic-structural dynamics in organic mixed ionic/electronic conductors” Stanford, CA, 10/2019

Advanced Light Source 2018 User Meeting “Observing dynamic processes with cathodoluminescence-activated imaging” Berkeley, CA, 10/2018

American Physical Society March Meeting 2017 “Carrier, ion, and phonon mediated phase transitions in mixed halide perovskite nanostructures via low-exposure cathodoluminescence imaging” New Orleans, LA, 3/2017

252nd National Meeting and Exposition of the ACS “Elucidating the nanoscale dynamics of photo-induced phase separation in mixed halide hybrid perovskites” Philadelphia, PA, 8/2016

249th National Meeting and Exposition of the ACS “Cathodoluminescence-Activated Nano-Imaging by Resonant Energy Transfer” Denver, CO, 3/2015

Contributed Presentations:

American Chemical Society Spring 2024 Meeting & Expo. “Mapping Structural Transformations in Two-Dimensional Perovskites” New Orleans, LA, 3/2024. (Upcoming)

2023 Materials Research Society Fall Meeting “Using Photoluminescence Spectroscopy to Map Initial Ion Injection in Organic Mixed Conductors” Boston, MA, 11/2023.

2023 Materials Research Society Fall Meeting “Mapping Structural Transformations in Two-Dimensional Perovskites” Boston, MA, 11/2023.

2023 International Symposium on Functional π -Electron Systems “Mapping Ions and Polarons in Organic Mixed Conductors” Raleigh, NC, 6/2023.

2023 Materials Research Society Spring Meeting “Connecting Nanoscale Heterogeneity and Bulk Performance in Organic Mixed Conductors for Bioelectronics” San Francisco, CA, 4/2023.

American Chemical Society Spring 2023 Meeting & Expo. “Tracking the initial steps of electrochemical doping of organic mixed ionic-electronic conductor (OMIECs) with photoluminescence quenching” Indianapolis, IN, 3/2023.

American Chemical Society Fall 2022 Meeting & Expo. “Probing and controlling structural phase transitions in 2D Ruddlesden-Popper perovskites” Chicago, IL, 8/2022.

American Chemical Society Fall 2022 Meeting & Expo. “Intrinsic hysteresis in electrochemical doping and dedoping of organic mixed ionic-electronic conductor conjugated polymers” Chicago, IL, 8/2022.

American Chemical Society Fall 2021 Virtual Meeting & Expo “Side chain chemistry determines the structural dynamics of conjugated polymer mixed ionic-electronic conductors upon electrochemically-driven ion insertion” Virtual, 8/2021

2021 Materials Research Society Spring Meeting “Structural Transformations in Conjugated Polymers Upon Electrochemical Doping from Aqueous Electrolytes” Virtual, 4/2021

Super Polymer Science Group (Seattle, WA) “Ion Injection and Transport in Conjugated Polymers” Seattle, WA, 6/2019

2016 Kavli Energy Nanoscience Institute Workshop on Emerging Perovskite Materials “Elucidating the nanoscale dynamics of photo-induced phase separation in mixed halide hybrid perovskites” Berkeley, CA, 4/2016

2016 Materials Research Society Spring Meeting “Imaging Nanoscale Heterogeneity and Dynamic Processes in Organic-Inorganic Lead Halide Perovskite Thin Films with Cathodoluminescence Microscopy” Phoenix, AZ, 3/2016

2016 Materials Research Society Spring Meeting “Cathodoluminescence-Activated Imaging by Resonance Energy Transfer (CLAIRE): Using Ultra-Thin Films of Cerium-Doped Yttrium Aluminum Perovskite for Nanoscale Imaging” Phoenix, AZ, 3/2016

59th Annual Meeting of the Biophysical Society “Super Resolution Microscopy by Cathodoluminescence-Activated Excitation” Baltimore, MD, 2/2015

Posters:

Gordon Conference: Unconventional Semiconductors and Their Applications “Mapping and Controlling Phase Transitions in 2D Perovskites” Ventura, CA, 6/2022.

2019 Materials Research Society Fall Meeting “Electrochemically-Driven Structural Phase Transitions in Conjugated Polymers” Boston, MA, 12/2019

Advanced Light Source 2019 User Meeting “Electrochemically-Driven Structural Phase Transitions in Conjugated Polymers” Berkeley, CA, 10/2019

Asilomar Bioelectronics Symposium 2018 “Side-Chain and Counterion Dependence on Organic Electrochemical Transistor Performance” Pacific Grove, CA, 9/2018

Molecular Foundry 2017 Annual Users’ Meeting “Investigating nanoscale dynamics using cathodoluminescence microscopy” Berkeley, CA, 8/2017

Gordon Conference on Nanomaterials for Applications in Energy Technology “Elucidating dynamic processes in hybrid perovskites at the nanoscale” Ventura Beach, CA, 2/2017

Gordon Seminar on Nanomaterials for Applications in Energy Technology “Elucidating dynamic processes in hybrid perovskites at the nanoscale” Ventura Beach, CA, 2/2017

Science and Technology Center on Real-Time Functional Imaging (STROBE) NSF Center Retreat “Investigating nanoscale dynamics using cathodoluminescence microscopy” Berkeley, CA, 1/2017

Molecular Foundry 2016 Annual Users’ Meeting “Investigating nanoscale dynamics using cathodoluminescence microscopy” Berkeley, CA, 8/2016

Molecular Foundry 2015 Annual Users’ Meeting “Nanoscale optical properties of organic-inorganic hybrid materials: cathodoluminescence imaging of $\text{CH}_3\text{NH}_3\text{PbI}_3$ thin films” Berkeley, CA, 8/2015

Kavli Energy Nanoscience Institute Inaugural Symposium “Cathodoluminescence-activated nano-imaging: Non-invasive near-field scanning optical microscopy with no moving parts” Berkeley, CA, 1/2015

Molecular Foundry 2014 Annual Users’ Meeting “Non-Invasive Cathodoluminescence-Activated Imaging by Resonance Energy Transfer” Berkeley, CA, 8/2014

58th Annual Meeting of the Biophysical Society “Cathodoluminescence-Activated Imaging by Resonant Energy Transfer: A New Approach to Imaging Nanoscale Aqueous Biodynamics” San Francisco, CA, 2/2014

2013 Materials Research Society Spring Meeting “Near-field Cathodoluminescence Microscopy of Nano-scale Aqueous Biodynamics Using Thin Films of Cerium-doped Yttrium Aluminum Perovskite” San Francisco, CA, 4/2013

54th Annual Meeting of the Biophysical Society “Using Cyanylated Cysteine as a Site-Specific IR Probe to Characterize a Disorder-To-Order Transition of the Intrinsically Disordered C-terminal Domain of the Measles Virus” San Francisco, CA, 2/2010

238th National Meeting & Exposition of the ACS “Thiocyanate as a Site-specific Infrared Probe Indicating Asymmetry in Rabbit Muscle Creatine Kinase and Hydrophobic Contacts in Measles Virus N_{TAIL} ” Washington DC, 8/2009

23rd Annual Symposium of the Protein Society “Thiocyanate as a Site-specific Infrared Probe Indicating Asymmetry in Rabbit Muscle Creatine Kinase and Hydrophobic Contacts in Measles Virus N_{TAIL} ” Boston, MA, 7/2009

Service

University of Utah Service:

- ACCESS Scholar Supervisor (2024)
- Undergraduate Research Opportunity Program (UROP) Reviewer (2023-2024)
- Summer Program for Undergraduate Research (SPUR) Mentor (Summer 2023, 2024)
- University Teaching Assistantship Reviewer (2023)
- Seminar Committee (2022-2024)
- Faculty Search Committee (2022-2023, 2023-2024)
- Graduate Recruiting Committee (2021-2024)
- Graduate Admissions Committee (2021-2024)

External Service:

- Lowering Activation Barriers in Physical Chemistry (LAB-SIP) Workshop (2023)
- Washington Research Fund David Galas Prize Selection Committee (2022)
- ACS Petroleum Research Fund Grant Reviewer (2022-2024)
- Mistletoe Research Fellowship Selection Committee Member (2022)
- Secretary, Lawrence Berkeley National Laboratory Advanced Light Source User Executive Committee (Elected by LBNL ALS Users) (2022-2024)
- NSF Program Reviewer (2022-2024)
- NSF REU Mentor (Summer 2022-2023)
- Fulbright Candidate Interviewer and Application Reviewer, University of Washington (2019-2020)
- Germany Academic Exchange Service (DAAD) Application Reviewer, University of Washington (2018)
- Head Organizer of the Kavli Energy Nanoscience Institute Workshop on Emerging Perovskite Materials, UC Berkeley (2016)
- Physical Chemistry Seminar Committee, UC Berkeley (2016)
- Conference Session Chair for 2023 Materials Research Society Meeting, 2023 International Symposium on Functional π -Electron Systems, SPIE Optics + Photonics 2023 Meeting
- Reviewer for MRS Advances, Nano Letters, ACS Energy Letters, J. Phys. Chem A, Chemistry of Materials, Stanford Synchrotron Radiation Light Source, Journal of Materials Chemistry C, ACS Applied Polymer Materials, NPJ Computational Materials, Nature Communications, ACS Applied Materials & Interfaces, Angewandte Chemie, Journal of Chemical Physics, ACS Materials Letters, Journal of the American Chemical Society, Chemistry of Materials, Nanoscale Advances, Nanoscale

Teaching Experience

2022-2023	Head Instructor <i>University of Utah, Salt Lake City, UT</i> CHEM 3070: Thermodynamics and Kinetics	
2022-2023	Head Instructor <i>University of Utah, Salt Lake City, UT</i> CHEM 5720: Advanced Physical Chemistry Laboratory	
2022	Head Instructor <i>University of Utah, Salt Lake City, UT</i> CHEM 7350: The Ethical Pursuit of Scientific Research	
2021	Head Instructor <i>University of Washington, Seattle, WA</i> CHEM 152: General Chemistry	
2011-2013	Graduate Student Instructor <i>University of California Berkeley, Berkeley CA</i> CHEM 4A/AL – General Chemistry and Quantitative Analysis for Science and Engineering Majors CHEM 125 – Physical Chemistry Laboratory	2011
2010-2011	Laboratory Teaching Assistant for Undergraduate Students <i>Ruhr-Universität Bochum, Bochum Germany</i> Grundpraktikum Fluoreszenzkinetik (Fluorescence Kinetics Laboratory Tutorial)	2010-2011
2009-2010	Laboratory Teaching Assistant for Undergraduate Students <i>Haverford College, Haverford PA</i> CHEM205: Advanced General Chemistry CHEM221: Organic Chemistry I	2009, 2010 2010

Graduate Student Mentoring:

- Jolene Keller (2023-Present)
- Perry Martin (2023-Present)
- Clara Reed (2022-2023, M.S. in Chemistry, University of Utah)
- Garrett Collins (2021-Present)
- Seth Jackson (2021-Present)
- Rand Kingsford (2021-2023, M.S. in Chemistry, University of Utah)

Undergraduate/High School/International Exchange Student Mentoring:

- Arnel Besic (Undergraduate, UROP Fellow 2021-2022, REU Summer Student 2022, Wilkes Scholar 2023)
- Celeste Kalapala (Undergraduate, 2021-2022)
- Orion Xiao (High School Student, Summer 2022)
- Franka Gaedeke (Visiting Exchange Student, TU Braunschweig, 2022-2023)
- Leo Bloxham (Undergraduate, Wilkes Scholar 2023)
- Kierra Forthman (Undergraduate, REU Summer Student 2023, UROP Student 2023)
- Emily Dalley (Undergraduate, SPUR Summer Student 2023, UROP Student 2023)
- Delaney Miller (Undergraduate)
- Sofia Perez (Undergraduate, ACCESS Fellow)