

CURRICULUM VITAE

ERIK M. GRUMSTRUP

Associate Professor

<http://www.montana.edu/grumstruplab>

Montana Collaborative Materials Science Program

Department of Chemistry and Biochemistry

Montana State University

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PROFESSIONAL APPOINTMENTS

- | | |
|--|----------------|
| Associate Professor, Montana State University
Department of Chemistry and Biochemistry | 2020 – present |
| Program Director: Materials Science and Engineering Graduate Program | 2022 – present |
| Assistant Professor, Montana State University
Department of Chemistry and Biochemistry
Montana Collaborative Materials Science Ph.D. Program | 2014 – 2020 |

EDUCATION

- | | |
|--|-------------|
| Post-doctoral: National Research Council Research Associate
Army Research Office, Research Triangle Park
Department of Chemistry, University of North Carolina
Research Advisors: Dr. James K. Parker, Prof. John M. Papanikolas
Ultrafast Pump-Probe Microscopy of Semiconductor Nanostructures | 2013 – 2014 |
| Post-doctoral: Energy Frontier Research Center Postdoctoral Research Fellow
Department of Chemistry, University of North Carolina
Research Advisor: Prof. John. M. Papanikolas
Ultrafast Vibrational Spectroscopy of Light Harvesting Polymers | 2011 – 2013 |
| Ph.D. University of Colorado at Boulder, Chemical Physics
Dissertation: <i>“Elucidation of Ultrafast Photophysics with Optical Pulse Shaping”</i>
Research Advisor: Prof. Niels H. Damrauer | 2006 – 2011 |
| B. S. University of Minnesota Twin Cities, M: Chemistry m: Mathematics
Research Advisors: Prof. Ken R. Leopold and Prof. Christopher J. Cramer | 2001 – 2006 |

PUBLICATIONS (with MSU affiliation)

- Thiebes, J. J.; Grumstrup, E. M. Quantifying Noise Effects in Optical Measures of Excited State Transport. *Journal of Chemical Physics* **2024**, 160. DOI: [10.1063/5.0190347](https://doi.org/10.1063/5.0190347) Editors Pick
- King, A. J.; Paulino, V. A.; Hollinbeck, S. R.; Tsironi, I.; Maleszka, J. A.; Olivier, J. H.; Grumstrup, E. M. Covalently Tethered Assemblies Improve Energetic Homogeneity and Exciton Transport in Organic Materials. *ACS Materials Letters* **2024**, 6, 1404-1410. DOI: [10.1021/acsmaterialslett.4c00279](https://doi.org/10.1021/acsmaterialslett.4c00279)

40. Hollinbeck, S. R.; Liu, K.; Olivier, J.-H.; Grumstrup, E. M. Probing Excited State Delocalization and Charge Separation in Hierarchical Perylene Diimide Materials with Time-Resolved Broadband Microscopy. *The Journal of Physical Chemistry C* **2024**, *128*, 7977-7986. DOI: [10.1021/acs.jpcc.4c01369](https://doi.org/10.1021/acs.jpcc.4c01369)
39. Afrin, S.; Yang, X.; Morris, A. J.; Grumstrup, E. M. Rapid Exciton Transport and Structural Defects in Individual Porphyrinic Metal Organic Framework Microcrystals. *Journal of the American Chemical Society* **2024**, *146*, 4309-4313. DOI: [10.1021/jacs.3c12275](https://doi.org/10.1021/jacs.3c12275)
38. Orcutt, E. K.; Varapragasam, S. J.; Peterson, Z. C.; Andriolo, J. M.; Skinner, J. L.; **Grumstrup, E. M.** Ultrafast Charge Injection in Silver-Modified Graphitic Carbon Nitride. *ACS applied materials & interfaces* **2023**, *15* (12), 15478-15485. DOI: [10.1021/acsami.2c22870](https://doi.org/10.1021/acsami.2c22870)
37. Varapragasam, S. J. P.; Andriolo, J. M.; Skinner, J. L.; **Grumstrup, E. M.**, Photocatalytic Reduction of Aqueous Nitrate with Hybrid Ag/g-C₃N₄ under Ultraviolet and Visible Light. *ACS Omega* **2021**, *6* (50), 34850-34856. doi.org/10.1021/acsomega.1c05523
36. Huang, L.; Wong, C.; **Grumstrup, E. M.**, Time-Resolved Microscopy: A New Frontier in Physical Chemistry. *The Journal of Physical Chemistry A* **2020**, *124* (29), 5997-5998. doi.org/10.1021/acs.jpca.0c05511
35. Hickey, C. L.; **Grumstrup, E. M.**, Direct Correlation of Charge Carrier Transport to Local Crystal Quality in Lead Halide Perovskites. *Nano letters* **2020**, *20* (7), 5050-5056. doi.org/10.1021/acs.nanolett.0c01244
34. Hickey, C. L.; **Grumstrup, E. M.**, Reduced Artifact Approach for Determining Diffusion Coefficients in Time-Resolved Microscopy. *The Journal of Physical Chemistry C* **2020**, *124* (25), 14016-14021. doi.org/10.1021/acs.jpcc.0c02302
33. **Grumstrup, E. M.**; Spatiotemporal Coupling of Excited State Dynamics in Time-Resolved Microscopy. *Optics Express* **2019**, *27* (22), 31385-31393. doi.org/10.1364/OE.27.031385
32. Piland, G.; **Grumstrup, E. M.**; High Repetition Rate Broadband Pump-Probe Microscopy. *Cover article: The Journal of Physical Chemistry A* **2019**, *123* (40) 8709-8716. [10.1021/acs.jpca.9b03858](https://doi.org/10.1021/acs.jpca.9b03858)
31. Kennedy, C. L.; Hill, A. H.; **Grumstrup, E. M.**; Screening Links Transport and Recombination Mechanisms in Lead Halide Perovskites. *The Journal of Physical Chemistry C*. **2019**, *123* (25), 15827-15833. [10.1021/acs.jpcc.9b03235](https://doi.org/10.1021/acs.jpcc.9b03235)
30. Mahadevan, J.; Rudolph, J.; Jha, A.; Tay, J.; Dragavon, J.; **Grumstrup, E. M.**; Luger, K.; Q-FADD: A mechanistic approach for modeling the accumulation of proteins at sites of DNA damage. *Biophysical Journal* **2019**, *116* (11), 2224-2233. [10.1016/j.bpj.2019.04.032](https://doi.org/10.1016/j.bpj.2019.04.032)
29. Hill, A. H.; Kennedy, C. L.; Massaro, E. S.; **Grumstrup, E. M.**, Perovskite Carrier Transport: Disentangling the Impacts of Effective Mass and Scattering Time Through Microscopic Optical Detection. *The Journal of Physical Chemistry Letters* **2018**, *9* (11), 2808-2813. [10.1021/acs.jpcllett.8b00652](https://doi.org/10.1021/acs.jpcllett.8b00652)

28. Cating, E. E. M.; Pinion, C. W.; Christesen, J. D.; Christie, C. A.; **Grumstrup, E. M.**; Cahoon, J. F.; Papanikolas, J. M., Probing Intrawire, Interwire, and Diameter-Dependent Variations in Silicon Nanowire Surface Trap Density with Pump-Probe Microscopy. *Nano Letters* **2017**, *17* (10), 5956-5961. [10.1021/acs.nanolett.7b01876](https://doi.org/10.1021/acs.nanolett.7b01876)
27. Kennedy, C. L.; Hill, A. H.; Massaro, E. S.; **Grumstrup, E. M.**, Ultrafast Excited State Transport and Decay Dynamics in Cesium Lead Mixed-Halide Perovskites. *ACS Energy Letters* **2017**, *2*, 1501-1506. [10.1021/acsenergylett.7b00257](https://doi.org/10.1021/acsenergylett.7b00257)
26. Hill, A. H.; Smyser, K. E.; Kennedy, C. L.; Massaro, E. S.; **Grumstrup, E. M.**, Transient absorption imaging of carrier dynamics in disordered semiconductors. *Proc. SPIE-Int. Soc. Opt. Eng.* **2017**, 101930W. [10.1117/12.2262664](https://doi.org/10.1117/12.2262664)
25. Massaro, E.; **Grumstrup, E. M.**, Label-Free Saturated Structured Excitation Microscopy [Invited Article]. *Photonics* **2017**, *4* (2), 36. [10.3390/photonics4020036](https://doi.org/10.3390/photonics4020036)
24. Hill, A. H.; Smyser, K. E.; Kennedy, C. L.; Massaro, E. S.; **Grumstrup, E. M.**, Screened Charge Carrier Transport in Methylammonium Lead Iodide Perovskite Thin Films. *Journal of Physical Chemistry Letters* **2017**, *8* (5), 948-953. [10.1021/acs.jpcclett.7b00046](https://doi.org/10.1021/acs.jpcclett.7b00046)
23. Massaro, E. S.; Hill, A. H.; Kennedy, C. L.; **Grumstrup, E. M.**, Imaging Theory of Structured Pump-Probe Microscopy. *Optics Express* **2016**, *245* (18), 20868. [10.1364/oe.24.020868](https://doi.org/10.1364/oe.24.020868)
22. Massaro, E. S.; Hill, A. H.; **Grumstrup, E. M.**, Super-Resolution Structured Pump-Probe Microscopy. *ACS Photonics* **2016**, *3* (4), 501-506. [10.1021/acsp Photonics.6b00140](https://doi.org/10.1021/acsp Photonics.6b00140)
21. **Grumstrup, E. M.**; Gabriel, M. M.; Cating, E. E. M.; Van Goethem, E. M.; Papanikolas, J. M., Pump-probe microscopy: Visualization and spectroscopy of ultrafast dynamics at the nanoscale [Invited Perspective]. *Chemical Physics* **2015**, *458*, 30-40. [10.1016/j.chemphys.2015.07.006](https://doi.org/10.1016/j.chemphys.2015.07.006)

PUBLICATIONS (prior to MSU)

20. Zigler, D. F.; Morseth, Z. A.; Wang, L.; Ashford, D. L.; Brennaman, M. K.; **Grumstrup, E. M.**; Brigham, E. C.; Gish, M. K.; Dillon, R. J.; Alibabaei, L.; Meyer, G. J.; Meyer, T. J.; Papanikolas, J. M., Disentangling the Physical Processes Responsible for the Kinetic Complexity in Interfacial Electron Transfer of Excited Ru(II) Polypyridyl Dyes on TiO₂. *Journal of the American Chemical Society* **2016**, *138* (13), 4426-38. [10.1021/jacs.5b12996](https://doi.org/10.1021/jacs.5b12996)
19. Brennaman, M. K.; Norris, M. R.; Gish, M. K.; **Grumstrup, E. M.**; Alibabaei, L.; Ashford, D. L.; Lapidés, A. M.; Papanikolas, J. M.; Templeton, J. L.; Meyer, T. J., Ultrafast, Light-Induced Electron Transfer in a Perylene Diimide Chromophore-Donor Assembly on TiO₂. *Journal of Physical Chemistry Letters* **2015**, *6* (23), 4736-4742. [10.1021/acs.jpcclett.5b02194](https://doi.org/10.1021/acs.jpcclett.5b02194)
18. **Grumstrup, E.M.**; Gabriel, M.M.; Pinion, C.W.; Parker J.K.; Cahoon, J.F.; Papanikolas, J.M.; Reversible strain-induced electron-hole recombination in silicon nanowires observed with femtosecond pump-probe microscopy. *Nano Letters*, **2014**, *14*, 6287-6292. [10.1021/nl5026166](https://doi.org/10.1021/nl5026166)
17. Gabriel, M.M.; **Grumstrup, E.M.**; Kirschbrown J.R.; Christesen, J.D.; Pinion, C.W.; Cahoon, J.F.; Papanikolas J.M.; Imaging carrier motion in nanowire p-i-n junctions using ultrafast microscopy. *Nano Letters*, **2014**, *14*, 3079-3087. [10.1021/nl5012118](https://doi.org/10.1021/nl5012118)
16. **Grumstrup, E.M.**; Gabriel, M.M.; Kirschbrown J.R.; Cating E.M.; Christesen, J.D.; Pinion, C.W.; Vallorz, E. L. III; Cahoon, J.F.; Parker, J.K.; Papanikolas J.M.; Ultrafast carrier dynamics in individual

- silicon nanowires: Characterization of diameter-dependent carrier lifetime and surface recombination with pump-probe microscopy. *Journal of Physical Chemistry C*, **2014**, *118*, 8634-8640. [10.1021/jp502737e](https://doi.org/10.1021/jp502737e)
15. **Grumstrup, E.M.**; Cating E.M.; Gabrielle M.M.; Kirschbrown J.R.; Vallorz, E. L. III; Christesen, J.D.; Pinion, C.W.; Cahoon, J.F.; Parker, J.K.; Papanikolas J.M.; Ultrafast carrier dynamics of silicon nanowire ensembles: The impact of geometrical heterogeneity on charge carrier lifetime. *Journal of Physical Chemistry C*, **2014**, *118*, 8626-8633. [10.1021/jp501079b](https://doi.org/10.1021/jp501079b)
 14. Chen*, Z.; **Grumstrup***, E.M.; Gilligan, A; Schanze, K.S.; Papanikolas, J.M. Ultrafast energy transfer in polystyrene linked donor acceptor co-polymers. *Journal of Physical Chemistry B*, **2014**, *118*, 372-378. [10.1021/jp411565p](https://doi.org/10.1021/jp411565p)
 13. Christesen, J.D.; Pinion, C.W.; **Grumstrup, E.M.**; Papanikolas J.M.; Cahoon, J.F.; Synthetically encoding 10 nm morphology in silicon nanowires. *Nano Letters*, **2013**, *13*, 6281-6286. [10.1021/nl403909r](https://doi.org/10.1021/nl403909r)
 12. **Grumstrup, E.M.**; Chen, Z.; Vary, R.P.; Moran, A.M.; Schanze, K.S.; Papanikolas, J.M. Frequency modulated femtosecond stimulated Raman spectroscopy (FM-FSRS) of ultrafast energy transfer in a donor-acceptor co-polymer. *Journal of Physical Chemistry B*, **2013**, *117*, 8245-8255. [10.1021/jp404498u](https://doi.org/10.1021/jp404498u)
 11. Wang, L.; Puodziukynaite, E.; **Grumstrup, E.M.**; Schanze, K.S.; Reynolds, J.R.; Papanikolas, J.M. Charge separation in Ru-loaded poly(3-hexylthiophene) light-harvesting polymer. *Journal of Physical Chemistry Letters*, **2013**, *4*, 2269-2273. [10.1021/jz401089v](https://doi.org/10.1021/jz401089v)
 10. Gabriel, M. M.; Kirschbrown, J. R.; Christesen, J. D.; Pinion, C. W.; Zigler, D. F.; **Grumstrup, E. M.**; Mehl, B. P.; Cating, E. E. M.; Cahoon, J. F.; Papanikolas, J. M. Direct imaging of free carrier and trap carrier motion in silicon nanowires by spatially-separated femtosecond pump-probe microscopy. *Nano Letters* **2013**, *13*, 1336–1340. [10.1021/nl400265b](https://doi.org/10.1021/nl400265b)
 9. **Grumstrup, E.M.**; Damrauer, N. H. Modeling and correction of distorted two-dimensional Fourier transform spectra from pixelated pulse shaping devices. *Optics Express* **2012**, *20*, 20908–20919. [10.1364/oe.20.020908](https://doi.org/10.1364/oe.20.020908)
 8. Wang, L.; Puodziukynaite, E.; Vary, R. P.; **Grumstrup, E. M.**; Walczak, R. M.; Zolotarskaya, O. Y.; Schanze, K. S.; Reynolds, J. R.; Papanikolas, J. M. Competition between ultrafast energy flow and electron transfer in a Ru(II)-loaded polyfluorene light-harvesting polymer. *Journal of Physical Chemistry Letters*. **2012**, *3*, 2453–2457. [10.1021/jz300979j](https://doi.org/10.1021/jz300979j)
 7. **Grumstrup, E.M.**; Johnson, J. C.; Damrauer, N. H. Enhanced triplet formation in polycrystalline tetracene films by femtosecond optical-pulse shaping. *Physical Review Letters* **2010**, *105*, 257403. [10.1103/PhysRevLett.105.257403](https://doi.org/10.1103/PhysRevLett.105.257403)
 6. **Grumstrup***, E. M.; Montgomery*, M.A.; Damrauer, N. H. Fourier transform spectroscopies derived from amplitude or phase shaping of broadband laser pulses with applications to adaptive control. *Journal of the Optical Society of America B* **2010**, *27*, 2518–2533. [10.1364/JOSAB.27.002518](https://doi.org/10.1364/JOSAB.27.002518)
 5. Brauer, C. S.; Sedo, G.; Dahlke, E.; Wu, S.; **Grumstrup, E. M.**; Leopold, K. R.; Marshall, M. D.; Leung, H. O.; Truhlar, D. G. Effects of ¹⁸O isotopic substitution on the rotational spectra and potential splitting in the OH-OH₂ complex: improved measurements for ¹⁶OH-¹⁶OH₂ and ¹⁸OH-¹⁸OH₂, new measurements for the mixed isotopic forms, and ab initio calculations of the ²A¹-²A¹ energy separation. *The Journal of Chemical Physics* **2008**, *129*, 104304. [10.1063/1.2973638](https://doi.org/10.1063/1.2973638)

4. **Grumstrup*, E.M.**; Shim*, S-H.; Montgomery, M. A.; Damrauer, N. H.; Zanni, M. T. Facile collection of two-dimensional electronic spectra using femtosecond pulse-shaping technology. *Optics Express* **2007**, *15*, 16681–16689. [10.1364/oe.15.016681](https://doi.org/10.1364/oe.15.016681)
3. Wu, S.; Sedo, G.; **Grumstrup, E. M.**; Leopold, K. R. Microwave spectra of O(2)-HF and O(2)-DF: hyperfine interactions and global fitting with infrared data. *The Journal of Chemical Physics* **2007**, *127*, 204315. [10.1063/1.2804770](https://doi.org/10.1063/1.2804770)
2. Brauer, C. S.; Craddock, M. B.; Kilian, J.; **Grumstrup, E. M.**; Orilall, M. C.; Mo, Y.; Gao, J.; Leopold, K. R. Amine-hydrogen halide complexes: experimental electric dipole moments and a theoretical decomposition of dipole moments and binding energies. *Journal of Physical Chemistry A* **2006**, *110*, 10025–10034. [10.1021/jp062101a](https://doi.org/10.1021/jp062101a)
1. Brauer, C.S.; Sedo, G; **Grumstrup, E.M.**; Leopold, K.; Marshall, M.; Leung. H.; Effects of partially quenched orbital angular momentum on the microwave spectrum and magnetic hyperfine splitting in the OH-water complex. *Chemical Physics Letters* **2005**, *401*, 420-425. [10.1063/1.2973638](https://doi.org/10.1063/1.2973638)

*Authors contributed equally

INVITED CONFERENCE PRESENTATIONS

1. “Structural and functional heterogeneity in light-harvesting materials”; Inter American Photochemical Society; Miramar Beach, FL; 01/05/24
2. “Probing microscale disorder with time-resolved emission and reflection microscopies”; ACS Fall Meeting; Virtual Meeting; 08/25/19
3. “Ultrafast carrier-phonon coupling in lead halide perovskites”; Arnold and Mabel Beckman Foundation Research Symposium; Virtual Meeting; 08/06/2019
4. “Halide Substitution Modulates Screening in Lead Halide Perovskites”; DOE Solar Photochemistry PI Meeting; Gaithersburg, MD; 06/04/2019
5. “From photons to electricity: understanding how chemistry tunes next-generation solar-cell materials”; MT Local ACS Fall Meeting (Keynote address); Pray, MT 10/13/2018
6. “Ultrafast carrier-phonon dynamics in nanoscale materials”; Arnold and Mabel Beckman Foundation Research Symposium; Irvine, CA; 08/12/2018
7. “Chemical and Structural Factors of Excited State Transport”; DOE Solar Photochemistry PI Meeting; Gaithersburg, MD; 06/06/2018
8. “Chemically and Structurally Correlated Charge Carrier Transport in Nanoscale Materials”; ACS Spring Meeting; New Orleans, LA; 03/18/18
9. “Superresolution optical strategies for revealing ultrafast carrier-phonon dynamics in nanoscale materials”; Arnold and Mabel Beckman Foundation Research Symposium; Irvine, CA; 08/03/2017
10. “Structurally-correlated charge carrier dynamics in disordered semiconductors”; DOE Solar Photochemistry PI Meeting; Gaithersburg, MD; 06/07/2017
11. “Transient Absorption Imaging of Carrier Dynamics in Disordered Semiconductors”; SPIE Defense + Security – Ultrafast Bandgap Photonics II; Anaheim, CA; 04/12/17

12. *"Ultrafast Dynamics of CH₃NH₃PbI₃ Perovskites: Spatial and Temporal Insight through Pump-Probe Microscopy"*; Telluride Science Series - Perovskites: Theory meets Experiment; Telluride, CO; 07/13/16
13. *"Ultrafast Dynamics of CH₃NH₃PbI₃ Perovskites: Spatial and Temporal Insight through Pump-Probe Microscopy"*; Southwest Ultrafast Conference; Austin, TX; 06/16/16
14. *"Ultrafast microscopy of methylammonium lead iodide perovskite thin-films: heterogeneity of excited state spatial and temporal evolution"*; DOE Solar Photochemistry PI meeting; Gaithersburg, MD; 06/08/16
15. *"Ultrafast Imaging: Correlating Structure and Function in Silicon Nanomaterials"*; Fluorofest Durham, NC; 11/02/14
16. *"Strain-Enhanced Carrier Recombination in Silicon Nanowires"*; Excited State Phenomena Symposium; Santa Fe, NM; 06/07/14.
17. *"Photoinduced Charge Transfer Dynamics at the Chromophore- and Assembly- Semiconductor Interface"*; Energy Frontier Research Center Principle Investigators Meeting; Washington, DC; 07/18/13.

INVITED DEPARTMENTAL SEMINARS

1. *"Structural and functional heterogeneity in light-harvesting materials"*; Boston University, Boston, MA; Scheduled 02/03/25
2. *"Probing Functionality in Disordered Materials with Time-Resolved Spectroscopy and Microscopy"*; Pennsylvania State University, State College, PA; 04/19/23
3. *"Chemically and Structurally Correlated Charge Carrier Transport in Disordered Materials"*; Michigan State University, East Lansing, MI; 09/19/22
4. *"Dynamics of Complex Systems Probed with Nonlinear and Linear Microscopies"* Boise State University, Virtual Seminar; 10/30/20
5. *"Chemically and Structurally Correlated Charge Carrier Transport in Disordered Materials"*; Utah State University, Logan, UT; 01/29/20
6. *"Chemically and Structurally Correlated Charge Carrier Transport in Nanoscale Materials"*; North Carolina State University, Raleigh, NC; 04/18/19
7. *"Chemically and Structurally Correlated Charge Carrier Transport in Nanoscale Materials"*; University of North Carolina, Chapel Hill, NC; 04/17/19
8. *"Chemically and Structurally Correlated Charge Carrier Transport in Nanoscale Materials"*; Duke University, Durham, NC; 04/16/19
9. *"Chemically and Structurally Correlated Charge Carrier Transport in Nanoscale Materials"*; Miami University, Miami, FL; 04/12/19
10. *"Chemically and Structurally Correlated Charge Carrier Transport in Nanoscale Materials"*; University of Kansas, Lawrence, KS; 03/29/19
11. *"Chemically and Structurally Correlated Charge Carrier Transport in Nanoscale Materials"*; Ohio State University, Columbus, OH; 03/04/19

12. *"Chemically and Structurally Correlated Charge Carrier Transport in Nanoscale Materials"*; University of Texas, Austin, TX; 02/28/19
13. *"Chemically and Structurally Correlated Charge Carrier Transport in Nanoscale Materials"*; University of Washington, Seattle, WA; 02/20/19
14. *"Chemically and Structurally Correlated Charge Carrier Transport in Nanoscale Materials"*; University of Minnesota, Minneapolis, MN; 02/07/19
15. *"Chemically and Structurally Correlated Charge Carrier Transport in Nanoscale Materials"*; University of Colorado, Boulder, CO; 04/13/18
16. *"Watching Electrons Move and Shake at the Nanoscale"*; Chemistry Department Seminar; Cal Poly San Luis Obispo, San Luis Obispo, CA; 04/07/17
17. *"Optoelectronics at the Nanoscale: Ultrafast Electron Dynamics of Complex Materials"*; Chemistry Department Seminar; BYU Idaho; Rexburg, ID; 03/10/16
18. *"Optoelectronics at the Nanoscale: Ultrafast Electron Dynamics of Complex Materials"*; Physics Department Seminar; Montana State University; Bozeman, MT; 03/09/16
19. *"Ultrafast Imaging: Watching Electrons Move at the Nanoscale"*; Chemistry Department Seminar; Carroll College; Helena, MT; 11/20/14
20. *"Time-Resolved Pump Probe Microscopy of Ultrafast Carrier Dynamics in Silicon Nanowires"*; Chemistry Departmental Seminar; Montana State University; Bozeman, MT. 03/30/14
21. *"Time-Resolved Pump Probe Microscopy of Ultrafast Carrier Dynamics in Silicon Nanowires"*; Chemistry Departmental Seminar; Colorado School of Mines; Golden, CO. 03/10/14
22. *"Time-Resolved Pump Probe Microscopy of Ultrafast Carrier Dynamics in Silicon Nanowires"*; Nanoscience Departmental Seminar; South Dakota School of Mines; Rapid City, SD. 02/26/14

HONORS AND AWARDS

- The James and Mary Ross Award for Excellence in teaching and scholarship 2023
- MSU College of Letters and Science Outstanding Teaching Award 2022
- Presidential Early Career Award for Scientists and Engineers (PECASE) 2019
- Arnold and Mabel Beckman Foundation Young Investigator 2017
- Department of Energy Early Career Research Award 2015
- National Research Council Post-Doctoral Fellowship 2013

TEACHING

CLASSROOM COURSES

- F14 CHMY 557 – Quantum Mechanics I (3 students)
- F15 CHMY 141 – College Chemistry I (370 students)
- F16 CHMY 557 – Quantum Mechanics I (8 students)
- S17 MTSI 552 – Adv. Materials Char. II (16 students)
- F17 CHMY 141 – College Chemistry I (181 students)
- S18 MTSI 552 – Adv. Materials Char. II (16 students)
- F18 CHMY 141 – College Chemistry I (203 students)
- CHMY 557 – Quantum Mechanics I (15 students)

- F19 MTSI 501 – Advanced Materials Science I (26 students)
- S20 CHMY 311 – Fundamental Analytical Chemistry (26 students)
- F20 MTSI 501– Advanced Materials Science I (8 students)
- S21 CHMY 153 – Honors General Chemistry II (48 students)
- F21 MTSI 501 – Advanced Materials Science I (1 students)
- S22 CHMY 153 – Honors General Chemistry II (39 students)
- F22 CHMY 557 – Quantum Mechanics I (5 students)
- S23 MTSI 503 – Electronic Properties of Materials (9 students)
- F23 CHMY 371 – Quantum Chemistry and Spec. (24 students)
- S24 MTSI 503 – Electronic Properties of Materials (18 students)

ADVISING

POST DOCTORAL ASSOCIATES

- Jason Malizia, Ph.D. U of North Carolina, Chemistry 10/21 – 02/23
- Shelton Jesuraj Varapragasam, Ph.D. U of South Dakota, Chemistry 09/18 – 03/22
- Casey Hickey, Ph.D. MSU, Bozeman, Chemistry 05/20 – 12/20
- Geoffrey Piland , Ph.D. UC Riverside, Chemistry 10/17 – 10/19

CURRENT GRADUATE STUDENT GROUP MEMBERS

- Jonah Theisen Chemistry 12/20 – Present
- Emma Orcutt Chemistry 12/21 – Present
- Mashrur Chowdhury Materials Science 05/22 – Present
- Kendall Benton Materials Science 09/24 – Present

FORMER GRADUATE STUDENT GROUP MEMBERS

- Joseph Thiebes **Ph.D. Chemistry** (Summer 2024)
- Alex King **Ph.D. Materials Science** (Spring 2024)
- Skyler Hollinbeck **Ph.D. Chemistry** (Spring 2024)
- Sajia Afrin **Ph.D. Materials Science** (Spring 2024)
- Casey Kennedy **Ph.D. Chemistry** (Spring 2020)
 - Patent Agent, Alston and Bird
- Andrew Hill **Ph.D. Materials Science** (Summer 2018)
 - Sales Engineer, NKT Photonics
- Eric Massaro **Ph.D. Chemistry** (Summer 2018)
 - Chemist, ANI Pharmaceuticals
- Saranyan Srinivasan Rangunath Materials Science
- Becca Danforth Ph.D. Chemistry (Spring 2017)
 - Ad hoc MSU advisor in lieu of Bern Kohler
- Alexander Hathaway M.S. Chemistry (Summer 2020)
 - US Navy

UNDERGRADUATE STUDENT GROUP MEMBERS

- Paul Guzley Chemical Engineering 09/23 – present
- Lane Holman Chemistry Education 09/23 – present

• Kaylin Bruckhart	Chemistry	01/24 – present
• Samantha Roth	Chemistry	01/24 – present
• Devin McGlamery	Chemistry	12/23 – 12/24
• Zoe Peterson	Chemistry	12/20 – 05/22
• Noah Anderson	Chemistry	08/20 – 05/22
• Serafina Fortiner	Chemistry	08/20 – 12/21
• Ryan Johnson	Chemistry	01/19 – 12/21
• Mason Devries	Chemistry	04/19 – 08/19
• Bukuru Anaclet	REU Student	Summer 2019
• Hayden Larcom	Chemistry	09/18 – 05/19
• David Loertscher	REU Student – now PhD Student at U. Utah	Summer 2018
• Erin Dockins	Chemistry/History	09/15 – 12/18
• Jenna Kuipers	Chemistry	08/18 – 05/18
• Kori Smyser	Chemistry – now Ph.D. student at CU Boulder	01/15 – 05/17
• Bill Vandenberg	Industrial Engineering	08/16 – 05/17
• Claire Neumeier	Chemistry	08/15 – 05/16
• Gunnar Hillborn	Chemistry Summer Program (Carroll College)	06/15 – 08/15
• Tanner Nielsen	Chemistry	08/15 – 12/15

GRADUATE COMMITTEES

- Currently serving on 29 graduate student committees (9 Materials Science; 19 Chemistry/Biochemistry; 1 Physics)

SERVICE AND SYNERGISTIC ACTIVITIESPROFESSIONAL

- General Chair for the 2023 Northwest Regional Meeting of the American Chemical Society
- Invited Guest Editor for JPC special issue on time-resolved microscopy
- Proposal reviewer for NSF, ACS-PRF, Army Research Office, and U.S. Department of Energy
- Chemistry Panel Member NSF (Spring 2020, Spring 2022, Fall 2022)
- Peer-review for manuscripts in ACS Applied Materials and Interfaces, Journal of Physical Chemistry (AB&C), Journal of Physical Chemistry Letters, Optics Letters, Laser and Photonics Reviews, Nano Letters, ACS Nano, Heat Transfer Engineering, ChemPhysChem, Nature Photonics, ACS Sustainable Chemistry and Engineering, JACS, Nanoscale, Nature Materials

UNIVERSITY/DEPARTMENTAL

- | | |
|---|---------------------|
| • Director: Montana Collaborative Materials Science Program | Fall 22 – present |
| • Chair: University Laser Safety Committee | Fall 20 – present |
| • Undergraduate Academic Advisor | AY 18-19 – Present |
| • Laser Safety Committee Member: Radiation Safety Committee | AY 18-19 – F 20 |
| • Undergraduate Scholars Program Proposal Reviewer | AY 15-16 – AY 19-20 |
| • Committee Member: Chem/Biochem Graduate Admissions | AY 15-16 – AY 22-23 |
| • “Science Matters” Lecture Series Committee Member | AY 18-19 – AY 20-21 |
| • Panel Member: Independent Experiential Learning | 09/26/19 |
| • “10X10” Innovation Roadshow Presenter | 09/19/19 |
| • Panel Member: New Faculty Orientation | 08/15/19 |

- Student Invited Guest Lecturer – CHBE Senior Design 03/05/19
- “10X10” Innovation Roadshow Presenter 09/20/18
- Chemistry and Biochemistry Seminar Series Co-organizer AY 14-15 – AY 18-19
- Chair: Pat Callis Symposium Organizing Committee AY 17-18
- Hiring Committee member (Asst. Prof. in AMO) – Physics AY 16-17
- Co-organizer proposal writing workshop for Graduate Student Summit AY 15-16
- Panel Member for Graduate Student CV/resume workshop AY 15-16
- Hiring Committee Member (Asst. Prof. in O. Chem.) – Chem/Biochem AY 15-16
- “MSU Friday” Lecturer AY 15-16