

KIMBERLY A. PEREIRA

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EDUCATION

University of Massachusetts Amherst, Amherst, MA

Doctor of Philosophy in Chemistry

GPA: 4.00 Expected Summer 2024

Union College, Schenectady, NY

Bachelor of Science: ACS Chemistry with Honors (summa cum laude)

GPA: 3.90

June 2017

Bachelor of Arts: English with Honors (summa cum laude)

GPA: 4.00

June 2017

PROFESSIONAL EXPERIENCE

Graduate Student, Department of Chemistry, University of Massachusetts Amherst, Amherst, MA

Aug 2019–Present

Advisor: Prof. James P. S. Walsh

- Investigating high pressure synthesis routes to novel intermetallic phases that exhibit favorable properties such as superconductivity, super-hardness, and strong magnetism.
- Carrying out dynamic compression experiments at LCLS-MEC and APS-DCS performing X-ray diffraction and VISAR analysis on metallic and oxide materials.
- Operating and managing a Rigaku Synergy-S single crystal X-ray diffractometer (SCXRD).

High Energy Density Center Intern, Lawrence Livermore National Laboratory, Livermore, CA

May 2023–August 2023

Advisors: Dr. Raymond Smith and Dr. Samantha Clarke

- Designing experiments at Omega LLE and the Jupiter Laser Facility to explore the high-pressure states of materials including explosives, elements, and compounds.
- Engineering laser systems at the Jupiter Laser Facility for the collection of high quality velocimetry data.
- Participating in experiments at the National Ignition Facility on high-energy explosives and DiPOLE at the EuXFEL on iron, carbon, and plastics.
- Calculating high energy density states of matter using advanced hydrocode simulations.

R&D Intern, MAX Analytical Technologies (Thermo Fisher Scientific), East Windsor, CT

Nov 2019–Jan 2020

Advisor: Dr. Marty Spartz

- Conducted research and designed experiments on novel GC-IR technologies to detect aromatics in air and liquid samples.
- Designed experiments to test the efficacy of catalytic reactors coupled to GC-IR technologies.

VOC-VOA Analyst, Phoenix Environmental Labs, Inc., Manchester, CT

Oct 2018–Aug 2019

SVOC, VOC-Air Technician/Analyst, Eurofins Spectrum Analytical, Agawam, MA

Aug 2017–Oct 2018

Researcher and Thesis Student, Chemistry Department of Union College, Schenectady, NY

Jan 2015–Jun 2017

Advisors: Prof. Joanne D. Kehlbeck and Prof. Michael E. Hagerman

- Explored routes to low-cost, environmentally-friendly, and efficient solar cells using organic and metallic components to create a hybrid bulk heterojunction.
- Collected and analyzed ¹H-NMR, ³¹P-NMR, UV-Vis, fluorescence, infrared spectroscopy, SEM and AFM data to assess the properties of cadmium-selenide nanoparticles and organic tethering ligands.

Clinical Biochemical Lab Assistant, King's College Hospital, London, UK

Mar 2016–Jun 2016

Advisor: Dr. Royce Vincent

- Reviewed and analyzed polycystic ovarian syndrome (PCOS) patient data to identify connections between high androgen levels and the severity of the syndrome.
- Cataloged and quantified steroid metabolites in urine samples using LC-MS/MS to diagnose cancers and adrenal disorders.

PUBLICATIONS

Pereira, K. A.; Briggs, R.; Lee, H. J.; McGonegle, D.; Tracy, S. J.; Gorman, M. G.; Coleman, A. L.; Davis, C.; Hutchinson, T.; Singh, S.; Smith, R. F.; Eggert, J. H.; Clarke, S. M.; Walsh, J. P. S. "X-Ray Diffraction Measurements Across The Melt Line In Shocked Nickel." *In preparation*.

Cueto, C. J.; Hu, W.; Ribbe, A.; Bolduc, K. A.; Emrick, T. "Polystyrene-based Macromolecular Ammonium Halides for Tuning Color and Exchange Kinetics of Perovskite Nanocrystals." *Angew. Chem.* **2022**, 134 (37).

Cueto, C. J.; Donoghue, C.; Bolduc, K. A.; Emrick, T. "Zwitterionic Block Copolymers for the Synthesis and Stabilization of Perovskite Nanocrystals." *Chem. Eur. J.* **2022**, 28 (30).

ACADEMIC SERVICE AND TEACHING

JACS Spotlight Writer, Journal of the American Chemical Society, Washington, D.C.
Teaching Assistant, UMass Amherst, Amherst, MA
Chemistry Tutor, General Chemistry Help Center of Union College, Schenectady, NY

Apr 2020–Present
Sept 2019–Present
Apr 2015–Mar 2016

AWARDS AND RECOGNITIONS

William E. McEwen Award for Outstanding Oral Presentation, UMass Amherst	Aug 2023
DEPS Research Grant Graduate Scholar Award	Aug 2023
Livermore Lab Foundation HEDS Fellow	Jul 2023
Donald Kuhn Graduate Fellowship Award, UMass Amherst	Dec 2022
PPG Fellowship, UMass Amherst	Dec 2022
MSE-IDGP Symposium Best Poster Award, UMass Amherst	Nov 2022
William E. McEwen Award for Outstanding Poster Presentation, UMass Amherst	Aug 2022
Outstanding Poster Award, GRS/GRC on High Pressure	Jul 2022
Chemistry Department Ambassador Award, UMass Amherst	Apr 2022
NSF GRFP Honorable Mention	Mar 2021
American Chemical Society Undergraduate Inorganic Chemistry Award	May 2017
American Chemical Society Undergraduate Analytical Chemistry Award	Nov 2016
Summer Research Fellow, Union College	Jun 2016
Goldwater Scholarship Honorable Mention	Apr 2016

PROFESSIONAL MEMBERSHIPS

Society of Physics Students	Jul 2023–Present
Association for Women in Science	Feb 2022–Present
American Physical Society Member	Jun 2021–Present
Phi Beta Kappa Member	Apr 2017–Present
Sigma Xi Associate Member	Apr 2017–Present
American Chemical Society Member	Nov 2015–Present

LEADERSHIP EXPERIENCE

<i>Member, Diversity, Equity, and Inclusion Committee</i> , UMass Amherst, Amherst, MA	<i>Oct 2022–Present</i>
<i>Member, Graduate Women in STEM</i> , UMass Amherst, Amherst, MA	<i>Mar 2020–Present</i>
<i>Treasurer, Assoc. for Professional Development in Chemistry</i> , UMass Amherst, Amherst, MA	<i>Feb 2019–Feb 2022</i>
<i>Chair, Honor Council</i> , Union College, Schenectady, NY	<i>Nov 2015–Jun 2017</i>
<i>Treasurer, Chemistry and Biochemistry Club</i> , Union College, Schenectady, NY	<i>Sept 2016–Jun 2017</i>
<i>Editor-in-Chief, Concordiensis Newspaper</i> , Union College, Schenectady, NY	<i>Jun 2016–Mar 2017</i>

ORAL PRESENTATIONS

32 nd Annual ResearchFest, UMass Amherst	Aug 2023
23 rd American Physical Society Biennial Topical Group Meeting on Shock Compression of Condensed Matter	June 2023
Materials Colloquium, UMass Amherst	May 2022
Chemistry Seminar, Union College	Nov 2021
Nanosciences Session in Honor of Michael E. Hagerman, 31 st Annual Steinmetz Symposium, Union College	May 2021
Chemistry Seminar, Union College	Jan 2021
27 th Steinmetz Symposium, Union College	May 2017
Union College Summer Research Fellowship Seminar, Union College	Aug 2016

POSTER PRESENTATIONS

NIF-PS Poster Symposium, LLNL	Aug 2023
MSE-IDGP Poster Symposium, UMass Amherst	Nov 2022
31 st Annual ResearchFest, UMass Amherst	Aug 2022
GRS/GRC on High Pressure, Holderness, NH	Jul 2022
30 th Annual ResearchFest, UMass Amherst	Aug 2021
253 rd American Chemical Society National Meeting	Apr 2017
252 nd American Chemical Society National Meeting	Mar 2016