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Brandi M. Cossairt
Lloyd E. and Florence M. West Endowed Professor of Chemistry
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EXPERIENCE

Lloyd E. and Florence M. West Endowed Professor of Chemistry, University of Washington
September 2021–Present

Professor of Chemistry, University of Washington — September 2020–August 2021

Associate Professor of Chemistry, University of Washington — September 2018–August 2020

Assistant Professor of Chemistry, University of Washington — July 2012–August 2018

NIH NRSA Postdoctoral Fellow, Columbia University — July 2010–June 2012
Advisor: Professor Jonathan S. Owen

EDUCATION

Ph.D., Inorganic Chemistry, Massachusetts Institute of Technology — 2006–2010
Dissertation: *Niobium-Mediated Synthesis of Phosphorus-Rich Molecules*
Advisor: Christopher C. Cummins

B.S., Chemistry with Honors, California Institute of Technology — 2002–2006
Advisors: Jonas C. Peters, Jesse L. Beauchamp; Anthony J. Hynes (University of Miami)

AWARDS AND HONORS

2024 Elected as a Fellow of the American Association for the Advancement of Science (AAAS)
2021 Elected to the Washington State Academy of Sciences
2021 Finalist, Blavatnik National Awards for Young Scientists, Blavatnik Family Foundation and the New York Academy of Sciences
2018 National Fresenius Award, ACS National Award sponsored by Phi Lambda Upsilon
2018 Dalton Lecture in Inorganic Chemistry, UC Berkeley College of Chemistry
2018 Finalist, University of Washington Distinguished Teaching Award
2018 Associate Editor, *Inorganic Chemistry* (2018–present)
2017 Kavli Fellow, National Academy of Sciences
2017 Camille Dreyfus Teacher-Scholar Award, The Camille and Henry Dreyfus Foundation
2016 Reviewer Award, *Chemistry of Materials*
2016 CAREER Award, National Science Foundation
2015 Packard Fellowship for Science and Engineering, The David and Lucile Packard Foundation
2015 Sloan Research Fellowship, The Alfred P. Sloan Foundation
2015 3M Non-Tenured Faculty Award
2015 Nominee, University of Washington Distinguished Teaching Award
2015 Award for Early Career Achievement, Seattle Association for Women in Science
2014 University of Washington Innovation Award

2010 Ruth L. Kirschstein National Research Service Award, National Institutes of Health
2010 Alan Davison Ph.D. Thesis Prize, Massachusetts Institute of Technology
2009 Young Investigator Award, Division of Inorganic Chemistry, American Chemical Society
2007 Strem Summer Graduate Fellowship in Chemistry, Massachusetts Institute of Technology
2006 Award for Outstanding Teaching in Chemistry, Massachusetts Institute of Technology
2006 Richard P. Schuster Memorial Prize, California Institute of Technology

PUBLICATIONS *(*corresponding author)*

123. Roy, D.; Larson, H. C.; **Cossairt, B. M.**; Moreau, L. M.* Connecting Nanoseed Defect Structure and Crystallinity with Resulting Nanoparticle Products. *Submitted*.
122. Sharp, D.; Kala, A.; Rarick, H.; Nguyen, H. A.; Skytte, E.; **Cossairt, B. M.**; Majumdar, A.* Nanocavity-Enhanced Second-Harmonic Generation from Colossal Quantum Dots. *Submitted.*
121. Guymon, G. G.; Nguyen, H. A.; Sharp, D.; Nguyen, T.; Lei, H.; Ginger, D. S.; Fu, K.-M. C.; Majumdar, A.; **Cossairt, B. M.**; MacKenzie, J. D.* Deterministic Printing and Heterointegration of Single Colloidal Quantum Dot Photon Sources. *Submitted*. https://arxiv.org/abs/2501.04177
120. Jeffries, W. R.; Sandeno, S. F.; **Cossairt, B. M.**; Khalil, M.* Surface Carboxylate Sensitivity to Electron and Hole Relaxation in Photoexcited Cadmium Sulfide Nanocrystals. *Submitted*.
119. Buonsanti, R.*; **Cossairt, B. M.*** The Future of Colloidal Semiconductor Nanocrystals. *Chem. Mater.* **2025**, *37*, 1333. https://doi.org/10.1021/acs.chemmater.5c00023
118. Qi, X.*; Helland, S.; Lowe, C. D.; Larson, H. C.; Cui, J.; Zheng, R.; Monahan, M.; Chen, C.-L.; De Yoreo, J.; Pfaendtner, J.; **Cossairt, B. M.*** Towards Computation-Guided Design of Tunable Organic-Inorganic CdS Quantum Dot Binary Superlattices. *Nano Lett.* **2025**, DOI: 10.1021/acs.nanolett.5c00024. https://pubs.acs.org/doi/full/10.1021/acs.nanolett.5c00024
117. Larson, H. C.; Lin, Z.; Baneyx, F.; **Cossairt, B. M.*** Alternate InP Synthesis with Aminophosphines: Solution-Liquid-Solid Nanowire Growth. *Nanoscale* **2025**, *17*, 6593-6603. https://pubs.rsc.org/en/content/articlelanding/2025/nr/d4nr04907a ChemRxiv: https://doi.org/10.26434/chemrxiv-2024-cm2t6
116. Xu, Y.; Dixon, G.; Xie, Q.; Gilchrist, J. F.; **Cossairt, B. M.**; Ginger, D. S.; Reichmanis, E.* Landau-Levich Scaling for Optimization of Quantum Dot Layer Morphology and Thickness for Enhanced QLED Performance. *ACS Nano* **2025**, DOI: 10.1021/acsnano.4c15912. https://pubs.acs.org/doi/10.1021/acsnano.4c15912. http://arxiv.org/abs/2501.01918
115. Rivera-Maldonado, R. A.; Gironda, A. J.; Varughese, A.; Kuo, D.-Y., Nguyen, H. A.; Dean-Hill, D.; Abramson, J. E.; Seidler, G. T.; **Cossairt, B. M.*** Probing the stability of Ni2P nanoparticle electrocatalysts via operando benchtop X-ray absorption spectroscopy. *J. Phys. Chem. C* **2025**, *129*, 1165-1172. https://pubs.acs.org/doi/full/10.1021/acs.jpcc.4c07094. ChemRxiv: https://doi.org/10.26434/chemrxiv-2024-j05h7
114. Lowe, C. D.; Larson, H. C.; Cai, Y.; Chiang, H. T.; Pozzo, L. D.; Baneyx, F.; **Cossairt, B. M.*** Induced Chirality in QDs Using Thermoresponsive Elastin-Like Polypeptides. *Langmuir* **2025**, *41*, 1047-1056. https://pubs.acs.org/doi/10.1021/acs.langmuir.4c04339. ChemRxiv: https://doi.org/10.26434/chemrxiv-2024-r17m0
113. Naser, N. Y.; Wixson, W. C.; Larson, H.; **Cossairt, B. M.**; Pozzo, L. D.; Baneyx, F.* Biomimetic Mineralization of Positively Charged Silica Nanoparticles Templated by Thermoresponsive Protein Micelles: Applications to Electrostatic Assembly of Hierarchical and Composite Superstructures. *Soft Matter* **2025**, *21*, 166-178. https://pubs.rsc.org/en/Content/ArticleLanding/2024/SM/D4SM00907J

112. Harvey, S.; DeStefano, J. M.; Chu, J.-H.; Gamelin, D. R.*; Cossairt, B. M.* Understanding the Formation of Colloidal Ferrimagnetic CuCr2Se4 Nanocrystals with Strong Room-Temperature Magnetic Circular Dichroism. *Chem. Mater.* **2024**, *36*, 10746-10757. https://pubs.acs.org/doi/abs/10.1021/acs.chemmater.4c02365 ChemRxiv: https://doi.org/10.26434/chemrxiv-2024-n2ktf

111. Homer, M. K.; Larson, H. C.; Dixon, G. J.; Miura-Stempel, E.; Armstrong, N. R.; **Cossairt, B. M.*** Extremely long-lived charge donor states formed by visible irradiation of quantum dots. *ACS Nano* **2024**, *18*, 24591-24602. https://pubs.acs.org/doi/10.1021/acsnano.4c10526 ChemRxiv: https://doi.org/10.26434/chemrxiv-2024-8wd6z

110. Nguyen, H. A.; Hammel, B. F.; Sharp, D.; Kline, J.; Schwartz, G.; Harvey, S. M.; Nishiwaki, E.; Sandeno, S.; Ginger, D.; Majumdar, A.; Yazdi, S.; Dukovic, G.; Cossairt, B. M.* Colossal Core/Shell CdSe/CdS Quantum Dot Emitters. *ACS Nano* **2024**, *18*, 20726-20739. https://pubs.acs.org/doi/10.1021/acsnano.4c06961. ChemRxiv: https://doi.org/10.26434/chemrxiv-2024-md0hn

109. Miura-Stempel, E.; Oregon, A. G.; De Yoreo, J. J.; Chen, C.-L.; **Cossairt, B. M.*** CeO_2 Nanoparticle Doping as a Probe of Active Site Speciation in the Catalytic Hydrolysis of Organophosphates. *ACS Appl. Nano Mater.* **2024**, *7*, 15498-15507. https://pubs.acs.org/doi/full/10.1021/acsanm.4c02410 ChemRxiv: https://doi.org/10.26434/chemrxiv-2024-m905h

108. Dou, F. Y.; Nishiwaki, E.; Larson, H.; Zion, T.; Nguyen, H. A.; **Cossairt, B. M.*** Pathways of Quantum Dot Degradation during Photocatalysis. *ACS Appl. Nano Mater.* **2024**, *7*, 15781-15785. https://pubs.acs.org/doi/10.1021/acsanm.4c02976 ChemRxiv: https://doi.org/10.26434/chemrxiv-2024-ds99w

107. Nishiwaki, E.; Rice, P. S.; Kuo, D.-Y.; Dou, F. Y.; Pyka, A.; Reid, B.; Nguyen, H. A.; Stuve, E. M.; Raugei, S.; **Cossairt, B. M.*** Active Site Ensembles on Ni_2P Surfaces Tune Electrocatalytic Nitrate Reduction Selectivity. *Chem. Commun.* **2024**, *60*, 6941-6944. https://pubs.rsc.org/en/content/articlelanding/2024/cc/d4cc01834f ChemRxiv: https://doi.org/10.26434/chemrxiv-2024-f69l0

106. Nguyen, H. A.*; Miura-Stempel, E.; Morrison, C.; Dixon, G.; Homer, M.; Dou. F.; Snow, A.; Golder, M.; **Cossairt, B. M.** A Summer Research Program for Community College Students Led by Graduate Students at the University of Washington, *J. Chem. Ed.* **2024**, *101*, 2693-2702, https://doi.org/10.1021/acs.jchemed.3c01277.

105. Sharp, D.; Lin, R.; Nguyen, H.; Manna, A.; Rarick, H.; Munley, C.; Cho, W.; Talapin, D.; **Cossairt, B.M.**; Majumdar, A.* Nanolaser Using Colloidal Quantum Wells Deterministically Integrated on a Nanocavity, *ACS Photonics*, **2024**, *11*, 2465-2470. https://pubs.acs.org/doi/10.1021/acsphotonics.4c00377

104. Ripberger, H. H.; Sandeno, S. F.; Eagle, F. W.; Nguyen, H. A.; **Cossairt, B. M.*** Structure and Reactivity of II-VI and III-V Magic-Sized Clusters: Understanding and Expanding the Scope of Accessible Form and Function. *Acc. Mater. Res.* **2024**, *5*, 726-738. https://pubs.acs.org/doi/10.1021/accountsmr.4c00064

103. Eagle, F. W.; Harvey, S.; Larson, H.; Abbott, A.; Ladd, D.; Levine, K.; Toney, M.; Gamelin, D. R.; **Cossairt, B. M.*** Leveraging Cation Exchange in InP Magic Sized Clusters to Access Coinage Metal Phosphide Nanocrystals. *Chem. Mater.* **2024**, 36, 2888-2897. https://pubs.acs.org/doi/10.1021/acs.chemmater.3c03258 ChemRxiv: https://doi.org/10.26434/chemrxiv-2023-khl9g

102. Sandeno, S. F.; Krajewski, S.; Beck, R. Kaminsky, W.; Li, X.; **Cossairt, B. M.*** Synthesis and Single Crystal X-ray Diffraction Structure of an Indium Arsenide Nanocluster. *ACS Cent. Sci.* **2024**, 10, 744-751. https://pubs.acs.org/doi/10.1021/acscentsci.3c01451 ChemRxiv: https://doi.org/10.26434/chemrxiv-2023-21scg

101. Sandeno, S. F.; Schnitzenbaumer, K. J.; Krajewski, S.; Ladd, D. M.; Leving, K.; Dayton, D.; Toney, M.; Kaminsky, W.; Li, X.; **Cossairt, B. M.*** Ligand Steric Profile Tunes the Reactivity of Indium Phosphide Clusters. *J. Am. Chem. Soc.* **2024**, *146*, 3102-3113. https://pubs.acs.org/doi/10.1021/jacs.3c10203 ChemRxiv: https://doi.org/10.26434/chemrxiv-2023-555vg

100. Ripberger, H. H.; Scnitzenbaumer, K. J.; Nguyen, L. K.; Ladd, D. M.; Levine, K; Dayton, D.; Toney, M.; **Cossairt, B. M.*** Navigating the Potential Energy Surface of CdSe Magic-Sized Clusters: Synthesis and Interconversion of Atomically Precise Nanocrystal Polymorphs. *J. Am. Chem. Soc.* **2023**, *145*, 27480-27492. https://pubs.acs.org/doi/full/10.1021/jacs.3c08897. ChemRxiv: https://doi.org/10.26434/chemrxiv-2023-jzwm3

99. Eagle, F. W.; Harvey, S.; Beck, R.; Li, X.; Gamelin, D. R.; **Cossairt, B. M.*** Enhanced Charge Transfer from Coinage Metal Doped InP Quantum Dots. *ACS Nanosci. Au* **2023**, *3*, 451-461. https://pubs.acs.org/doi/10.1021/acsnanoscienceau.3c00029 ChemRxiv: https://doi.org/10.26434/chemrxiv-2023-7p9vk-v2

98. Klein, M.; Bisted, C.; Dou, F.; Sandwisch, J.; **Cossairt, B. M.**; Khalil, M. Measuring Relative Energies of Ligand Binding Conformations on Nanocluster Surfaces with Temperature-Dependent FTIR Spectroscopy. *J. Phys. Chem C* **2023**, *127*, 16970-16978. https://pubs.acs.org/doi/full/10.1021/acs.jpcc.3c03951

97. Larson, H.; **Cossairt, B. M.*** Indium – Polycarboxylic Acid Ligand Interactions Modify InP QD Nucleation and Growth. *Chem. Mater.* **2023**, 35, 6152-6160. https://pubs.acs.org/doi/full/10.1021/acs.chemmater.3c01309 ChemRxiv: https://doi.org/10.26434/chemrxiv-2023-cz9k2-v2

96. Munley, C.; Manna, A.; Sharp, D.; Choi, M.; Nguyen, H.; **Cossairt, B. M.**; Li, M.; Barnard, A.; Majumdar, A. Visible Wavelength Flatband in a Gallium Phosphide Metasurface. *ACS Photon*. **2023**, *10.1021/acsphotonics.3c00175*. https://pubs.acs.org/doi/full/10.1021/acsphotonics.3c00175 Arxiv: https://doi.org/10.48550/arXiv.2302.03153

95. Nguyen, H. A.; Dixon, G.; Dou, F. Y.; Gallagher, S; Gibbs, S.; Ladd, D.; Marino, E.; Ondry, J.; Shanahan, J.; Vasieleiadou, E.; Barlow, S.; Gamelin, D.; Ginger, D.; Jonas, D.; Kanatzidis, M.; Marder, S.; Morton, D.; Murray, C.; Owen, J.; Talapin, D.; Toney, M.; **Cossairt, B. M.*** Design rules for obtaining narrow luminescence from semiconductors made in solution. *Chem. Rev.* **2023**, 123, 7890-7952. https://pubs.acs.org/doi/full/10.1021/acs.chemrev.3c00097. ChemRxiv: https://doi.org/10.26434/chemrxiv-2023-r3f3x

94. Dou, F. Y.; Harvey, S.; Mason, K.; Homer, M.; Gamelin, D. R.; **Cossairt, B. M.*** Effect of a redox-mediating ligand shell on photocatalysis by CdS quantum dots. *J. Chem. Phys.* **2023**, *158*, 184705. https://pubs.aip.org/aip/jcp/article/158/18/184705/2889496/ ChemRxiv: https://doi.org/10.26434/chemrxiv-2023-63c75

93. Abramson, J.; Holden, W.; Rivera-Maldonado, R.; Velian, A.; **Cossairt, B. M.**; Seidler, G. Laboratory X-ray Emission Spectrometer for Phosphorus Kα and Kβ Study of Air-Sensitive Samples. *J. Anal. Atm. Spectrom.* **2023**, *38*, 1125-1134. https://pubs.rsc.org/en/Content/ArticleLanding/2023/JA/D3JA00053B. ChemRxiv: https://doi.org/10.26434/chemrxiv-2023-8tf0r

92. Park, N.; Beck, R.; Hoang, K.; Ladd, D.; Abramson, J.; Nguyen, H.; Monahan, M.; Seidler, J.; Toney, M.; Li, X.; **Cossairt, B. M.*** Colloidal, Room Temperature Growth of Metal Oxide Shells on InP Quantum Dots. *Inorg. Chem.* **2023**, *62*, 6674-6687. https://pubs.acs.org/doi/10.1021/acs.inorgchem.3c00161. https://doi.org/10.26434/chemrxiv-2022-73k4f

91. Pham, T. K. N.; Bruffey, E.; Nguyen, A. T.; Rivera-Maldonado, R.; Kuo, D.-Y.; **Cossairt, B. M.**; Lee, W.; Severa, G.; Brown, J. Deposition of ultrathin MgB2 films from suspension using co-solvent Marangoni flow. *Langmuir* **2023**, *39*, 3853-3861. https://pubs.acs.org/doi/10.1021/acs.langmuir.2c02933

90. Kuo, D.-Y.; Nishiwaki, E.; Rivera-Maldonado, R.; **Cossairt, B. M.*** The Role of Hydrogen Adsorption Site Diversity in Catalysis on Transition Metal Phosphide Surfaces. *ACS Catal.* **2023**, *13*, 1, 287-295. https://pubs.acs.org/doi/10.1021/acscatal.2c04936. ChemRxiv: https://doi.org/10.26434/chemrxiv-2022-bwnmj

89. Nguyen, H. A.; Sharp, D.; Froch, J. E.; Cai, Y.-Y.; Wu, S.; Monahan, M.; Munley, C.; Manna, A.; Majumdar, A.; Kagan, C. R.; **Cossairt, B. M.*** Deterministic Quantum Light Arrays from Giant Silica-Shelled Quantum Dots. *ACS Appl. Mater. Interfaces* **2023**, *15*, 3, 4294–4302. *Selected for Front Cover. https://pubs.acs.org/doi/10.1021/acsami.2c18475. ChemRxiv: https://doi.org/10.26434/chemrxiv-2022-7m01r

88. Brutchey, R. L.; **Cossairt, B. M.*** Nano(materials) Chemistry: What Belongs at Inorganic Chemistry? *Inorg. Chem.* **2022**, *61*, 33, 12915-12918. https://pubs.acs.org/doi/full/10.1021/acs.inorgchem.2c02691

87. Kuo, D.-Y.; Rice, P. S.; Raugei, S.; **Cossairt, B. M.*** Charge Transfer in Metallocene Intercalated Transition Metal Dichalcogenides. *J. Phys. Chem. C,* **2022**, *126*, 13994-14002. https://pubs.acs.org/doi/10.1021/acs.jpcc.2c03927.

    ChemRxiv: https://doi.org/10.26434/chemrxiv-2022-tvhsr

86. Homer, M. K.; Kuo, D.-Y.; Dou, F. Y.; **Cossairt, B. M.*** Photoinduced charge transfer from quantum dots measured by cyclic voltammetry. *J. Am. Chem. Soc*., **2022**, *144*, 14226-14234. https://pubs.acs.org/doi/full/10.1021/jacs.2c04991.

    ChemRxiv: https://doi.org/10.26434/chemrxiv-2022-727kf

85. Nguyen, H. A.; Dou, F. Y.; Park, N.; Wu, S.; Sarsito, H.; Diakubama, B.; Larson, H.; Nishiwaki, E.; Homer, M.; Cash, M.; **Cossairt, B. M.*** Predicting Indium Phosphide Quantum Dot Properties from Synthetic Procedures Using Machine Learning. *Chem. Mater.,* **2022**, *34*, 6296-6311. https://pubs.acs.org/doi/full/10.1021/acs.chemmater.2c00640.

    ChemRxiv: https://chemrxiv.org/engage/chemrxiv/article-details/621d2ec8011b5834cbb8ad0d

84. Monahan, M.; Homer, M.; Zhang, S.; Zheng, R.; Chen, C.-L.; De Yoreo, J.; **Cossairt, B. M.*** Impact of Nanoparticle Size and Surface Chemistry on Peptoid Self-Assembly. *ACS Nano*, **2022**, *16*, 8095-8106. https://pubs.acs.org/doi/10.1021/acsnano.2c01203.

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83. Park, N.; Friedfeld, M. R.; **Cossairt, B. M.*** Semiconductor Clusters and their Use as Single Source Precursors to Nanomaterials. Book Chapter in Nanomaterials via Single-Source Precursors. Ed. Apblett, A.; Barron, A.; Hepp, A. Elsevier, **2022**. ISBN: 9780128203408.

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82. Huang, Y.; Cohen, T. A.; Sperry, B. M.; Larson, H.; Nguyen, H. A.; Homer, M. K.; Dou, F. Y.; Jacoby, L. M.; **Cossairt, B. M.**; Gamelin, D. R.; Luscombe, C. K. Organic Building Blocks on Inorganic Nanomaterial Interfaces. *Mater. Horiz.* **2022**, *9*, 61-87. https://doi.org/10.1039/d1mh01294k (Materials Horizons Outstanding Review Winner 2022)

81. Chen, Y.; Sharp, D.; Saxena, A.; Nguyen, H.; **Cossairt, B. M.**, and Majumdar, A.* Integrated Quantum Nanophotonics with Solution-Processed Materials. *Adv. Quant. Technol.* **2022**, *5*, 2100078. https://doi.org/10.1002/qute.202100078

80. Kuo, D.-Y.; **Cossairt, B. M.*** Direct Intercalation of MoS_2 and WS_2 Thin Films by Vacuum Filtration. *Mater. Horiz.* **2022**, *9*, 360-367. https://doi.org/10.1039/D1MH01193F

79. Women Scientists at the Forefront of Energy Research: A Virtual Issue, Part 4. *ACS Energy Lett.* **2022**, *7*, 328-342. https://pubs.acs.org/doi/10.1021/acsenergylett.1c02502

78. Murphy, I. A.; Rice, P. S.; Monahan, M.; Zasada, L. P.; Miller, E. M.; Raugei, S.; **Cossairt, B. M.*** Covalent Functionalization of Nickel Phosphide Nanocrystals with Aryl-Diazonium Salts. *Chem. Mater.* **2021**, *33*, 9652-9665. https://doi.org/10.1021/acs.chemmater.1c03255

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77. Park, N.; Eagle, F. W.; DeLarme, A. J.; Monahan, M.; LoCurto, T.; Beck. R.; Li, X.; **Cossairt, B. M.*** Tuning the Interfacial Stoichiometry of InP Core and InP/ZnSe Core/Shell Quantum Dots. *J. Chem. Phys.* **2021**, *155*, pp. https://doi.org/10.1063/5.0060462. ChemRxiv: https://doi.org/10.33774/chemrxiv-2021-vsgdl

76. Eagle, F. W.; Rivera-Maldonado, R. A.; **Cossairt, B. M.*** Surface Chemistry of Metal Phosphide Nanocrystals. *Annu. Rev. Mater. Res.* **2021**, *51*, 541-564. https://doi.org/10.1146/annurev-matsci-080819-011036

75. Johnson, M. C.; **Cossairt, B. M.*** CO_2 Hydrogenation Catalyzed by a Ruthenium Protic N-Heterocyclic Carbene Complex. *Inorg. Chem.* **2021**, *60*, 5996–6003. https://pubs.acs.org/doi/full/10.1021/acs.inorgchem.1c00417

74. Eagle, F. W.; Park, N.; Cash, M.; **Cossairt, B. M.*** Surface Chemistry and Quantum Dot Luminescence: Shell Growth, Atomistic Modification, and Beyond. *ACS Energy Letters*, **2021**, *6*, 997–984. https://pubs.acs.org/doi/10.1021/acsenergylett.0c02697

73. Hanrahan, M. P.; Stein, J. L.; Park, N.; **Cossairt, B. M.***; Rossini, A. J.* Elucidating the Location of Cd2+ in Post-Synthetically Treated InP Quantum Dots using Dynamic Nuclear Polarization 31P and 113Cd Solid-State NMR Spectroscopy. *J. Phys. Chem. C* **2021**, *125*, 2956–2965. https://pubs.acs.org/doi/10.1021/acs.jpcc.0c09601

72. Monahan, M.; Cai, B.; Jian, T.; Zhu, G.; Chen, C.-L.; De Yoreo, J.; **Cossairt, B. M.*** Peptoid-Directed Assembly of CdSe Nanoparticles. *Nanoscale,* **2021**, *13*, 1273–1282. https://pubs.rsc.org/en/content/articlelanding/2021/nr/d0nr07509d#!divAbstract

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68. Mundy, M. E.; Eagle, F. W.; Hughes, K. E.; Gamelin, D. R.; **Cossairt, B. M.*** Synthesis and Spectroscopy of Emissive, Surface-Modified, Copper-Doped Indium Phosphide Nanocrystals. *ACS Mater. Lett*. **2020**, 2, 576–581. https://pubs.acs.org/doi/abs/10.1021/acsmaterialslett.0c00112
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Prior to the University of Washington

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PATENTS

7. Kuo, D.-Y.; Cossairt, B. M. Intercalated Thin Films and Methods for their Preparation and Use. US Patent Application 18/681,477. Filed 02/05/2024. Claims priority to PCT Application No. PCT/US2022/039872 filed August 9, 2022, and Provisional Patent Application No.63/231,668, filed August 10, 2021.

6. Kuo, D.-Y.; Cossairt, B. M. Intercalated Thin Films and Methods for their Preparation and Use. US Patent Application PCT/US2022/039872. Filed 08/09/2022. Claims priority to US Provisional Patent Application 63/231,668.
5. Kuo, D.-Y.; Cossairt, B. M. Intercalated Thin Films and Methods Thereof. US Provisional Patent Application 63/231,668. Filed 08/10/2021.
4. Cossairt, B. M.; Stein, J. L.; Friedfeld, M. R. Indium Phosphorus Quantum Dots, Clusters, and Related Methods. US Patent Application PCT/US2020/014807. Filed 01/23/2020. Claims priority to US Provisional Patent Applications 62/795,952 and 62/927,003.
3. Cossairt, B. M.; Stein, J. L.; Friedfeld, M. R. Indium Phosphide Magic-Sized Clusters to Access Zinc-Alloyed Quantum Dots for Emissive Display Applications. US Provisional Patent Application 62/927,003. Filed 10/28/2019.
2. Chen, Y.; Ryou, A.; Friedfeld, M. R.; Fryett, T.; Whitehead, J.; Cossairt, B. M.; Majumdar, A. Deterministic Positioning of Colloidal Quantum Dots on Silicon Nitride Nanobeam Cavities. US Provisional Patent Application 62/869,967. Filed 07/02/2019.
1. Cossairt, B. M.; Stein, J. L.; Friedfeld, M. R. Dual role of InP Magic-Sized Clusters: Cation Exchange Platform and Single-Source Precursor. US Provisional Patent Application 62/795,952. Filed 01/23/2019.

INVITED PRESENTATIONS

163. Frontiers in Nanotechnology Seminar, Northwestern University, Evanston, IL, May 2025
162. Department of Chemistry, Bartlett Lecture, University of California Berkeley, Berkeley, CA, April 2025
161. Colloidal and Soft Metamaterials (COLL), American Chemical Society National Meeting, San Diego, CA, March 2025
160. Department of Chemistry, University of Southern California, Los Angeles, CA, February 2025
159. Department of Chemistry, Simon Fraser University, January 2025
158. Department of Chemistry, University of British Columbia, January 2025
157. Department of Chemistry, University of Victoria, January 2025
156. Department of Materials Science and Engineering, University of Washington, Seattle, WA, January 2025
155. Department of Chemistry, Harvard University, Cambridge, MA, September 2024
154. Department of Materials Science and Engineering, Cornell University, Ithaca, NY, September 2024
153. EuChemS Chemistry Congress 2024, Dublin, IR, July 2024
152. Department of Physics, University of California Irvine, Irvine, CA, May 2024
151. Department of Chemistry, University of Texas San Antonio, April 2024
150. Informed Design of Quantum Dots and Quantum Dot Assemblies for Energy Applications (PHYS), American Chemical Society National Meeting, New Orleans, LA, March 2024
149. Atomically Precise Nanochemistry Gordon Research Conference, Session Chair, Galveston, TX, February 2024
148. Hawthorne Symposium, Department of Chemistry, University of California Los Angeles, Los Angeles, CA, December 2023
147. Department of Chemistry, Whitman College, Walla Walla, WA, November 2023

146. Inorganic Chemistry Lectureship: Symposium in Honor of Alexandra Velian (INOR), American Chemical Society National Meeting, San Francisco, CA, August 2023
145. Nanomaterials (COLL), American Chemical Society National Meeting, San Francisco, CA, August 2023
144. Tailored Precursor Design for Inorganic Material Synthesis (INOR), American Chemical Society National Meeting, San Francisco, CA, August 2023
143. Institut für Technische Chemie, Universität Stuttgart, Stuttgart, Germany, Virtual, June 2023
142. Department of Chemistry, University of California Riverside, Riverside, CA, May 2023
141. Department of Chemistry, University of Massachusetts Amherst, Amherst, MA, May 2023
140. Department of Chemistry, University of Rochester, Rochester, NY, May 2023
139. Science and Coffee, Osram Opto Semiconductors, Virtual, April 2023
138. Department of Chemistry, Marquette University, Milwaukee, WI, March 2023
137. 2023 M. Frederick Hawthorne Award in Main Group Inorganic Chemistry: Symposium in Honor of Christopher Cummins (INOR), American Chemical Society National Meeting, Indianapolis, IN, March 2023
136. Gordon Research Seminar on Nanomaterials for Applications in Energy Technology (Keynote Speaker), February 2023
135. Department of Chemistry, Notre Dame, February 2023
134. Department of Chemistry, Chemistry Alumni Fund Symposium, Johns Hopkins University, January 2023
133. Gordon Research Conference on Atomically Precise Nanochemistry, Ventura, CA, October 2022
132. 3M NTFA Symposium, Alumni Research Talk, Virtual, September 2022
131. Department of Chemistry, Indiana University, Bloomington, IN, September 2022
130. Inorganic Nanoscience Award – Symposium in Honor of Amy Prieto (INOR), American Chemical Society National Meeting, Chicago, IL, August 2022
129. Summer Undergraduate Research Program, University of Washington, Seattle, WA, July 2022
128. Department of Chemistry, University of Texas at Austin, Austin, TX, May 2022
127. Department of Chemistry, Diversity Lecture in STEM, University of Oregon, Eugene, OR, April 2022
126. Molecular Insight in Materials Catalysis (CATL), American Chemical Society National Meeting, San Diego, CA, March 2022
125. Multimetallic Molecular and Extended Platforms for Energy Applications (INOR), American Chemical Society National Meeting, San Diego, CA, March 2022
124. Excitonic Nanomaterials: Synthesis and Applications, Pacifichem, Virtual, December 2021
123. Main Group Element-Transition Metal Compounds: The Intersection of Molecular and Solid-State Chemistry, Pacifichem, Virtual, December 2021
122. Department of Chemistry, Rice University, Houston, TX, December 2021
121. University of California Davis Inorganic Chemistry Symposium, Davis, CA, November 2021
120. Department of Chemistry, University of Virginia, Virtual Seminar, September 2021
119. Behold the Main Group, and all its Glory, 2021 IUPAC – CCE Meeting, Montreal, Canada, August 2021
118. P-Chemistry Online Seminar Series, July 2021, https://phosphorus-chemistry.weebly.com/
117. 239th Annual Electrochemical Society Meeting, Symposium I03 – Renewable Fuels via Artificial Photosynthesis or Heterocatalysis, May-June 2021

116. nanoGE Summer School on Semiconductor Nanocrystals, May 2021, https://www.nanoge.org/QDsSCHOOL/home
115. American Chemical Society Northwest Regional Meeting, Virtual Seminar, May 2021
114. School of Chemistry and Chemical Engineering, Advances in Colloidal Nanomaterials: Challenges and Opportunities Virtual Lecture Series, Nanjing University, April 2021
113. Gabor A. Somorjai Award; symposium honoring Paul Chirik, American Chemical Society, Spring 2021 National Meeting, April 2021
112. Department of Chemistry, Vanderbilt University, Virtual Seminar, April 2021
111. Department of Chemistry, Purdue University, Virtual Seminar, April 2021
110. ACS Axial Webinar, Changing the Culture of Chemistry: Career Planning and Mentorship, March 2021
109. ACS On Campus Inorganic Chemistry Journal Club, https://www.eventbrite.com/e/acs-journal-club-february-23-tickets-138966629931?aff=website, February 2021
108. Department of Chemistry, University of California – Los Angeles, Virtual Seminar, November 2020
107. Department of Chemistry, Princeton University, Virtual Seminar, November 2020
106. Virtual Panel, Women in Materials, Metallurgy, and Nuclear Engineering, Colorado School of Mines, October 2020
105. Zoom Main Group Symposium: From Molecules to Materials, organized by Professor Alexander Spokoyny (UCLA), https://www.organomimetic.com/zoommaingroup.html, August 2020
104. News in Nanocrystals, Virtual Symposium, jointly organized by University of Colorado Boulder and the Massachusetts Institute of Technology, https://ninc.mit.edu/, August 2020
103. Department of Chemical Sciences and Engineering, École Polytechnique Fédérale de Lausanne, Virtual Seminar, Lausanne, Switzerland, May 2020
102. *Department of Chemistry, Texas A&M University, College Station, TX, April 2020; *cancelled due to COVID-19
101. Department of Chemistry, Penn State University, State College, PA, February 2020
100. Department of Chemistry, University of Chicago, Chicago, IL, January 2020
99. Fundamental Processes in Semiconductor Nanocrystals, nanoGE, Berlin, Germany, November 2019
98. Pauling Medal Symposium in Honor of Catherine Murphy, Oregon State University, Corvallis, OR, October 2019
97. Department of Chemistry, Florida State University, Tallahassee, FL, September 2019
96. Department of Chemistry, University of Florida, Gainesville, FL, September 2019
95. Gordon Research Conference on Crystal Growth & Assembly, Biddeford, ME, June 2019
94. Semiconductor Nanostructures towards Electronic and Opto-Electronic Device Applications VII, Meeting of the European Materials Research Society, Nice, France, May 2019
93. British Columbia Inorganic Discussion Weekend, Keynote Lecture, University of Victoria, British Columbia, Canada, May 2019
92. National Fresenius Award Lecture, 257th American Chemical Society National Meeting, Orlando, FL, April 2019
91. Chemistry of Materials 30th Anniversary Symposium, 257th American Chemical Society National Meeting, Orlando, FL, April 2019

90. ACS Harry Gray Award for Creative Work in Inorganic Chemistry symposium in honor of Jillian Dempsey, 257th American Chemical Society National Meeting, Orlando, FL, April 2019
89. Department of Chemistry, Wayne State University, Detroit, MI, March 2019
88. Department of Chemistry, Colorado State University, Fort Collins, CO, March 2019
87. Department of Chemistry, Northwestern University, Evanston, IL, February 2019
86. Center for Sustainable Nanotechnology, Virtual Seminar, December 2018
85. Solid State Chemistry of Inorganic Materials, Materials Research Society Fall Meeting, Boston, MA, November 2018
84. Department of Chemistry, Cornell University, November 2018
83. Department of Chemistry, Massachusetts Institute of Technology, November 2018
82. Department of Chemistry, Harvard University, Cambridge, MA, November 2018
81. Dreyfus Foundation Teacher-Scholar Symposium, New York, NY, October 2018
80. Department of Chemistry, University of Pittsburgh, Pittsburgh, PA, October 2018
79. Dalton Lecture, Department of Chemistry, University of California, Berkeley, CA, September 2018
78. Women in Nanotechnology (INOR), 256th American Chemical Society National Meeting, Boston, MA, August 2018
77. Synthesis and Characterization of Nanomaterials for Sustainable Energy Applications (MPPG), 256th American Chemical Society National Meeting, Boston, MA, August 2018
76. Enabling Spectroscopies for Nanomaterials (ANYL), 256th American Chemical Society National Meeting, Boston, MA, August 2018
75. Keynote Speaker, NSERC CREATE, University of British Columbia, Vancouver, BC, August 2018
74. Gordon Research Conference on Organometallic Chemistry, Newport, RI, July 2018
73. Polymetallic Assemblies: From Clusters to Molecular Materials (INOR), 101st Canadian Chemistry Conference and Exhibition, Edmonton, Alberta, May 2018
72. Society for Information Display, Display Week 2018, Los Angeles, CA, May 2018
71. 233rd Annual Electrochemical Society Meeting, Seattle, WA, May 2018
70. Department of Chemistry, Stanford University, Stanford, CA, April 2018
69. Nanomaterials (COLL), 255th American Chemical Society National Meeting, New Orleans, LA, March 2018
68. PCET PhotoCatalysis with Inorganic Molecules and Materials (INOR), 255th American Chemical Society National Meeting, New Orleans, LA, March 2018
67. Department of Chemistry, University of Pennsylvania, Philadelphia, PA, March 2018
66. Department of Chemistry, University of Wisconsin–Madison, Madison, WI, February 2018
65. Department of Chemistry, Portland State University, Portland, OR, February 2018
64. Department of Chemistry, Seattle Pacific University, Seattle, WA, January 2018
63. Department of Chemistry, Johns Hopkins University, Baltimore, MD, November 2017
62. Department of Chemistry, Brown University, Providence, RI, October 2017
61. International Conference on Polymers and Advanced Materials (POLYMAT 2017), Huatulco, Oaxaxa, Mexico, October 2017
60. 29th Annual Packard Fellows Meeting, Monterey, CA, September 2017
59. Center for Advanced Solar Photophysics, Los Alamos National Laboratory, NM, August 2017
58. Korean-American Kavli Frontiers of Science Symposium, US National Academy of Sciences & Korean Academy of Science and Technology, Irvine, CA, June 2017
57. Department of Chemistry, California Institute of Technology, Pasadena, CA, June 2017

56. Department of Chemistry, University of California–San Diego, CA, June 2017
55. 3M Science and Engineering Faculty Day, Minneapolis, MN, June 2017
54. Department of Chemistry, University of North Carolina at Chapel Hill, NC, March 2017
53. Department of Chemistry, University of California–Santa Barbara, CA, February 2017
52. Department of Chemistry, University of California–Los Angeles, CA, February 2017
51. Department of Chemistry, University of Colorado–Boulder, CO, February 2017
50. Department of Chemistry, University of Illinois–Urbana-Champaign, IL, January 2017
49. ExxonMobil, Baytown, TX, December 2016
48. Department of Chemistry, Michigan State University, Lansing, MI, November 2016
47. Department of Chemistry, Columbia University, New York, NY, November 2016
46. Department of Chemistry, Princeton University, Princeton, NJ, November 2016
45. Department of Chemistry, University of California–Irvine, CA, October 2016
44. Department of Chemistry, University of Southern California, Los Angeles, CA, October 2016
43. Resnick Sustainability Institute, California Institute of Technology, Pasadena, CA, September 2016
42. 28th Annual Packard Fellows Meeting, Monterey, CA, September 2016
41. DIC Young Investigator Awardees: Where are they now? (INOR), 252nd American Chemical Society National Meeting, Philadelphia, PA, August 2016
40. Metal and Semiconductor Nanoclusters with Atomic Precision: Fundamentals and Applications (PHYS), 252nd American Chemical Society National Meeting, Philadelphia, PA, August 2016
39. Gordon Research Conference on Colloidal Semiconductor Nanostructures, Mount Snow, VT, July-August 2016
38. American Chemical Society Northwest Regional Meeting, Anchorage, AK, June 2016
37. Gordon Research Conference on Inorganic Chemistry, Biddeford, ME, June 2016
36. Applied Physics Laboratory, University of Washington, Seattle, WA, May 2016
35. Department of Chemistry, Iowa State University, Ames, IA, April 2016
34. ACS Award in Pure Chemistry symposium in honor of Jonathan Owen (INOR), 251st American Chemical Society National Meeting, San Diego, CA, March 2016
33. ACS Award in Organometallic Chemistry symposium in honor of Karen Goldberg (INOR), 251st American Chemical Society National Meeting, San Diego, CA, March 2016
32. The Quantum Dots Forum, Newport Beach, CA, March 2016
31. Center for Chemical Innovation (CCI-Solar) Annual Meeting, Newport Beach, CA, February 2016
30. The Art Institutes of Seattle, Winter Lecture Series, Seattle, WA, February 2016
29. Dow Chemical, Shipley Seminar Series, Marlborough, MA, December 2015
28. 3M, Minneapolis, MN, November 2015
27. Department of Chemistry, Western Washington University, Bellingham, WA, November 2015
26. Inorganic Chemistry Lectureship Symposium in honor of Daniel Gamelin (INOR), 250th American Chemical Society National Meeting, Boston, MA, August 2015
25. Board of Regents meeting, University of Washington, Seattle, WA, May 2015
24. NanoLytica 2015, Simon Fraser University, Burnaby, BC, Canada, April 2015
23. Department of Chemistry, Eastern Washington University, Cheney, WA, April 2015
22. From Molecules to Colloidal Compound Semiconductor Nanocrystals: Advances in Mechanism-Enabled Design & Syntheses, Materials Research Society Meeting, San Francisco, April 2015

21. New Catalysis Through Ligand Design (CATL), 249th American Chemical Society National Meeting, Denver, CO, March 2015
20. Design Principles for Functional Macromolecular Materials (PMSE), 249th American Chemical Society National Meeting, Denver, CO, March 2015
19. Gordon Research Conference on Inorganic Reaction Mechanisms, Galveston, TX, March 2015
18. Department of Material Science & Engineering, University of Washington, Seattle, February 2015
17. Department of Chemistry, Pacific Lutheran University, Tacoma, WA, September 2014
16. International Conference on Energy Conversion & Storage (ORCAS), Friday Harbor, WA, September 2014
15. The Chemistry of Inorganic Nanocrystals & Clusters: Structural Characterization & Mechanisms of Growth (INOR), 248th American Chemical Society National Meeting, San Francisco, CA, August 2014
14. Pacific Science Center Science Café, Kirkland, WA, November 2013 *(online video of talk)*
13. Women in Chemical Sciences, University of Washington, Seattle, WA, November 2012

Prior to the University of Washington

12. 238th American Chemical Society National Meeting (INOR), Washington, D.C., August 2009
11. Department of Chemistry, Stanford University, Stanford, CA, January 2012
10. Department of Chemistry, University of Chicago, Chicago, IL, January 2012
9. Department of Chemistry, Barnard College, New York City, NY, January 2012
8. Department of Chemistry & Chemical Biology, Harvard University, Cambridge, MA, December 2011
7. Department of Chemistry, Princeton University, Princeton, NJ, December 2011
6. Department of Chemistry, Yale University, New Haven, CT, December 2011
5. Department of Chemistry, University of Washington, Seattle, WA, December 2011
4. Department of Chemistry, University of California Irvine, Irvine, CA, December 2011
3. Department of Chemistry, University of Southern California, Los Angeles, CA, November 2011
2. Department of Chemistry, Northwestern University, Evanston, IL, November 2011
1. Department of Chemistry, Harvey Mudd College, Claremont, CA, November 2011

CONTRIBUTED PRESENTATIONS

12. Gordon Research Conference on Colloidal Semiconductor Nanocrystals, Smithfield, RI, July 2014
11. Gordon Research Conference on Inorganic Chemistry, Biddeford, ME, June 2014
10. 246th American Chemical Society National Meeting (INOR), Indianapolis, IN, September 2013
9. Gordon Research Conference on Clusters, Nanocrystals & Nanostructures, South Hadley, MA, August 2013
8. 245th American Chemical Society National Meeting (INOR), New Orleans, LA, April 2013

Prior to the University of Washington

7. 243rd American Chemical Society National Meeting (INOR), San Diego, CA, March 2012
6. Gordon Research Conference on Inorganic Chemistry, Biddeford, ME, June 2012
5. Gordon Research Conference on Clusters, Nanocrystals & Nanostructures, South Hadley, MA, July 2011
4. 241st American Chemical Society National Meeting (INOR), Anaheim, CA, March 2011
3. Gordon Research Conference and Seminar on Organometallic Chemistry, Newport, RI, July 2009

2. 235th American Chemical Society National Meeting (INOR), New Orleans, LA, April 2008
1. 234th American Chemical Society National Meeting (INOR), Boston, MA, August 2007

GRANT ACTIVITY

Current

National Science Foundation (co-PI, PI: David Ginger) 9/2021–8/2026 $25,000,000
STC: Center for Integration of Modern Optoelectronic Materials on Demand *(Cossairt: $750,000)*

National Science Foundation (PI) 7/2021–6/2024 $465,556
Mechanistic Discovery for Materials Synthesis Across Scales using Atomically Precise Cluster Building Blocks

Department of Energy (co-PI, PI: Munira Khalil) 9/2020-8/2024 $590,957
Measuring Vibronic Coupling and Ultrafast Charge Delocalization on Nanocrystal Surfaces Using Ligand-Specific Vibrational Probes *(Cossairt: $180,000)*

National Science Foundation (co-PI, PI: Kai-Mei Fu) 9/2020-8/2025 $3,000,000
NRT-QL: Accelerating Quantum-Enabled Technologies *(Student training grant)*

National Science Foundation (co-PI, PI: Arka Majumdar) 9/2019–8/2024 $1,500,000
QII-TAQS: Strongly Interacting Photons in Coupled Cavity Arrays: A Platform for Quantum Many-Body Simulations *(Cossairt: $375,000)*

Department of Energy (co-PI, PI: François Baneyx) 8/2018–7/2026 $20,000,000
The Center for the Science of Synthesis Across Scales *(Cossairt: $900,000)*

National Science Foundation (co-PI, PI: Daniel Gamelin) 9/2017–8/2029 $26,000,000
MRSEC: University of Washington Molecular Engineering Materials Center *(Cossairt: $1,200,000)*

Completed

Defense Threat Reduction Agency (co-PI, PI: Chun-Long Chen) 12/2021–12/2023 $1,000,000
Ultrathin and programmable nanoparticle-peptoid composite nanomembranes for molecular recognition, catalysis, and selective transport *(Cossairt: $125,000)*

Department of Energy (co-PI, PI: Morris Bullock) 8/2018–7/2024 $13,000,000
The Center for Molecular Electrocatalysis *(Cossairt: $600,000)*

National Science Foundation (co-PI, PI: Gerald Seidler) 9/2019–12/2023 $377,000
Instrument Development: In Operando Capability for Benchtop X-ray Emission Spectroscopy *(Cossairt: $135,000)*

Camille Dreyfus Teacher-Scholar Award (PI) 4/2017–4/2022 $75,000
The Synthetic Inorganic Chemistry of Sustainable Technologies

National Science Foundation (PI) 2/2016–7/2021 $680,835
CAREER: New Models for Controlling InP Nucleation, Growth, and Luminescence using Magic-Sized Clusters and Targeted Surface Chemistry

Packard Fellowship for Science and Engineering (PI) 11/2015–10/2020 $875,000
Understanding Nucleation, Growth and Energy Transduction in Colloidal Nanoscale Systems: Inorganic Synthesis for a Sustainable Energy Future

National Science Foundation (co-PI, PI: Arka Majumdar) 9/2018–9/2020 $300,000
QLC: EAGER: Quantum Simulation using Solution Processed Quantum Dots *(Cossairt: $150,000)*

Cottrell Scholars Collaborative PUI-R1 (co-PI, PI: Mark Bussell) 5/2019–4/2020 $1,000
Efficient and Practical Solar Fuels Production Using Earth Abundant Materials

JCDREAM Seed Funding (co-PI, PI: Mark Bussell) 5/2019–6/2019 $10,200
Exchange Visits and Preliminary Research to Explore the Potential for a New Collaboration in Efficient and Practical Solar Fuels Production Using Earth Abundant Materials

NW Impact (co-PI, PI: Chunlong Chen) 6/2018–5/2019 $200,000
Engineering Sequence-Defined Polymers for Controlled Formation of Hybrid Materials *(Cossairt: $50K)*

Merck Performance Materials (PI) 12/2017–12/2018 $104,283
The Introduction of Heteroatoms into InP MSCs for the Formation of Alloyed Nanocrystal Structures

3M Non-Tenured Faculty Award (PI) 3/2015–2/2018 $45,000
Luminescent InP Quantum Dots for Photoluminescence Down-Conversion Technologies

Sloan Research Fellowship (PI) 9/2015–9/2017 $50,000
The Synthetic Inorganic Chemistry of Sustainable Technologies

UW Innovation Award (PI) 5/2014–4/2017 $500,000
Innovations in Quantum Dot Chemistry for Solar Energy Production and Storage

ACS Petroleum Research Fund (PI) 9/2014–8/2016 $110,000
Homogeneous Bimetallic Systems for Syngas Conversion

Clean Energy Institute Student Training & Exploration (PI) 12/2014–6/2015 $34,000
Solution Processable GaAs Thin Films

UW Royalty Research Fund (PI) 9/2013–8/2014 $37,000
Role of Acid in InP-QD Precursor Conversion Reactions and New Strategies for Improved Crystallization

PROFESSIONAL ACTIVITIES

Consultancies and Industrial Collaborations

Expert Witness (QD patent matters – Nanoco via Mintz Levin/Caldwell Group)
January 2020–January 2023
https://www.reuters.com/legal/litigation/samsung-nanoco-settle-patent-dispute-over-led-tvs-just-before-trial-2023-01-06/ ; https://www.reuters.com/legal/samsung-led-settlement-worth-150-million-nanotech-firm-says-2023-02-03/

Expert Consultant (QD patent matters – Nanosys via Sterne Kessler) 2019–2020
Research Consultant, Merck Electronic Materials 2016–2019
Research Consultant, QD Vision 2013–2014

Society and Research Center Leadership, Scientific Advisory and Editorial Boards

ACS National Fresenius Award Committee 2024–Present
#RSCPoster Inorganic Subject Chair 2024
Associate Director of Research and Research Theme Lead, Center for Integration of Modern Optoelectronic Materials on Demand (IMOD), NSF STC September 2021–Present
Thrust Lead, Center for the Science of Synthesis Across Scales (CSSAS), DOE EFRC
August 2022–Present
Editorial Advisory Board, *Accounts of Chemical Research* (ACS) January 2022–Present
Editorial Advisory Board, *Materials Horizons* (RSC) December 2020–Present
Editorial Advisory Board, *Chemistry of Materials* (ACS) October 2020–Present
Editorial Advisory Board, *SCIENCE CHINA Chemistry* (Springer) January 2019–Present

Associate Editor, *Inorganic Chemistry* (ACS)	January 2018–Present
National Web Editor, Phi Lambda Upsilon Honor Society	2015–Present
Founder and Executive Board Member, Chemistry Women Mentorship Network	2014–Present
ACS COLL Victor K. LaMer Award Committee (3Y Term)	2019–2022
Editorial Advisory Board, ACS In Focus (Primer Series)	2018
Nanoscience Subdivision Chair, ACS Division of Inorganic Chemistry	2017–2018
Nanoscience Subdivision Chair-Elect, ACS Division of Inorganic Chemistry	2016–2017
External Consultant for Inorganic Faculty Hiring, Carroll College	2016–2017
Programming Committee, Society for Information Display (SID)	2016–2018
Scientific Advisory Board, NSF Center for Chemical Innovation (CCI Solar)	2016–2019
Alumni Committee on Community & Equity, Massachusetts Institute of Technology	2016–2019

Conference, Symposium, and Seminar Organization

Materials Research Society (MRS), SF-08: Achieving and Exploiting Complexity Through the Synthesis and Application of Hybrid Hierarchical Materials, (with Akif Tezcan, Oleg Gang, and Chris Mundy), April 2025

Colloidal Semiconductor Nanocrystals Gordon Research Conference, Vice Chair Elect (with Raffaella Buonsanti), 2022-2026

NanoGE, NCFun21: Fundamental Processes in Nanocrystals and 2D Materials, with Jonathan De Roo, Barcelona, Spain, October 2021

European Materials Research Society (E-MRS), Scientific Review Committee for Semiconductor Nanostructures toward Electronic and Optoelectronic Device Applications, 2020

Nanocrystals Northwest, with Daniel Gamelin, Pack Forest, WA, Summer 2019, 2021, 2023

Chemistry at the Interface of Solution-Processed Inorganic Materials, with Andrew Greytak (USC), 257th American Chemical Society National Meeting, Orlando, FL, March 2019

International Conference on Energy Conversion & Storage (ORCAS), with Vincent Holmberg (UW MSE), Friday Harbor, WA, September 2018

Soluble Inorganic Semiconductors: Synthesis, Properties & Applications symposium with Richard Brutchey (USC), 249th American Chemical Society National Meeting, Denver, CO, March 2015

Chemistry & Policy: Solving Problems at the Interface symposium (via MIT Graduate Student Symposium Planning Committee), 240th ACS National Meeting, Boston, MA, August 2010

Metals in Synthesis seminar series co-coordinator, Massachusetts Institute of Technology (2008–2010)

Funding Agency Review Panels and Ad-Hoc Reviewing

DOE Basic Energy Sciences ECRP	2024
National Science Foundation DMR SSMC (PO Robert Meulenberg)	2024
Swiss National Science Foundation	2024
NSF CCI, Phase II (PO Katharine Covert)	2023
National Science Foundation MSN Nanochemistry (PO Suk-Wah Tam-Chang)	2019, 2023, 2024
US-Israel Binational Science Foundation (PO Anton Post)	2023
NSF MPS Ascend Postdoctoral Fellowship (PO Robert W. Meulenberg)	2022
DOE Office of Science Graduate Student Research Program (PO Raul Miranda)	2022
European Research Council Starting, Consolidator, Advanced, and Synergy Grants	2020
National Science Foundation CAT CAREER Heterogeneous (PO Kenneth Moloy)	2020
Department of Energy BES CS (PO Viviane Schwartz and Chris Bradley)	2019, 2020
National Science Foundation DMR SSMC (PO Catherine Oertel)	2019
Serrapilheira Foundation (Brazil), Phase 2 and 3 Reviews (PO Bradley Olsen, MIT)	2019, 2020
National Science Foundation CHE Chemical Synthesis (PO John Gilje)	2019
National Science Foundation GRFP	2015

National Science Foundation/EPA NSMDS Catalysis (PO Carol Bessel) 2013
ACS Petroleum Research Fund ND and DNI (PO Nancy Jensen) 2013–Present

Journal Reviews

Chemistry of Materials
Journal of the American Chemical Society
Science
Nature Materials
Nature Chemistry
ACS Nano
Nano Letters
ACS Applied Materials and Interfaces
Journal of Physical Chemistry Letters
Journal of Physical Chemistry C
Chemical Science
Chemical Reviews
Inorganic Chemistry
Organometallics
ACS Omega
Nanoscale
Small
Angewandte Chemie International Edition
PNAS
ACS Catalysis
Molecules

Professional Memberships

American Association for the Advancement of Science 2016–present
Phi Lambda Upsilon 2014–present
Materials Research Society 2013–present
American Chemical Society 2006–present
Society for Information Display 2016–2018

University Service

Provost Committee Reviewing Dean Nancy Albritton (College of Engineering) 2024–2025
NW IMPACT Re-envisioning Committee 2024–present
Department of Physics Chair Search Committee 2024
Chemical Engineering Mentoring Committee for Julie Rorrer 2023–present
UW Royalty Research Fund Physical Sciences and Engineering Subcommittee 2022–2024
UW Faculty Council on Research 2019–present
Clean Energy Institute Faculty Advisory Board 2017–present
QIST Cluster Hire Committee for Materials Science & Engineering 2021–2022
CEI WRF Innovation Fellows Review Committee 2017
Center for Advanced Materials and Clean Energy Technology Design Group 2016
Reviewer for Mary Gates Scholar Fellowships 2015, 2017, 2024

Chemistry Department Service

Chair, PhD Mentoring and Training Committee 2023–Present
Academic Personnel Committee 2022–Present
Executive Committee 2022–Present
Chair, Diversity and Equity Steering Committee 2018–2023
Diversity and Equity Steering Committee 2015–2023
Faculty Counselor, Phi Lambda Upsilon Honor Society (UW Epsilon Chapter) 2014–Present
Faculty Counselor, Inclusion in Chemical Sciences (InCS-UW) student group 2013–Present
Faculty Search Committee 2016–2017, 2018–2019, 2020–2021, 2021-2022
Awards Committee 2019–2020
Graduation Ceremony 2016, 2018, 2019
Inorganic Seminar Coordinator 2014–2015, 2017–2018, 2022-2023
Undergraduate Graduation Speaker Audition Panel 2014, 2016–2019, 2022, 2023
Awards Dinner Speaker 2013, 2016

Graduate Admissions Committee 2012–2019
Graduate Recruiting Committee 2012–2018

External PhD Exam Committees
Ana Sonea, Simon Fraser University (PI Prof. Jeffrey Warren) June 2024
Aniket Mule, ETH Zurich (PI Prof. David Norris) February 2022

UW Graduate Student Exam Committees
Doctoral Supervisory Committees 2012–present
2012: Tristan Tronic, Patrick Whitham, Elizabeth Strein, Peter Johnston; **2013:** Kelli Ogawa, Carolyn Valdez, Gerard Carroll, Miles Braten, Charles Barrows, Hirokazu Nagaoka; **2014:** Tyler Stevens, Wilson Bailey, Benjamin Leipzig, Adam Colbert, Erica Chong, Alina Schimpf, Jonathan Goldberg, Sarah Vorpahl, Zachary Fox, Dane De Quilettes, Heidi Nelson, Kimberly Hartstein; **2015:** Marie Clement, Laura Pascual; **2016:** Sophia Tran, Karena Smoll, Laura Murphy, Travis Lekich, Trevor Martin, Julian Rees, Benjamin Leipzig, Spencer Williams, Jeffrey Buenaflor; **2017:** Maksym Dedushko, Maike Blakely, Braden Zahora, Michael De Siena, Kira Hughes, Jose Araujo; **2018:** Emily Rabe, Tyler Milstein, Alex Downing, Dylan Rogers, Ryan Beck; **2019:** Elliot Beutler, Anna Merkylova, Abbie Ganas, Jason Sandwisch, Madison Monahan, Erin Jedlicka, Joo Yeon Roh, Kyle Kluherz; **2020:** Jessica Kong, Jonathan Kephart, Timothy Pollock, Alexis Mills; **2021:** Alexis Mills, Maria Greiner, Emma Cave, Benjamin Mitchell; **2022:** Kendahl Walz Mitra, Lauren Koulias, Kelly Walsh, Leo Zasada, Jack Geary, Margherita Taddei, Kathleen Snook, Praise Anyanwu, Daniel Zhou, Sebastian Krajewski; **2023:** Eden Tzanetopoulos, Farhad Akrami, Matthew Chang, Casey Bisted, Devin Rollins; **2024:** Austin Nixon; Rachel Tenney Smith; Duncan Reece, Chaman Gupta (MSE), Chris Woodburn, Douglas Baumgardner, Yifeng Cai (ChemE), Mitchell Kaiser, Jessica Kline, Thom Snoeren, Phuong Le, Shaun Gallagher, Rowina Bell, Andrei Draguicevic, Zhaoyuan Yang
University Graduate School Representative 2015–present
2015: Julieta Gruszko (Physics); **2016:** Olivia Lenz (MSE), Trevor Martin (MSE), Spencer Williams (MSE); **2018:** Elena Pandres (ChemE), Joshua Sanchez (Physics), Ryan Kastilani (MSE); **2019:** Guomin Zhou (MSE), Sarah Alamdari (ChemE); **2020:** Yao Long (ECE); **2021**: Soohyung Lee (ChemE), Jinrong Ma (MolES), Yuhang Yang (MSE); **2022:** Vasileios Niaouris (Physics), Chris Munley (ECE), Christian Pedersen (Physics); **2023:** Ying Xia (MSE); Nada Naser (MSE); **2024:** Jared Abramson (Physics), Arnab Manna (Physics), Ryan Gharios (Chemical Engineering), Renyu Zheng (MolES), Duncan Reece (ChemE), Kalyn Torkelson (ChemE), Robert Pecoraro (Physics), Helen Chen (Physics), Rishabh Sanghavi (ChemE), Marlo Zorman (MolES), Anthony Gironda (MSE), Anna Okounkova (Physics), Maddie Soltani (ChemE); **2025:** Rithi Anandwade (Physics), Ethan Hansen (Physics)
Chemistry Second-Year Exam Committees 2012–present
2013: Bennett Smith, Charles Barrows, Hirokazu Nagaoka, Marie Clement; **2014:** Michael Pegis, Sarah Vorpahl, Jonathan Goldberg, Kimberly Hartstein; **2015:** Laura Murphy, Timothy Pollock, Michael De Siena; **2016:** Karena Smoll, Travis Lekich, Maksym Dedushko, Jeffrey Buenaflor, Maike Blakely, Braden Zahora; **2017:** Kira Hughes, Christian Erickson, Michael De Siena, Chaau Yan (Penny) Poon, Jose Araujo; **2018:** Emily Rabe, Alexandra Downing, Tyler Milstein, Dylan Rogers, Tianyi Zheng; **2019:** Maria Greiner, Jonathan Kephart, Yukako Sakasaki, Julian Smith-Jones; **2020:** Kendahl Walz, Kelly Walsh, Bennet Karel, Paige Gannon; **2021:** Casey Bisted, Jack Geary, Leo Porter-Zasada; **2022:** Austin Nixon, Eden Tzanetopoulos, Chris Lowe, Daniel Zhou, Kathleen Snook, Sebastian Krajewski; **2023**: Rachel Tenney, Andrei Draguicevic, Phuong Le, Thom Snoeren, Devin Rollins, Jessica Kline, Chaman Gupta (MSE); **2024:** Jay Lee, Sophie Song, Kinsey Drake; **2025:** Hailey Akins, Lucy Miller, Nicolas Nguyen
M.S. Defense Committees
2024: Qizheng Yang (MSACST, Chemistry); Francis Zhang (MSACST, Chemistry)

TEACHING

Primary Teaching Assignments by Quarter (Adjusted Median Scores on a 5.0 point scale)
CHEM 165: Honors General Chemistry (Undergraduate)

	SP16	SP17	SP18	SP19
# student respondents	*35/36*	*47/47*	*46/49*	*31/41*
Course as a whole was:	5.0	4.9	5.0	4.7
Course content was:	5.0	4.8	5.0	4.7
Instructor's contribution to course:	5.2	5.0	4.9	5.0
Instructor's effectiveness at teaching:	5.0	4.9	5.1	4.6
Combined items above:	5.0	4.9	5.0	4.8

CHEM 312: Inorganic Chemistry (Undergraduate)
**Virtual Format*

	WI21*	AU23	AU24
# student respondents	*51/99*	*41/93*	*82/111*
Course as a whole was:	4.2	4.7	4.6
Course content was:	4.3	4.7	4.6
Instructor's contribution to course:	4.6	4.8	5.0
Instructor's effectiveness at teaching:	4.6	4.9	4.9
Combined items above:	4.4	4.8	4.8

CHEM 416: Transition Metals (Undergraduate)
CHEM 516: Transition Metals (Graduate)
**Virtual Format*

	AU12	AU13	AU14	AU19	AU20*
# student respondents	*37/42*	*45/58*	*49/59*	*16/27*	*36/47*
Course as a whole was:	4.6	4.4	4.8	4.6	4.7
Course content was:	4.6	4.4	4.7	4.6	4.6
Instructor's contribution to course:	4.9	4.8	4.8	4.8	4.5
Instructor's effectiveness at teaching:	4.6	4.6	4.8	4.7	4.8
Combined items above:	4.7	4.6	4.8	4.7	4.7

CHEM 416: Transition Metals (Undergraduate)
CHEM 516: Transition Metals (Graduate)

	AU21
# student respondents	*25/57*
Course as a whole was:	4.4
Course content was:	4.4
Instructor's contribution to course:	4.7
Instructor's effectiveness at teaching:	4.5
Combined items above:	4.5

CHEM 466 / MSE 466 / ChemE 440: Energy Materials, Devices, and Systems (Undergraduate)
CHEM 566 / MSE 566 / ChemE 540: Energy Materials, Devices, and Systems (Graduate)

	AU17	AU18
# student respondents	*10/14*	*8/15 & 10/15*
Course as a whole was:	4.3	4.8 / 4.1
Course content was:	4.4	4.8 / 4.8
Instructor's contribution to course:	3.8	4.7 / 4.6
Instructor's effectiveness at teaching:	3.8	4.7 / 4.6
Combined items above:	4.1	4.8 / 4.6

CHEM 484: Materials Chemistry (Undergraduate)
CHEM 510: Current Problems in Inorganic Chemistry–Materials Chemistry (Graduate)

	SP13	SP14
# student respondents	*25/30*	*44/63*
Course as a whole was:	4.8	4.6
Course content was:	4.8	4.5
Instructor's contribution to course:	4.9	4.6
Instructor's effectiveness at teaching:	4.8	4.5
Combined items above:	4.9	4.6

CHEM 485: Electronic Structure and Application of Materials (Undergraduate)
CHEM 585: Electronic Structure and Application of Materials (Graduate)

	WI15	WI16	WI17
# student respondents	*25/25*	*27/31*	*17/19*
Course as a whole was:	4.9	4.5	4.9
Course content was:	4.8	4.6	4.9
Instructor's contribution to course:	4.9	4.8	5.0
Instructor's effectiveness at teaching:	4.9	4.2	4.9
Combined items above:	4.9	4.5	4.9

CHEM/MSE 561: Introduction to Quantum Information for Chemists and Materials Scientists (Graduate)
*AU22 co-taught with Prof. Peter Pauzauskie (MSE)

	AU22*	AU23
# student respondents	*10/15*	*10/18*
Course as a whole was:	4.3	4.6
Course content was:	4.1	4.5
Instructor's contribution to course:	4.5	4.8
Instructor's effectiveness at teaching:	4.4	4.8
Combined items above:	4.3	4.7

Additional University of Washington Teaching Activities
CHEM 416: Transition Metals (Undergraduate): co-taught course in Autumn 2015
CHEM 500: Grant Proposal and Scientific Writing: Autumn 2016, Autumn 2017

Other Teaching Experience
Teaching Assistant, Massachusetts Institute of Technology 2006–2010
Principles of Chemical Science, *Principles of Inorganic Chemistry II*, *Principles of Inorganic Chemistry III*
Teaching College-level Science (5.95J; graduate course), Massachusetts Institute of Technology 2009

RESEARCH MENTORING

Current Ph.D. Students

Catie Bodinger	December 2025–Present
Elise Skytte	December 2025–Present
Emma Coester	August 2023–Present (MS to PhD transition)
Reed Worland	January 2024–Present

Pedro Pliego	January 2024–Present
Ezra Bacon-Gershman	January 2024–Present
Christopher Lowe	November 2022–Present
Grant Dixon	January 2022–Present
Emily Miura-Stempel	January 2022–Present
Soren Sandeno	January 2022–Present
Helen Larson	February 2021–Present
Emily Nishiwaki	February 2021–Present
Hao Nguyen	February 2021–Present

Current M.S. Students

Ratul Mangal	September 2024–Present
Abraham Varughese	September 2024–Present

Current Postdoctoral Researchers

Dr. Samantha Harvey (w/ Gamelin)	October 2021–Present

Current Undergraduate Students

Izzy O'Reilly	May 2024–Present
Quinn Brouhle	September 2024–Present
Vijay Lin	September 2024–Present
Colin McKenna	September 2024–Present
Jessie Chang	September 2024–Present
Alle Sorensen	September 2024–Present
Yinuo Xu	September 2024–Present

Current Undergraduate Students - Independent Reading

Samantha Grover	December 2024–Present
Nathan Nmedisky	December 2024–Present

Graduated Ph.D. Students

Ricardo Rivera-Maldonado December 2019–December 2025
Dissertation: *Probing the Stability of Nickel Phosphide Nanoparticle Electrocatalysts via Advanced Benchtop X-ray Spectroscopy*

Micaela Homer December 2019–May 2024
Dissertation: *Photoinduced Charge Transfer from Quantum Dots on the Timescale of Chemistry*

Forrest Eagle December 2018–January 2024
Dissertation: *Turning InP nanocrystals up to 11: Coinage Metal Cation Exchange in InP Nanocrystals*

Florence Dou December 2018–November 2023
Dissertation: *Designing Quantum Dot Interfaces for Photoredox Catalysis*

Nayon Park December 2017–August 2022
Dissertation: *Tuning the Photoluminescence Properties of Indium Phosphide Quantum Dots Through Atomistic Surface Chemistry*

Madison Monahan (w/ De Yoreo) December 2017–June 2022
Dissertation: *Design principles for cadmium chalcogenide nanoparticle assembly via peptoids*

Mary Cecilia Johnson December 2016–December 2021
Dissertation: *Examining Metal-Ligand and Metal-Metal Cooperativity in Ruthenium (II) bis-(Protic N-Heterocyclic Carbene) Phosphine Complexes for CO_2 and Related Substrate Transformations*

Ian Murphy September 2018–August 2021
Dissertation: *Surface Functionalization of Electrode Materials with Aryl-Diazonium Salts: Influence on Electronic Structure and Electrochemical Reactivity*

Andrew Ritchhart December 2015–August 2020
Dissertation: *Quantitative Analysis and Modification of Colloidal Nanoparticle Surfaces and Structures*

David Ung December 2014–March 2020
Dissertation: *Designing the Interface of Transition Metal Phosphides for Electrocatalysis*

M. Elizabeth Mundy December 2014–March 2020
Dissertation: *Aminophosphines as Precursors for Doped and Phase Pure Metal Phosphide Nanocrystals: Synthesis Beyond $P(SiMe_3)_3$*

Kira Hughes (w/ Gamelin) September 2018–August 2019
Dissertation: *Exploring the Photophysics of Engineered and Intrinsic Charge-Carrier Trapping Processes in Semiconductor Nanocrystals*

Michael Enright July 2014–June 2019
Dissertation: *Synthesis of Colloidal Semiconductor Heterostructures*

Jennifer Stein July 2013–August 2018
Dissertation: *Scratching the Surface of Colloidal InP Nanoparticles: Tuning the Physical and Electronic Structure through Surface Chemistry*

Danielle A. Henckel July 2012–March 2018
Dissertation: *Photo and Electrochemical Investigations of Solution Processable Molecules and Materials for the Hydrogen Evolution Reaction*

Sarah E. Flowers December 2012–December 2017
Dissertation: *Preparation, Characterization, and Reactivity of Ruthenium Protic N-Heterocyclic Carbene Complexes*

Benjamin A. Glassy July 2012–July 2017
Dissertation: *The Role of Precursor Chemistry in the Nucleation and Growth of Zinc Pnictide Based Semiconductor Quantum Dots*

Dylan C. Gary July 2012–August 2016
Dissertation: *Investigation of the Nucleation and Growth of Colloidal Indium Phosphide: From Molecular Precursors to Semiconductor Nanocrystals through $In_{37}P_{20}(O_2CR)_{51}$ as a Magic-Sized Intermediate*

Former M.S. Students

Michaela Gustaitis	January 2023–March 2024
Eugene Ham	September 2023–December 2023
Qusai Alsabia	March 2023–October 2023
Mashroor Elahi Raiyan	September 2021–June 2023
Sarah Helland	January 2022–December 2022
McKenna Troje	December 2020–June 2021
Tyler Robison	December 2017–December 2018
A. Coleman Schwartz	December 2013–December 2015

Former Postdoctoral Researchers

Dr. Hunter Ripberger	November 2021–October 2025	
Dr. Ding-Yuan Kuo	November 2019–March 2023	ASML
Dr. Max R. Friedfeld	August 2016–November 2021	UAW4121
Dr. Daniel Kroupa	October 2017–September 2018	BlueDot Photonics

Dr. Michael R. Norris	August 2013–July 2016	Assistant Prof, University of Richmond

Former Undergraduate Students

Jediah Thomas	June 2024-August 2024 (IMOD REU, Howard U)
Jamie Chin	June 2024-August 2024 (MEMC REU, Chapman U)
Lucius Carr	June 2024-August 2024 (SCROCCS, Pierce College)
Abraham Varughese	September 2022–June 2024
Tallie Zion	September 2022–June 2024
Kyle Hucko	August 2023–March 2024
Ashley Oregon	June 2023–March 2024 (Highline College SCROCCS, UW)
Lily Nguyen	June 2022–December 2023 (LSAMP Scholar)
Autumn Abbott	June 2023–August 2023 (MEMC REU, U Minnesota-Twin Cities)
Qarsim Aslam	June 2023–August 2023 (IMOD REU, Merced College)
Parvye Vorakoumman	June 2022–June 2023 (Central Seattle College)
Austin Engstrom	July 2021–June 2023
Tracee Nguyen	June 2022–August 2022 (MEMC REU, U Hawaii Manoa)
Janae Hume	June 2022–August 2022 (MEMC REU, UC Merced)
Konstantina Mason	September 2021–June 2022
Melanie Cash	October 2020–June 2022
Shenwei Wu	September 2018–June 2022
Alfred Moore	June 2021–August 2021 (MEMC REU, US Army Veteran, Rose-Hulman Institute of Technology)
Victoria Lasch	October 2019–March 2020
Talia LoCurto	October 2019–March 2020
Aditi Kumar	September 2019–March 2020
Dane Johnson	June 2017–June 2020
Ingrid Zimmerman	January 2019–June 2020
Tigre Falla	June–August 2019 (Grays Harbor Community College)
Nicholas Henry	June–August 2019 (STAR Teacher in Training)
Nathan Lai	January 2017–December 2018
Noushyar Panahpour Eslami	July 2016–September 2018
Eric Riesel	Summer 2018 (REU, Columbia University)
Kito Gilbert-Bass	Summer 2018 (REU, Ithaca College)
Harrison Sarsito	June 2016–June 2018
Justin Brown	September 2016–June 2017
Ashley Mathews	January 2016–June 2017
Dante Magdici	November 2015–December 2016
Molly Steimle	June 2016–August 2016 (REU, Oberlin College)
Yuting Lin	June 2013–June 2016
Douglas Waterman	October 2014–July 2015
Tianna Ibea	October 2014–July 2015
Emily Reeves	February 2014 (REU, St. Olaf College)
Connor McCue	January–July 2013

Former College/High School Teachers

Mia Eldridge	June–July 2023
Anthony Molinero	June–August 2019 (Grays Harbor Community College)

Former High School Students

Griffin Schwartz	September 2023–June 2024
B. Zephyr Pitre	August 2017–August 2018
Mukil Shanmugam	Summer 2017
Chloe Pope	Spring 2013
Caitlyn Richter	November 2012–May 2013

Group Honors & Awards

Grant Dixon	2023 Clean Energy Institute Graduate Research Fellowship
Florence Dou	2020-21 Clean Energy Institute DIRECT Fellowship
Michael Enright	2019 Renewable Energy Scholarship Foundation Graduate Winner and co-Sir Fraser Stoddart Scholar
	2017 Clean Energy Institute Travel Grant
	2017 Lloyd E. and Florence M. West Fellowship in Chemistry
	2016-17 Nicole A. Boand–ARCS Foundation Endowed Fellowship in Chemistry
	2015-16 Clean Energy Institute Graduate Fellowship
	2015 Honorable Mention, NSF Graduate Research Fellowship
	2015 Pacific Northwest National Laboratory Graduate Fellowship
	2014-15 Paul H. & Karen S. Gudiksen Endowed Fellowship in Chemistry
Noushyar Eslami	2017-18 Mary Gates Research Scholarship
Sarah E. Flowers	2012 George & Agnes Irene Cady Endowed Fellowship in Chemistry
Max R. Friedfeld	2018 Mistletoe Foundation Unfettered Research Grant
	2018 Washington Research Foundation Postdoctoral Fellowship
	2017 Clean Energy Institute Travel Grant
Dylan C. Gary	2015-16 Basil G. & Gretchen F. Anex Endowed Fellowship in Chemistry
	2015 Best Graduate Student Oral Presentation, International Conference on Fundamental Processes in Semiconductor Nanocrystals
	2015 Graduate School Fund for Excellence & Innovation Travel Grant
Benjamin A. Glassy	2014-15 Clean Energy Institute Graduate Fellowship
	2014-15 George & Agnes Irene Cady Endowed Fellowship in Chemistry
Samantha Harvey	2022 IC Postdoctoral Research Fellowship
Danielle A. Henckel	2015-16 Clean Energy Institute Graduate Fellowship
	2014 Honorable Mention, NSF Graduate Research Fellowship
Micaela Homer	2023 Department of Chemistry Excellence in Research Award
	2023 Department of Chemistry Alma Mater Travel Award
	2022 UW Inorganic Division Research Trailblazer Award
	2022 Clean Energy Institute Student Travel Grant
	2021 Clean Energy Institute Graduate Fellowship
M. Cecilia Johnson	2018-19 Torrance Foundation Tech Due Diligence Program
	2018-19 Clean Energy Institute Graduate Fellowship
	2018 Clean Energy Institute Travel Grant
Dane Johnson	2019-20 Levinson Emerging Scholar Award
	2017-18 Mary Gates Research Scholarship
	2017 Ed. F. and Clara M. Degering Tuition Scholarship
Daniel Kroupa	2018 Forbes' 30 Under 30: Energy
	2018 Mistletoe Foundation Unfettered Research Grant
Nathan Lai	2018 ACS DIC Undergraduate Research Award
Helen Larson	2024 Clean Energy Institute Travel Award
	2023 Clean Energy Institute Graduate Research Fellowship
	2023 ACS DIC Travel Award

Vijay Lin	2025 Department of Chemistry Summer Research Award
Yuting Lin	2013 CENTC Summer Undergraduate Research Fellowship
Ricardo Rivera-Maldonado	2022 Clean Energy Institute Outreach & Service Award
	2022 Clean Energy Education Fellowship
	2021 Clean Energy Institute Graduate Research Fellowship
Ratul Mangal	2024-25 Lloyd E. and Florence M. West Prize for Excellence in Research for the MSACST Program
Ashley Mathews	2017 Usha & S. Rao Varanasi Endowed Diversity Scholarship in Chemistry
Marja E. Mundy	2018-19 Clean Energy Institute Graduate Fellowship
	2018 Clean Energy Institute Travel Grant
	2017-18 Alma Mater Travel Award
	2017 Pacific Science Center Science Communication Fellowship
	2014 Clean Energy Institute Distinguished Energy Fellowship
	2014-19 NSF Graduate Research Fellowship
Ian A. Murphy	2018-19 Clean Energy Institute Graduate Fellowship
Hao Nguyen	2024 Langmuir Graduate Student Award, Second Place, ACS Division of Colloid and Surface Chemistry, 98th ACS Colloids and Surface Science Symposium
	2024 Clean Energy Institute Travel Award
	2024 Department of Chemistry Excellence in Research Award
	2022 MIT Quantum Science Summer School Scholarship
	2022 Fall ACS Meeting DIC Travel Award
	2022-23 Clean Energy Institute Graduate Fellowship
	2022 UW Inorganic Division Best Presentation Award
	2021 UW Excellence in Teaching Award Nomination
Lily Kim Nguyen	2023 Mary Gates Research Scholarship
Emily Nishiwaki	2023 Clean Energy Institute Travel Grant
	2022-23 Clean Energy Institute Graduate Fellowship
Nayon Park	2019-20 Clean Energy Institute Graduate Fellowship
	2021-22 Torrance Foundation Tech Due Diligence Program
Andrew Ritchhart	2019-20 Alma Mater Travel Award
	2018-19 Graduate Student Merit Fellowship
Soren Sandeno	2023 Clean Energy Institute Travel Grant
Harrison Sarsito	2017-18 Mary Gates Research Scholarship
A. Coleman Schwartz	2014-15 Clean Energy Institute Graduate Fellowship
Jennifer L. Stein	2016-17 Joseph Bouknight Endowed Fellowship in Chemistry
	2015 Graduate School Fund for Excellence & Innovation Travel Grant
	2014-15 Clean Energy Institute Graduate Fellowship
	2013 Advanced Materials for Energy Distinguished Energy Fellowship
	2013 George Hitchings Endowed Fellowship in Chemistry
David Ung	2018 Torrance Foundation Tech Due Diligence Program
	2018 Clean Energy Institute Travel Grant
	2017-18 Clean Energy Institute Graduate Fellowship
	2017 Clean Energy Institute Travel Grant
Shenwei Wu	2021-22 Mary Gates Research Scholarship
`	2021-22 Levinson Emerging Scholar Award
	2021 Gerald and Sheila Berkelhammer Book Award
	2020-21 Levinson Emerging Scholar Award

2019 Mary Gates Research Scholarship