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1. Professional Preparation

1.1. Education

Argonne National Laboratory (ANL)	Mater. Sci. & Eng.	Postdoc	2009-2012
Harvard University	Mater. Sci. & Eng.	Postdoc	2008
University of Pittsburgh	Anal. Chem. / Electrochem.	Ph.D.	2007
East China Univ. of Science and Technology	Inorganic Chemistry	M.S.	2000
East China Univ. of Science and Technology	Applied Chemistry	B.E.	1998

1.2. Appointments

Aug., 2023 – Present	Professor	Mater. Sci. & Eng., Boise State Univ., Boise, ID
Aug., 2018 – Aug., 2023	Associate Professor	Mater. Sci. & Eng., Boise State Univ., Boise, ID
Aug., 2019 – Aug., 2022	Associate Director, Graduate Program	Mater. Sci. & Eng., Boise State, Boise, ID
Aug., 2012 – Aug., 2018	Assistant Professor	Mater. Sci. & Eng., Boise State Univ., Boise, ID
Feb., 2009 – Aug., 2012	Postdoctoral Fellow	Center for Nanoscale Mater., ANL, Lemont, IL
Jan., 2008 – Jan., 2009	Postdoctoral Fellow	SEAS, Harvard University, Cambridge, MA
Jan., 2003 – Dec., 2007	Graduate Research Assistant	Chemistry, Univ. of Pittsburgh, Pittsburgh, PA
Jan., 2002 – Dec., 2002	Graduate Research Assistant	Mater. Sci. & Eng., Univ. of Washington, Seattle, WA
Jan., 2001 – Dec., 2001	Graduate Research Assistant	Chemistry, Univ. of Missouri-Rolla, Rolla, MO
Sep., 1998 – Dec., 2000	Graduate Research Assistant	Chemistry, ECUST, Shanghai, China

2. Honors and Awards

2023	2023 ECS Pacific Northwest Section Electrochemistry Research Award	ECS Pacific Northwest Section
2023	Fellow of the American Ceramic Society	The American Ceramic Society
2023	Fellow of the Royal Society of Chemistry	The Royal Society of Chemistry
2020	CAES Fellow	Center for Advanced Energy Studies
2020	Outstanding Community Partner Award	Girl Scouts of Silver Sage Council
2017 – 2019	Scialog Fellow	Research Corporation for Science Advancement
2018	Scialog: Advanced Energy Storage Team Award	RCSA/Sloan Foundation
2017	Journal of Materials Chemistry A Emerging Investigators	JMCA
2015	CAREER Award	National Science Foundation
2013	Young Faculty Travel Award	Battery Division, the Electrochemical Society
2005 – 2007	Andrew Mellon Predoctoral Fellowship	University of Pittsburgh
2005	Graduate Student Travel Award	Society for Electroanalytical Chemistry (SEAC)

3. Research and Scholarly Activities

3.1. Peer-Reviewed Publications (*H-index 30, >3900 citations, *corresponding author, graduate student, undergraduate student†, RET‡, high school student‖)*

From Boise State University:

1. E. Gabriel, Z. Wang, V. V. Singh, K. Graff, J. Liu, C. Koroni, D. Hou, D. Schwartz, C. Li, J. Liu, X. Guo, N. C. Osti,*, S. P. Ong,*, H. Xiong*, "Influence of Interlayer Cation Ordering on Na

Transport in P2-type $Na_{0.67-x}Li_y$ $Ni_{0.33-z}Mn_{0.67+z}O_2$ for Sodium-Ion Batteries" (Front Cover), *Journal of the American Chemical Society*, In Press.

2. D. Xia, H. Jeong, D. Hou, L. Tao, T. Li, K. Knight, A. Hu, E. P. Kamphaus, D. Nordlund, S. Sainio, Y. Liu, J. R. Morris, W. Xu, H. Huang, L. Li, H. Xiong, L. Cheng*, F. Lin*, "Self-terminating, Heterogeneous Solid-Electrolyte Interphase Enables Reversible Li-Ether Co-Intercalation in Graphite Anodes", PNAS, 121 (2023), 5, e2313096121.

3. C. Koroni,*, K. Dixon,† P. Barnes, D. Hou, L. Landsberg,† Z. Wang,‖ G. Grbic',‖ S. Frisone,† S. Pooley, T. Olsen, A. Meunzer,† D. Nguyen,† B. Bernal,‖H. Xiong*, "Morphology and Crystallinity Effects of Nanochanneled Niobium Oxide Electrodes for Na-ion Batteries", *ACS Nanoscience Au*, 4 (2023), 1, 76-84.

4. T. Olsen, C. Koroni, Y. Liu, J. A. Russell, J. Wharry,* H. Xiong,* "Radiation effects on materials for electrochemical energy storage systems" (Invited Review, Front Cover), *Physical Chemistry Chemical Physics*, 25 (2023), 30761-30784.

5. C. M. Efaw, Q. Wu, N. Gao, Y. Zhang, H. Zhu, K. Gering, M. F. Hurley, H. Xiong, E. Hu, X. Cao, W. Xu, J.-G. Zhang, E. J. Dufek, J. Xiao, X.-Q. Yang, J. Liu, Y. Qi,* B. Li* "Localized High-Concentration Electrolytes Get More Localized Through Micelle-Like Structures", *Nature Materials*, 22 (2023), 12, 1531-1539.

6. G. P. Wiederrecht*, R. Bachelot*, H. Xiong, K. Termentzidis, A. Nominé, J. Huang, P. V. Kamat, E. A. Rozhkova, A. Sumant, M. Ostraat, P. K. Jain, C. Heckle, J. Li, and K. Z. Pupek, "Nanomaterials and Sustainability", *ACS Energy Letters*, 8 (2023), 8, 3443–3449.

7. J. Park, K. Ku, J. Gim, S.-b. Son, H. Jeong, L. Cheng, H. Iddir, D. Hou, H. Xiong, Y. Liu, E. Lee,* C. Johnson, "Multifunctional Effect of Fe Substitution in Na Layered Cathode Materials for Enhanced Storage Stability", *ACS Applied Materials & Interfaces*, 15 (2023), 32, 38454–38462.

8. L. Tao, J. A. Russell, D. Xia, B. Ma, S. Hwang, Z. Yang, A. Hu, Y. Zhang, P. Sittisomwong, D. Yu, P. A. Deck, L. A. Madsen, H. Huang, H. Xiong,* P. Bai,* K. Xu,* F. Lin*, "Reversible Switch in Charge Storage Enabled by Selective Ion Transport in Solid Electrolyte Interphase", *Journal of the American Chemical Society,* 145 (2023), 30, 16538–16547.

9. E. Gabriel, K. Graff, D. Hou, A. Conrado,† H. Xiong* "Heterostructure engineering in electrode materials for sodium ion batteries: recent progress and perspectives" (Invited Perspective), *eScience*, (2023), 100139.

10. J. May, D. Koirala, F. Dalbec, J. Russell, H. Xiong, E. Echeverria, D. N McIlroy, I. F. Cheng "Superhydrophilicity and Antifouling Behavior in Electrochemically Oxidized Nanocrystalline Pseudographite*", Industrial & Engineering Chemistry Research*, 62 (2023), 6687 – 6696.

11. X. Zhou, L. Stan, D. Hou, Y. Jin, H. Xiong, L. Zhu, and Y. Liu, "Operando study of mechanical integrity of high-volume expansion Li-ion battery anode materials coated by Al_2O_3", *Nanotechnology* 34 (2023), 235705.

12. C. Ma*, J. Jiang, Y. Fan, X. Li, Z.-F. Ma, H. Ben, and H. Xiong* "Elucidating the Synergic Effect in Nanoscale MoS_2/TiO_2 Heterointerface for Na-ion Storage", *Advanced Science*, (2022), 2204837. doi.org/10.1002/advs.202204837

13. C. Koroni, T. Olsen, J. Wharry* & H. Xiong*, "Irradiation-Induced Amorphous-to-Crystalline Phase Transformations in Ceramic Materials" (Invited Perspective), *Materials,* 15 (2022), 5924.

14. C. Wang, A.C. Thenuwara, J. Luo, P.P. Shetty, M.T. McDowell, H. Zhu, S. Posada-Pérez, H. Xiong*, G. Hautier* & W. Li* "Extending the low-temperature operation of sodium metal batteries combining linear and cyclic ether-based electrolyte solutions", *Nature Communications*, 13 (2022), 4934.

15. P. Barnes, Y. Zuo, K. Dixon, † D. Hou, S. Lee, Z. Ma, J. G. Connell, H. Zhou, C. Deng, K. A. Smith, E. Gabriel, O. O. Maryon, † P. H. Davis, H. Zhu, Y. Du, J. Qi, Z. Zhu, C. Chen, Z. Zhu, Y. Zhou, A. E. Weltner, † D. Schwartz, P. J. Simmonds, S. P. Ong,* and H. Xiong* "Electrochemically-Induced Amorphous to Rock Salt Phase Transformation in Niobium Oxide Electrodes for Li-Ion Batteries", *Nature Materials*, 21 (2022), 795–803.

16. E. Gabriel, D. Hou, E. Lee & H. Xiong* "Multiphase Layered Transition Metal Oxide Positive Electrodes for Sodium Ion Batteries" (Invited Review), *Energy Science & Engineering*, 10 (2022), 1672-1705.

17. D. Hou, E. Gabriel, K. Graff, T. Li, Y. Ren, Z. Wang,‖ Y. Liu & H. Xiong* "Thermal Dynamics of P2-$Na_{0.67}Ni_{0.33}Mn_{0.67}O_2$ Cathode Materials for Sodium Ion Batteries Studied by In Situ Analysis", *Journal of Materials Research*, 37 (2022), 1156–1163.

18. C. Yang, T. Olsen, L. M. Lau, K. A. Smith, K. Hattar, A. Sen, Y. Wu, D. Hou, B. Narayanan, M. Long, J. Wharry* & H Xiong* "In Situ Ion Irradiation of Amorphous TiO_2 Nanotubes", *Journal of Materials Research*, 37 (2022), 1144–1155.

19. K. Liu, Y. Xie, Z. Yang, H.K. Kim, T.L. Dzwiniel, J. Yang, H. Xiong, C. Liao "Design of a Single-Ion Conducting Polymer Electrolyte for Sodium-Ion Batteries", *Journal of the Electrochemical Society*, 168 (2021), 160543.

20. D. Hou, D. Xia, E. Gabriel, J. Russell, K. Graff, Y. Ren, C.-J. Sun, F. Lin,*, Y. Liu,* and H. Xiong* "Spatial and Temporal Analysis of Sodium Ion Batteries" (Invited Review, Cover), *ACS Energy Letter*, 6 (2021), 4023-4054.

21. H. Zhu, J. Russell, Z. Fang, P. Barnes, L. Li, C. Efaw, A. Muenzer, † J. May, K. Hamal, I. F. Cheng, P. Davis, E. Dufek, and H. Xiong* "A Comparison of Solid Electrolyte Interphase Formation and Evolution on Highly Oriented Pyrolytic and Disordered Graphite Negative Electrodes in Lithium-ion Batteries", *Small*, (2021), 2105292.

22. Y. Xie, E. Gabriel, L. Fan, I. Hwang, X. Li, H. Zhu, Y. Ren, C. Sun, J. Pipkin, † M. Dustin, † M. Li, Z. Chen*, E. Lee* & H. Xiong* "Role of Lithium Doping in P2-$Na_{0.67}Ni_{0.33}Mn_{0.67}O_2$ for Sodium-Ion Batteries." *Chemistry of Materials*, 33 (2021), 4445–4455.

23. C. R. Ma, Y. Hou, K. Jiang, L. Zhao, T. Olsen, Y. Fan, J. Jiang, Z. Xu, Z.-F. Ma, D. Legut, H. Xiong, X.-Z. Yuan "In situ cross-linking construction of 3D mesoporous bimetallic phosphide-in-carbon superstructure with atomic interface toward enhanced sodium ion storage performance", *Chemical Engineering Journal*, 413 (2021), 127449.

24. C. J. Deng, E. Gabriel, P. Skinner, † S. Lee, P. Barnes, C. R. Ma, J. Gim, M. L. Lau, † E. Lee, and H. Xiong* "Origins of Irreversibility in Layered $NaNi_xFe_yMn_zO_2$ Cathode Materials for Sodium Ion Batteries", *ACS Applied Materials & Interfaces*, 12 (2020), 51397-51408.

25. C. R. Ma, Z. Xu, J. Jiang, Z.-F. Ma, T. Olsen, H. Xiong*, S. Wang* and X.-Z. Yuan* "Tailored nanoscale interface in a hierarchical carbon nanotube supported MoS_2@ MoO_2-C electrode toward high performance sodium ion storage", *Journal of Materials Chemistry A*, 8 (2020) 11011-11018.

26. C. J. Deng, M. L. Lau, † C. R. Ma, P. Skinner, † Y. Z. Liu, W. Xu, H. Zhou, X. Zhang, D. Wu, Y.D. Yin, Y. Ren, J. Perez, † D. Jaramillo, ‡ P. Barnes, D. Hou, M. Dahl, B. Williford, † M. Dahl, C. Zheng and H. Xiong* "A mechanistic study of mesoporous TiO_2 nanoparticle negative electrode materials with varying crystallinity for lithium ion batteries", *Journal of Materials Chemistry A,* 8 (2020) 3333-3343.

27. T. Pandhi, C. Cornwell, K. Fujimoto, P. Barnes, J. Cox, H. Xiong, P.H. Davis, H. Subbaraman, J.E. Koehne, D. Estrada "Fully inkjet-printed multilayered graphene-based flexible electrodes for repeatable electrochemical response", *RSC Advances*, 10(2020), 38205-38219.

28. C. M. Efaw, J. L. Vandegrift, M. Reynolds, B. J. Jaques, H. Hu, H. Xiong, and M. F. Hurley " Characterization of zirconium oxides part II: New insights on the growth of zirconia revealed through complementary high-resolution mapping techniques", *Corrosion Science, 167*, (2020), 108491.

29. C. R. Ma, H. Yang, Z. Xu, Z. Fu, Y. Xie, H. Zhang, M. Hong, Z.-F. Ma, H. Xiong* and X.-Z. Yuan* " Insights into High Capacity and Ultrastable Carbonaceous Anodes for Potassium-Ion Storage via Hierarchical Heterostructure", *Journal of Materials Chemistry A,* 8 (2020) 2836-2842.

30. P. Barnes, *K. Smith*, R. Parrish, † C. Jones, † P. Skinner, † E. Storch, ‖ Q. White, ‖ C. J. Deng, D. Karsann, † M. L. Lau, † J. J. Dumais, E. Dufek, and H. Xiong* "A non-aqueous sodium hexafluorophosphate-based electrolyte degradation study: formation and mitigation of hydrofluoric acid", *Journal of Power Sources*, 447 (2020), 227363.

31. C. M. Efaw, J. L. Vandegrift, M. Reynolds, S. McMurdie, † B. J. Jaques, H. Hu, H. Xiong, and M. F. Hurley "Characterization of zirconium oxides part I: Raman mapping and spectral feature analysis", *Nuclear Materials and Energy*, 21, (2019), 100707.

32. C. J. Deng, C. R. Ma, M. L. Lau, † P. Skinner, † Y. Z. Liu, W. Xu, H. Zhou, Y. Ren, Y. D. Yin, B. Williford, † M. Dahl, and H. Xiong* "Amorphous and crystalline TiO_2 nanoparticle negative electrodes for sodium-ion batteries", *Electrochimica Acta*, 321 (2019) 134723.

33. K. A. Smith, A. I. Savva, K. Y. S. Mao, Y. Q. Wang, D. A. Tenne, D. Chen, Y. Z. Liu, P. Barnes, C. J. Deng, D. P. Butt, J. P. Wharry, and H. Xiong* "Effect of proton irradiation on anatase TiO_2 nanotube anodes for lithium-ion batteries", *Journal of Materials Science,* 54 (2019) 13221-13235.

34. C. R. Ma, X. Li, C. J. Deng, Y. Y. Hu, S. Lee, X. Z. Liao, Y. S. He, Z. F. Ma, and H. Xiong* "Coaxial Carbon Nanotube Supported TiO2@MoO2@Carbon Core-Shell Anode for Ultrafast and High-Capacity Sodium Ion Storage", *ACS Nano,* 13 (2019) 671-680.

35. K. A. Smith, A. I. Savva, Y. Q. Wu, D. A. Tenne, D. P. Butt, H. Xiong*, and J. P. Wharry "Effects of intermediate energy heavy-ion irradiation on the microstructure of rutile TiO_2 single crystal", *Journal of the American Ceramic Society,* 101 (2018) 4357-4366.

36. I. Savva, K. A. Smith, M. Lawson, S. R. Croft, † A. E. Weltner, † C. D. Jones, † H. Bull, ‡ P. J. Simmonds, L. Li, and H. Xiong* "Defect generation in TiO2 nanotube anodes via heat treatment in various atmospheres for lithium- ion batteries", *Physical Chemistry Chemical Physics,* 20 (2018) 22537-22546.

37. R. Ma, Z. G. Fu, C. J. Deng, X. Z. Liao, Y. S. He, Z. F. Ma, and H. Xiong* "Carbon-coated FeP nanoparticles anchored on carbon nanotube networks as an anode for long-life sodium-ion storage", *Chemical Communications,* 54 (2018) 11348-11351.

38. R. Ma, C. J. Deng, X. Z. Liao, Y. S. He, Z. F. Ma, and H. Xiong* "Nitrogen and Phosphorus Codoped Porous Carbon Framework as Anode Material for High Rate Lithium-Ion Batteries", *ACS Applied Materials & Interfaces,* 10 (2018) 36969-36975.

39. R. Ma, C. J. Deng, X. Z. Liao, Y. S. He, Z. F. Ma, and H. Xiong* "Urchin-like MoP Nanocrystals Embedded in N-Doped Carbon as High Rate Lithium Ion Battery Anode", *ACS Applied Energy Materials,* 1 (2018) 7140-7145.

40. C. J. Deng, P. Skinner, † Y. Z. Liu, M. L. Sun, W. Tong, C. R. Ma, M. L. Lau, † R. Hunt, † P. Barnes, J. Xu, and H. Xiong* "Li-Substituted Layered Spinel Cathode Material for Sodium Ion Batteries", *Chemistry of Materials,* 30 (2018) 8145-8154.

41. P. Barnes, A. Savva, K. Dixon, † H. Bull, ‡ L. Rill, † D. Karsann, † S. Croft, † J. Schimpf, † and H. Xiong* "Electropolishing valve metals with a sulfuric acid-methanol electrolyte at low temperature", *Surface & Coatings Technology,* 347 (2018) 150-156.

42. K. A. Smith, A. I. Savva, C. J. Deng, J. P. Wharry, S. Hwang, D. Su, Y. Q. Wang, J. Gong, T. Xu, D. P. Butt, and H. Xiong* "Effects of proton irradiation on structural and electrochemical charge storage properties of TiO_2 nanotube electrodes for lithium-ion batteries", *Journal of Materials Chemistry A,* 5 (2017) 11815-11824.

43. C. J. Deng, M. L. Lau, † H. M. Barkholtz, H. P. Xu, R. Parrish, † M. Xu, T. Xu, Y. Z. Liu, H. Wang, J. G. Connell, K. A. Smith, and H. Xiong* "Amorphous boron nanorod as an anode material for lithium-ion batteries at room temperature", *Nanoscale,* 9 (2017) 10757-10763.

44. K. Smith, R. Parrish, † W. Wei, Y. Z. Liu, T. Li, Y. H. Hu, and H. Xiong* "Disordered 3D Multi-layer Graphene Anode Material from CO2 for Sodium-Ion Batteries", *Chemsuschem,* 9 (2016) 1397-1402.

45. M. Shakourian-Fard, G. Kamath, K. Smith, H. Xiong, and S. K. R. S. Sankaranarayanan "Trends in Na-Ion Solvation with Alkyl-Carbonate Electrolytes for Sodium-Ion Batteries: Insights from First-Principles Calculations", *Journal of Physical Chemistry C,* 119 (2015) 22747-22759.

46. J. Zhang, C. Rowland, Y. Z. Liu, H. Xiong, S. Kwon, E. Sheychenko, R. D. Schaller, V. B. Prakapenka, S. Tkachev, and T. Rajh "Evolution of Self-Assembled ZnTe Magic-Sized Nanoclusters", *Journal of the American Chemical Society,* 137 (2015) 742-749.

47. G. Kamath, R. W. Cutler, S. A. Deshmukh, M. Shakourian-Fard, R. Parrish, † J. Huether, D. P. Butt, H. Xiong,* and S. K. R. S. Sankaranarayanan* "In Silico Based Rank-Order Determination and Experiments on Nonaqueous Electrolytes for Sodium Ion Battery Applications", *Journal of Physical Chemistry C,* 118 (2014) 13406-13416.

48. H. Xiong, H. Yildirim, P. Podsiadlo, J. Zhang, V. B. Prakapenka, J. P. Greeley, E. V. Shevchenko, K. K. Zhuravlev, S. Tkachev, S. K. R. S. Sankaranarayanan, and T. Rajh "Compositional Tuning of Structural Stability of Lithiated Cubic Titania via a Vacancy-Filling Mechanism under High Pressure", *Physical Review Letters,* 110 (2013) 078304-078308.

Prior to Boise State University:

49. H. Xiong, H. Yildirim, E. V. Shevchenko, V. B. Prakapenka, B. Koo, M. D. Slater, M. Balasubramanian, S. K. R. S. Sankaranarayanan, J. P. Greeley, S. Tepavcevic, N. M. Dimitrijevic, P. Podsiadlo, C. S. Johnson, and T. Rajh "Self-Improving Anode for Lithium-Ion Batteries Based on Amorphous to Cubic Phase Transition in TiO2 Nanotubes", *Journal of Physical Chemistry C,* 116 (2012) 3181-3187.

50. M. Urgun-Demirtas, P. L. Benda, P. S. Gillenwater, M. C. Negri, H. Xiong, and S. W. Snyder "Achieving very low mercury levels in refinery wastewater by membrane filtration", *Journal of Hazardous Materials,* 215 (2012) 98-107.

51. S. Tepavcevic, H. Xiong, V. R. Stamenkovic, X. B. Zuo, M. Balasubramanian, V. B. Prakapenka, C. S. Johnson, and T. Rajh "Nanostructured Bilayered Vanadium Oxide Electrodes for Rechargeable Sodium-Ion Batteries", *Acs Nano,* 6 (2012) 530-538.

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57. H. Xiong, B. K. Lai, A. C. Johnson, and S. Ramanathan "Low-temperature electrochemical characterization of dense ultra-thin lanthanum strontium cobalt ferrite (La0.6Sr0.4Co0.8Fe0.2O3) cathodes synthesized by RF-sputtering on nanoporous alumina-supported Y-doped zirconia membranes", *Journal of Power Sources,* 193 (2009) 589-592.

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65. G. Q. Zhong, H. Xiong, and Y. Q. Jia "Synthesis, crystal structure, relative content of the Mn4+ ion, tolerance factor and catalytic property of La1-xCaxMnO3 (x=0.0-1.0)", *Materials Chemistry and Physics,* 91 (2005) 10-16.

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72. G. J. Zhang, H. Xiong, J. Y. Zheng, Y. Q. Jia, Y. Xuan, and N. Mizutani "Relative content of the Cr^{4+} ion and electrical conductivity of La0.75Ca0.25Cr0.75Fe0.25O3", *Materials Chemistry and Physics,* 71 (2001) 84-89.

73. H. Xiong, G. J. Zhang, J. Y. Zheng, and Y. Q. Jia "Synthesis, crystal structure and electric conductivity of La0.9Ca0.1Cr0.5B0.5O3 (B = Mn, Fe, Ni)", *Materials Letters,* 51 (2001) 61-67.

74. X. H. Zhao, S. K. Ruan, J. Du, M. L. Liu, M. Z. Jin, X. L. Li, H. Xiong, Y. W. Song, and Y. Q. Jia "Synthesis, crystal structure, Mossbauer spectrum, and magnetic susceptibility of new pyrochlore compound CaNdFe1/2Nb3/2O7", *Journal of Solid State Chemistry,* 154 (2000) 483-487.

75. G. J. Zhang, J. G. Yang, H. Xiong, Y. Q. Jia, M. L. Liu, and M. Z. Jin "Mossbauer spectra of Fe-57 in $La_{0.75}M_{0.25}Cr_{0.75}Fe_{0.25}O_3$ (M = Ca, Sr, Ba)", *Physica Status Solidi B-Basic Research,* 221 (2000) 751-757.

3.2. Invited Talks

From Boise State University (after tenure):

1. H. Xiong, "Defect and Interphase Engineering in Electrode Materials for Metal Ion Batteries", Seminar, Department of Mechanical Engineering, University of North Carolina-Charlotte, April 2024
2. H. Xiong, "Structure Stabilization in Layered Transition Metal Oxide Positive Electrodes for Sodium Ion Batteries", Seminar, Oak Ridge National Laboratory, April 2024 "ENFL Research Excellence Award In Electrochemical Energy Storage in Honor of Ying Shirley Meng" symposium, ACS Spring 2024, New Orleans, LA, March 2024
3. "Crystallization and Assembly at Interfaces: Fundamental Breakthroughs Enabled by Data-Centric Analysis and In-Situ/Operando Techniques" symposium, 2023 MRS Fall Meeting, November 2023
4. Institute of Materials Science and Engineering (IMSE) at Washington University in St. Louis, November 2023
5. "Synthesis, Characterization, Modeling and Applications of Functional Porous Materials" symposium, The Materials Science & Technology (MS&T) 2023, October 2023
6. 8th International Conference on Sodium Batteries, Liyang, China, September 2023
7. "Women in Battery Research", ACS Fall 2023, San Francisco, CA, August 2023
8. 2023 SNS-HFIR User Group (SHUG) user meeting, Oak Ridge, TN, June 2023
9. 243rd ECS Meeting, Boston, MA, May 2023
10. CNM/APS User Meeting, Lemont, IL, May 2023
11. "In-situ/operando techniques applied to materials in energy storage", Pittcon 2023, Philadelphia, PA, March 2023
12. Department of Chemistry, University of Oregon, January 2023
13. EMA2023, S4 Complex Oxide Thin Films and Heterostructures - From Synthesis to Strain/Interface-engineered Emergent Properties, Orlando, FL, January 2023
14. SF05: Harnessing Functional Defects for Energy and Electronic Frontiers, 2022 MRS Fall Meeting,

November 2022

15. "Emerging Materials and Processes for Electrochemical Energy Storage", 2022 ACS Western Regional Meeting, Las Vegas, NV, October 20-22, 2022
16. "Advanced Characterization of Materials for Nuclear, Radiation, and Extreme Environments III" symposium, The Materials Science & Technology (MS&T) 2022, October 2022
17. "Synthesis, Characterization, Modeling and Applications of Functional Porous Materials" symposium, The Materials Science & Technology (MS&T) 2022, October 2022
18. ACS Fall 2022, Chicago, IL, August 2022
19. 27th AACGE Western Section Conference on Crystal Growth & Epitaxy, June 2022
20. Department of Chemistry (virtual), Aarhus University, Denmark, June 2022
21. 2022 APS/CNM User Meeting (virtual), May 2022
22. Materials-2022 (virtual), April 2022
23. ACS Spring 2022, March 20-24, 2022
24. School of Molecular Sciences Seminar, Arizona State University, January 2022
25. Department of Chemistry Seminar (virtual), Zhengzhou University, December 2021
26. 240th ECS Meeting (virtual), October 2021
27. The Center for Integrated Nanotechnologies (CINT) annual user meeting, October 2021
28. Department of Chemical Engineering seminar (virtual), University of Utah, September 2021
29. MS&T2020 (virtual), October 2020
30. PRiME 2020 (virtual), the Electrochemical Society, October 2020
31. CAES Codebreaker Seminar, August 2020
32. NIST, Gaithersburg, MD, February 2020
33. Department of Materials Science and Engineering, University of Utah, February 2020
34. Department of Chemistry, Florida State University, Tallahassee, January 2020
35. Electronic Materials and Applications 2020, Orlando, January 2020
36. International Conference on Sodium Batteries, Naperville, November 2019
37. Department of Materials Science and Engineering, University of Washington, Seattle, October 2019
38. Materials Science & Technology conference, Portland, October 2019
39. ICMAT2019, Singapore, June 2019
40. Annual CNM/APS User Meeting, Argonne National Laboratory, May 2019
41. Department of Materials Science and Engineering, Wichita State University, April 2019
42. ICEES, Shaoxing, China, March 2019
43. TMS 2019, San Antonio, March 2019
44. MS&T18 Meeting, Columbus, October 2018
45. AiMES meeting, Cancun, Mexico, October 2018
46. ACS Presidential Symposium, the 256th ACS National Meeting, Boston, August 2018

From Boise State University (before tenure):

47. Department of Materials Science and Engineering, University of Florida, March 2018
48. IUPAC NMS-XIII Conference, Nanjing, China, October 2017
49. Department of Chemistry Seminar, University of Pittsburgh, October 2017
50. CAES Materials Initiative Working Meeting, Boise, August 2017
51. Seminar at the College of Energy, Nanjing Tech University, Nanjing, China, July 2017
52. Department of Chemical Engineering Seminar, Shanghai Jiaotong University, Shanghai, China, June 2017
53. Seminar at State Key Laboratory of Metal Matrix Composites, Shanghai Jiaotong University, June 2017
54. Seminar at the College of Environmental and Energy Engineering, Beijing University of Technology, Beijing, China, June 2017
55. Seminar at the School of Material Science and Technology, China University of Geosciences (Beijing), Beijing, China, June 2017
56. Chemistry Department Seminar, University of California-Riverside, Riverside, March 2017
57. TMS 2017 annual meeting, San Diego, March 2017
58. XXV International Materials Research Congress, Cancun, Mexico, August 2016
59. Chemistry Department Seminar, Zhejiang University, Hangzhou, China, June 2016

60. ACS 251st Meeting, San Diego, March 2016
61. Aerospace Day, Boise State University, Boise, February 2016
62. Chemistry Department Seminar, Drexel University, Philadelphia, January 2015
63. Chemical Engineering Department Seminar, University of New Hampshire, October 2015
64. 2nd International Sodium Battery Conference, Phoenix, October 2015
65. Energy Processes & Materials Division Seminar, PNNL, Richland, September 2015
66. Chemistry Department Seminar, University of North Carolina-Charlotte, Charlotte, September 2015
67. 2015 TMS Annual Meeting, Orlando, March 2015
68. 2015 Idaho Academy of Science Annual Conference, Boise, March 2015
69. Chemistry Department Seminar, Boise State University, Boise, February 2015
70. Physics Department Seminar, University of Idaho, Moscow, January 2015
71. Chemistry Department Seminar, Ohio State University, Columbus, October 2014
72. Photovoltaic and Electrochemical Systems Branch seminar, NASA Glenn Research Center, Cleveland, October 2014
73. CAES 2014 Energy Storage and Ion Conducting Materials and Modeling Workshop, Boise, September 2014
74. PNWAVS, Richland, September 2014
75. Chemistry Department Seminar, Nanjing University, Nanjing, China, June 2014
76. DOE Triennial Review Meeting, Argonne National Laboratory, Lemont, August 2013
77. ACS 245th Meeting, New Orleans, April 2013
78. Chemistry Department Seminar, Sichuan University, Chengdu, China, December 2012
79. Chemistry Department Seminar, Northern Illinois University, DeKalb, February 2012

3.3. Book Chapters

H. Xiong "*Introduction to the Battery Section*" in **Encyclopedia of Energy Storage**, Elsevier, April 2022

J. P. Wharry, H. Xiong., T. Olsen, C. Yang "*Radiation Effects in Battery Materials*" in **Encyclopedia of Energy Storage**, Elsevier, Elsevier, April 2022

H. Xiong*; E. Dufek, K. Gering. "*Batteries – Materials for Lithium-ion Batteries*" in **Comprehensive Energy Systems**, Elsevier, 2018

B.K. Lai, A. C. Johnson, H. Xiong, C. Ko, S. Ramanathan. "*Exploratory studies on silicon- based oxide fuel cell power sources incorporating ultra-thin nanostructured platinum and cerium oxide films as anode components*", **Future Trends in Microelectronics: Unmapped Roads**, Wiley-IEEE Press, (Ed. A Zaslavsky, J. Xu and S. Luryi) 2009

3.4. Patents and Invention Disclosures

H. Xiong, P. Barnes, S. P. Ong, Y. Zuo "Synthesis of novel functional metal oxide electrode materials through electrochemical cycling", Patent Application, 19975.113US01, May 2022

H. Xiong, C. J. Deng, J. Xu. "Li-substituted Layered Spinel Cathode Materials for Sodium Ion Batteries", US Patent 11,165,064 (Awarded November 2021)

C. J. Johnson, H. Xiong, T. Rajh, E. Schevchenko, S. Tepavcevic. "High Capacity Electrode Materials for Batteries and Process for Their Manufacture" US patent 9,935,314 (Awarded April 2018)

3.5. Other Publications and Presentations

3.5.1. Virtual Issues and Viewpoint Publications

- M. T. McDowell, H. Xiong, M. Nazemi, J. Peng, J. L. Lutkenhaus, R. Wang, A. Djire, A. Sankaran, J, Leem, Y. Gogotsi, "Nanomaterials in the future of energy research*"* (Voices)*, Cell Reports Physical Science,* 4(2023), 101605

- C. M. Biegel and P. V. Kamat "Women Scientists at the Forefront of Energy Research: A Virtual Issue, Part 4 ", *ACS Energy Letter,* 7 (2022), 1, 328 - 342.

3.5.2. Submitted Peer Reviewed Publications and Peer-Reviewed Conference Proceedings

- J. Min, S. Bak, Y. Zhang, M. Yuan, N. Pietra, J. A. Russell, D. Xia, Y. Du, H. Xiong, L. A. Madsen, F. Lin*, "Interfacial phase separation governs the chemomechanics of polymer electrolytes in high-voltage, solid-state lithium batteries", *Nature Nanotechnology*, Under Review.
- C. M. Efaw, Z. Wang, H. Zhang, L. Xu, S. Kim, B. Park, P. L. Barnes, H. Xiong, E. J. Dufek, P. G. Khalifah, H. Xu, and B. Li*, "Impacts of Pressure Cell Designs on Li-NMC811 Pouch Cells", *Joule*, Under review.
- D. Hou, X. Zhou, Y. Zhu, T. Li, C. Koroni, W. Xu, Y. Ren, Y. Liu*, H. Xiong*, "Imaging the Electrochemically Driven Texture Evolution in Li-ion Electrode Particles", *Joule*, Under Review.
- Tristan Olsen; Wei-Ying Chen; Miu Lun Lau; Cyrus Koroni; Chao Yang; Md Ali Muntaha; Sarah Pooley; Zhongxia Shang; Dewen Hou; Ling Wang; Min Long; Janelle Wharry*; Hui Xiong*, "Mechanisms of Ion Irradiation Induced Ordering in Amorphous TiO_2 Nanotubes: Effects of Ion Mass and Energy", *Journal of Nuclear Materials*, Under Revision.

3.5.3. Conference Oral and Poster Presentations

Over 90 conference presentations

3.6. Continuing Professional Development

Description	Date	Hours
ASSERT Fellow	*2022*	*60*
2018 NSF Career Development Workshop in Ceramics	*October 13, 2018*	*12*
2017 NSF Career Development Workshop in Ceramics	*May 20-21, 2017*	*15*
NSF Career Development Workshop	*September 3-5, 2014*	*16*
CAES Career Workshop	*August 7, 2014*	*3*
NSF Grant Conference	*June 22-24, 2014*	*16*
Elevate Your Writing	*October 25, 2013*	*2*
Techniques for Writing Successful Proposals - Proposal Development	*May 21, 2013*	*1*
Research Networking Event	*April 19, 2013*	*1*

3.7. Graduate and Postdoctoral Advisors

Prof. Shigeru Amemiya (Ph.D. advisor, University of Pittsburgh)
Prof. Shriram Ramanathan (Postdoctoral advisor, Harvard University, currently at Purdue University)
Dr. Tijana Rajh (Postdoctoral advisor, Argonne National Laboratory, currently at Arizona State University)
Dr. Yupo Lin (Postdoctoral advisor, Argonne National Laboratory)

3.8. Collaborators (External)

Name:	Organizational Affiliation
Bai, Peng	Washington University at St. Louis
Butt, Darryl	University of Utah

Chan, Candace	Arizona State University
Chen, Zonghai	Argonne National Lab
Co, Anne	Ohio State University
Connell, Justin	Argonne National Lab
Du, Yingge	Pacific Northwest National Lab
Dufek, Eric	Idaho National Lab
Gering, Kevin	Idaho National Lab
Hattar, Khalid	Sandia National Lab
He, Lingfeng	Idaho National Lab
Hu, Hongqiang	Idaho National Lab
Hu, Yan-Yan	Florida State University
Hu, YunHang	Michigan Technological University
Jiang, Junhua	Idaho National Lab
Lee, Eungje	Argonne National Lab
Lee, Sungsik	Argonne National Lab
Li, Bin	Idaho National Lab
Li, Weiyang	Dartmouth College
Lin, Feng	Virginia Tech
Liu, Yuzi	Argonne National Lab
Narayanan, Badri	University of Louisville
Ong, Shyue Ping	UCSD
Qi, Yue	Brown University
Tong, Wei	Lawrence Berkeley national laboratory
Wharry, Janelle	Purdue University
Wang, Chongmin	Pacific Northwest National Lab
Wang, Yongqiang	Los Alamos National Lab
Wu, Di	Washington State University
Wu, Yaqiao	Center for Advanced Energy Studies
Xu, Wenqian	Argonne National Lab
Xu, Jing	Quantumscape
Yin, Yadong	University of California -Riverside
Zhou, Hua	Argonne National Lab
Zhu, Zihua	Pacific Northwest National Lab

3.9. Collaborators (Internal)

Name:	Organizational Affiliation
Paul Davis	MSE
Elton Graugnard	MSE
Mike Hurley	MSE
Brian Jaques	MSE
Lan Li	MSE
Min Long	CSE
Paul Simmonds	Physics/MSE
Dmitri Tenne	Physics
Sasha Wang	Mathematics
Yaqiao Wu	MSE

3.10. Mentoring

3.10.1. Postdoctoral Students, Research Staff, and Visiting Scholars Supervised

Yifan Dong	Postdoc, 2022 - present
Dewen Hou	Postdoc, 2019 - present
Haoyu Zhou	Postdoc, 2018 – 2021
Yingying Xie	Postdoc, 2019 – 2020
Qianyu Zhang	Visiting Professor (Dongguang University of Technology), 2019
Wenpo Li	Visiting Professor (Chongqing University), 2018 summer
Chunrong Ma	Visiting Graduate Student (Shanghai Jiaotong University), 2017
Michael Dahl	Visiting Graduate Student (University of California-Riverside), 2015

3.10.2. Doctoral Students Advised

Jiacheng Hu	Pursuing Ph.D. in MSE, current since 2023
Sarah Pooley	Pursuing Ph.D. in MSE, current since 2023
Cyrus Koroni	Pursuing Ph.D. in MSE, current since 2021
Kincaid Graff	Pursuing Ph.D. in MSE, current since 2021
Joshua Russel	Pursuing Ph.D. in MSE, current since 2020
Tristan Olsen	Pursuing Ph.D. in MSE, current since 2019
Eric Gabriel	Pursuing Ph.D. in MSE, current since 2018
Pete Barnes	Ph.D. in MSE, awarded February 2021
Changjian Deng	Ph.D. in MSE awarded December 2018
Kassiopeia Smith	Ph.D. in MSE awarded June 2018
Matthew Swenson	Ph.D. in MSE awarded May 2017 (co-advised: main advisor is Janelle Wharry)

3.10.3. Masters Students Advised

Michael Reynolds	M.S. in MSE awarded July 2021 (co-advised: main advisor is Mike Hurley)
Andreas Savva	M.S. in MSE awarded May 2018
Kayla Yano	M.S. in MSE awarded May 2017 (co-advised: main advisor is Janelle Wharry)
Richard Cutler	M.S. in MSE awarded June 2015
Lance Patten	Pursuing Ph.D. in MSE, 2014 – 2015 (co-advised: main advisor is Janelle Wharry)
Joshua Huether	M.Eng. in MSE awarded December 2013

3.10.4. Undergraduate Students Who Were Advised in a Research Capacity

Alex Koisch	MSE major at Boise State, current since 2023
Ben Deboisblanc	MSE major at Boise State, current since 2023
Jake Cuzick (REU)	Mt. St. Mary University, summer 2023
Keegan Flaherty (REU)	Penn State, summer 2023
Robert Guzman (REU, LSAMP)	Boise State, Summer 2023
Jackson Prestwich	MSE major at Boise State, current since 2023
Riley Schrock	ENG major at Boise State, current since 2022
Rawan Bawazir	MSE major at Boise State, current since 2022
Katelyn Shadley (REU)	University of Idaho, summer 2022
Dylan Cox (REU)	Oregon State University, summer 2022
Kyle Reche (REU)	Northwest Nazarene University, summer 2022
Luke Landsberg	MSE major at Boise State, current since 2022
Sarah Pooley (LSAMP)	MSE major at Boise State, current since 2021
Allison Muenzer	MSE major at Boise State, current since 2021
Dylan Melander	MSE major at Boise State, current since 2021
Angel Corondo (LSAMP)	MSE major at Boise State, current since 2021
Stephanie McCallum (REU)	Washington State U., summer 2021
Dustin Nguyen (LSAMP, McNair, Veteran, Hispanic)	MSE major at Boise State, current since 2020
Kincaid Graff	B.S. in MSE at Boise State, 2020-2021
Max Cook	B.S. in MSE at Boise State, 2020-2021

Jorge Perez (CAMP, LSAMP, Hispanic) Physics major at Boise State, 2019 - 2021
Julie Pipkin MSE major at Boise State, 2019 - 2021
Kiev Dixon B.S. in MSE at Boise State, 2017-2021
Chris Jones B.S. in MSE at Boise State, 2017-2019
Paige Skinner B.S. in MSE at Boise State, 2017-2019
Malia Dustin (REU) Dixie University, Summer 2019
Laura Rill B.S. in MSE at Boise State, 2017-2018
Andy Lau B.S. in MBE at Boise State, 2015-2018
Sterling Croft B.S. in MSE at Boise State, 2017-2018
Sam Frisone (REU) North Carolina State University, Summer 2018
Devin Krasowski (REU) College of Idaho, Summer 2017
Riley Hunt B.S. in MSE at Boise State, 2014-2017
Devan Karsann C.S. in MSE at Boise State, 2015-2017
Bethany Williford B.S. in MSE at Boise State, 2014-2016
John Lewis (REU) Trinity University, Summer 2016
Aisley St Clair (REU) Wellesley College, Summer 2016
Ricardo Torsi B.S. in MSE at Boise State, 2016
Amaris Rodriguez (REU, Hispanic) Francis U., Summer 2015
Andreas Savva (REU) NJIT, Summer 2015
Riley Parrish B.S. in MSE at Boise State, 2013 – 2015
Jayson Mok B.S. in ECE at Boise State, 2013 – 2015
Michael Reinisch (REU) U. Arkansas, Summer 2014
Aaron Forde UW-Stout, Summer 2014
Cullen Hapner B.S. in MSE at Boise State, 2014
Carl Barcroft B.S. in ECE at Boise State, 2013

3.10.5. High Students Who Were Advised in a Research Capacity

Bryan Li Timberline High School, since 2024
Garrett Eppich Timberline High School, since 2023
Forrest Zeng Timberline High School, since summer 2023
Galib Grbic (SEED) Renaissance High School, 2022-2023
Will Wang Boise High School, since summer 2021-2023
Blayze Bernal (SEED) Nampa High School, Summer 2019
Quinn White Boise High School, Summer 2018
Eric Storch (SEED) Rocky Mountain High School, Summer 2018
Bethany Williford Idaho Virtual Academy, 2013-2014

3.10.6. High School Teachers Who Were Advised in a Research Capacity

Sam Goff (RET) Boise High School, summer 2023
Diana Jaramillo (RET, Hispanic) Vallivue High School, Summer 2019
Hailey Bull (RET) Vallivue High School, Summer 2017

3.10.7. Awards Received by Students

Sarah Pooley 2024 NSF Graduate Research Fellowship, NSF; Undergraduate Student Research Award, MSMSE, 2023
Alex Koisch Top Boise State Junior, Idaho Society of Professional Engineers, 2024
Jake Cuzick 2024 Goldwater Scholarship
Cyrus Koroni 2022-2023 and 2023 - 2024 Graduate Student Fellowship, ISGC, NASA
Tristan Olsen 2023-2024 Office of Science Graduate Student Research (SCGSR) award, DOE
Eric Gabriel 2022-2023 Office of Science Graduate Student Research (SCGSR) award, DOE; Graduate Student Research Award, MSMSE, 2023
Pete Barnes 2021-2022 Boise State University Distinguished Doctoral Scholarship Award; Graduate Student Research Award, MSMSE, 2021; Service Award, MSMSE, 2018

Allison Muenzer	Undergraduate Student of the Year, MSMSE, 2023; Fall 2022 HERC Fellowship; Top Boise State Junior, Idaho Society of Professional Engineers, 2022
Kassiopeia Smith	Graduate Student of the Year, MSMSE, 2018; Second Place (Student Oral Presentation Award), Electronic Materials and Applications (EMA) meeting, 2018; Honorable Mention (Poster Award), PNWAVS, 2018; The Electrochemical Society travel grant, Battery Division, 2017; Honorable Mention (Poster Award), CINT/Sandia User Meeting, 2017.
Changjian Deng	Graduate Student Research Award, MSMSE, 2019
Paige Skinner	Undergraduate Student of the Year, MSMSE, 2019; Outstanding Junior Level Engineering Student Award from the Idaho Society of Professional Engineers, 2018; Tau Beta Pi Engineering Honor Society Scholarship, 2018
Riley Hunt	Top Ten Scholars Award, Boise State, 2017
Matthew Swenson	Distinguished Achievement Award, MSMSE, Boise State, 2017
Riley Parrish	First-place in undergraduate student poster competition at 2014 Idaho Academy of Science Annual Conference; First-place in undergraduate student poster competition at 2014 Symposium of the Pacific Northwest Chapter of the AVS in conjunction with PREMIER meeting

4. Teaching

4.1. Courses Taught

4.1.1. Courses Taught at Boise State

Course #	Title	Term	Credits	Enrollment
MSE540	Advanced Processing/Electrochemical Processing	Spring 2024	3	12
MSE308	Thermodynamics of Materials	Fall 2023	3	16
MSE618	Phase Transformations and Kinetics	Spring 2023	4	10
MSE597	Materials for Energy Sustainability	Fall 2022	3	6
MSE618	Phase Transformations and Kinetics	Spring 2022	4	21
MSE308	Thermodynamics of Materials	Fall 2021	3	28
MSE601	Graduate Student Orientation	Fall 2021	1	15
MSE618	Phase Transformations and Kinetics	Spring 2021	4	10
MSE308	Thermodynamics of Materials	Fall 2020	3	30
MSE601	Graduate Student Orientation	Fall 2020	1	11
MSE308	Thermodynamics of Materials	Fall 2019	3	36
MSE246	Materials for Society (implemented service learning project with Girl Scouts of Silver Sage)	Spring 2019	3	41
MSE540	Advanced Processing/Electrochemical Processing	Fall 2018	3	4
MSE498/598	Mater. Sci. & Eng. Seminar	Fall 2018	1	9
MSE618	Phase Transformations and Kinetics	Spring 2018	4	20
MSE498/598	Mater. Sci. & Eng. Seminar	Spring 2018	1	12
MSE497/597	Materials for Energy Sustainability (implemented service learning project with Girl Scouts of Silver Sage)	Fall 2017	3	5
MSE498/598	Mater. Sci. & Eng. Seminar	Fall 2017	1	13
MSE618	Phase Transformations and Kinetics	Spring 2017	4	12
MSE540	Advanced Processing/Electrochemical Processing	Fall 2016	3	7

MSE618	Phase Transformations and Kinetics	Spring 2016	4	13
MSE618	Phase Transformations and Kinetics	Spring 2015	4	9
MSE497/597	Materials for Energy Sustainability	Fall 2014	3	10
MSE618	Phase Transformations and Kinetics	Spring 2014	4	13
MSE540	Advanced Processing/Electrochemical Processing	Fall 2013	3	6
MSE618	Phase Transformations and Kinetics	Spring 2013	4	21

4.1.2. Other Teaching Experiences

Semester	Course Name	Enrollment	Contribution
Fall 2013	MSE 608: Solid State Thermodynamics	21	Presented one guest lecture on electrochemistry and pourbaix diagram
Fall 2013	ENGR 120 / 130	100	Presented an MSE overview lecture
Fall 2012	MSE 308: Thermodynamics of Materials	14	Presented one guest lecture on electrochemistry

4.2. Professional Development

Date	Workshop Title	# Hours
2020	REMOTE: The Connected Faculty Summit (Arizona State University)	12
2018 - 19	WIDER PERSIST: MSMSE Teaching Circle	Monthly throughout the semesters
Mar 29, 2017	Moving Beyond the Monotony: Creating Engaging and Effective Discussion Boards	1
Oct 18, 2016	Active Learning @ Lunch - Making It Real: Using Case-Based Teaching to Engage Students in Their Learning	1
Apr 22, 2016	Active Learning @ Lunch: The Nuts and Bolts of Flipping the Engineering Classroom	1.3
May 13 -14, 2015	Summer Mobile Learning Institute	2 days
Jan 30, 2015	Asking questions about student learning: how do I know what I am doing is making a difference?	1
Nov 20, 2014	Giving grades: a discussion about our grading philosophies	1
Oct 3, 2014	Assessing student learning: tools to determine what your students really know before it's too late	1.5
Sep 24, 2014	Creating Effective Test Questions (Part 2): Essay -Type	1.25
Apr 1, 2014	Community Engagement and NSF Broader Impacts	1
Feb 28, 2014	Mathematica for Education and Research	1
Feb 7, 2014	Investigating Student Learning: Using classroom assessment projects to inform your teaching	1.5
Fall 2015	STEM Education Research Scholars Group	Biweekly throughout the semester
Sep 18, 2013	Difference Matters: Strategies for Inclusive Teaching	1.5
Feb 11, 2013	Faculty Connections - Good Advice about Tenure and Promotion	1.5
Jan 30, 2013	Active Learning @ Lunch-Jumping Feet First into Team-Based Learning: Lessons Learned and Plans for the Future	1
Jan 10, 2013	Introduction to Effective Course Design	3.5

5. Service

5.1. Service to the Micron School of Materials Science and Engineering (Include service to the Ph.D. Program.)

2019-2022	Associate Director, Graduate Program
2022-present	Mentor: CAES REU program - Advanced Manufacturing for a Sustainable Energy Future
2014-present	Mentor: MSMSE NSF REU/RET program – Materials for Energy and Sustainability
2018-present	Tenure Progress Review Committee
2013-present	Ph.D. dissertation committees
2013-present	M.S. thesis committees
2012-present	Library department representative, Albertson Library
2013-present	Department seminar speaker host
2021-2022	Search committee chair – MSMSE Director
2017-2018	MSMSE seminar organizer
2013-2017	Committee for the graduate comprehensive exam: preparing and grading both written and oral exam problems
2013-2017	CAES Research Capability Coordinator – Energy Storage
2014-2016	Admissions and Recruiting Committee of the MSE PhD program
2013-2014	Curriculum and Comprehensive Exam planning committee of the MSE PhD program
2013-2014	Graduate Assistants planning committee of the MSE PhD program
2013-2014	Faculty advisor for senior design project
2012-2013	Search Committee for 1 faculty in MSE-Physics joint hire (committee member)

5.2. Service to the College of Engineering

2019-present	COEN Graduate Study Committee
2015-2016	Faculty Search Committee in Chemistry Department (committee member)
2016	Evening with a Faculty in the Engineering and Innovation College
2013-2014	TOEFL subcommittee

5.3. Service to the University

2023-present	CoC Nat'l Commission WG on the Future of Sustainability
2023	Institute/center review council
2022	Group Lead, USICA Working Group 9: Advanced energy, batteries, and industrial efficiency
2022	Mentor: Center for Advanced Energy Studies REU program on Advanced Manufacturing for a Sustainable Energy Future
2020-present	Mentor: LSAMP scholar
2018-present	Mentor: ACS SEED scholar
2020-2021	Mentor: McNair scholar
2018-2021	Mentor: SAGE scholar
2019-2021	Mentor: CAMP scholar
2016-2021	Panelist at the CAREER seminars
2019	McNair Scholars Brown Bag
2013-2017	Research Capability Coordinator, Center for Advanced Energy Studies

5.4. Service to the Profession

5.4.1. Editorial and Professional Society

- **Associate Editor** – *Clean Energy* (Oxford University Press), 2022 - 2024

- **Book Section Editor** of "Encyclopedia of Energy Storage" by Elsevier, 2022
- **Editorial Board** - *Energy Science and Engineering* (Wiley), 2022 – present
- **Advisory Board** – *Journal of Materials Chemistry A* (RSC), *Materials Advances* (RSC), 2023 - present
- **Guest Editor** – Special Issue "*Women in Battery Science and Technology*" for **Frontiers In Batteries and Electrochemistry;** Special Issue "*Sodium Ion Batteries, Sodium Batteries, and Sodium Supercapacitors*" for **Nano Energy** (Elsevier)
- Featured in the "Women Scientists at the Forefront of Energy Research" Virtual Issue series (Part 4) at *ACS Energy Letters*
- Committee member – ACerS W. David Kingery Award committee, 2021 – present; Strategic Planning & Emerging Opportunities Committee, 2022 - present
- **Chair**, the Electronics Division at the American Ceramic Society, 2021-2022
- **Chair-Elect** for the Electronics Division at the American Ceramic Society, 2020-21
- Selected for Volunteer Spotlight, a program through which recognizes a member who demonstrates outstanding service to The American Ceramic Society through volunteerism, ACerS, March, 2021
- **Vice-Chair** for the Electronics Division at the American Ceramic Society, 2019-20
- **Secretary** for the Electronics Division at the American Ceramic Society, 2018-19
- Panelist, 2018 NSF Career Development Workshop in Ceramics, Columbus, October 13, 2018
- **Secretary-Elect** for the Electronics Division at the American Ceramic Society, 2017-18

5.4.2. Meeting and Symposium Organizer

- Workshop co-organizer of 2023 NSF Professional Development Workshop in Ceramics
- Symposium co-organizer of MRS Fall 2022 Meeting, 2022
- **Lead-Organizer** of the Symposium "Functional Defects in Electroceramic Materials", MS&T 2021
- Symposium co-organizer of MRS Spring 2021 Meeting, virtual, 2021
- Symposium co-organizer of ACS Spring 2021 Meeting, virtual, 2021
- **Organizing meeting chair** of the EMA 2021 International Conference, Orlando
- **Meeting co-chair** of the EMA 2020 International Conference, Orlando
- **Lead-Organizer** of the Symposium "Functional Defects in Electroceramic Materials", MS&T 2020
- Co-Organizer of the Symposium "Beyond Lithium Ion Batteries" at the 236th ECS Meeting, October 13-17, Atlanta, 2019
- Co-Organizer of the Symposium "Large-Scale Energy Storage" at the 233rd ECS Meeting, Seattle, 2018
- **Lead Organizer** of the Symposium "Ion conducting Ceramics" at the Electronic Materials and Applications Meeting, Orlando, 2016 – 2018
- Co-Organizer of "2017 NSF Career Development Workshop in Ceramics", 2017
- Co-Organizer of the Symposium "Batteries and Supercapacitors" at the 251st ACS National Meeting & Exposition, San Diego, 2016
- Co-Organizer of "*2015 CAES* Materials, Modeling, Simulation and Visualization Workshop", CAES, 2015
- **Lead-Organizer** of the Symposium "Symposium G: Next Generation Electrochemical Energy Storage and Conversion Systems" at the Spring MRS Meeting, San Francisco, 2015
- Co-Organizer of "2014 CAES Energy Storage and Ion Conducting Materials and Modeling workshop", CAES, 2014
- **Lead-Organizer** of the Symposium "Batteries and Fuel Cell Technologies" at the 248th ACS National Meeting & Exposition, San Francisco, 2014
- Co-Organizer of the Symposium "Hydrogen Energy" at the 246th ACS National Meeting & Exposition, Indianapolis, 2013

5.4.3. Reviewer

- **Panel reviewer** for National Science Foundation and Department of Energy
- **Regular ad hoc reviewer** for ACS PRF, NSF, DOE, NASA

- **Regular Reviewer** for *Nature Communications*, *Science Advances*, *Advanced Materials, Advanced Functional Materials, Advanced Energy Materials*, *ACS Nano, Chemical Review, Chemical Society Reviews, Angewandte Chemie International Edition, Chemistry of Materials, Materials Today, Nano Energy, Cell Reports Physical Science, Energy & Environmental Science, Small Methods, Small, ACS Applied Materials & Interfaces, Chemistry - A European Journal, Journal of The Electrochemical Society, Journal of Power Sources, Nanoscale, Journal of Physical Chemistry, Journal of Materials Chemistry A*, *Journal of the American Ceramic Society*, *Batteries & Supercapacitors*, *Radiation Physics and Chemistry*, etc.

5.5. Service to the Community

- Developed a STEM patch program and hosted two "Energy for Sustainability" workshops to the girl scouts at the Girl Scouts of the Silver Sage, 2017-present
- Hosted a "Sustainable Energy and Materials" program at the annual Engineering & Science Festival, Boise State, 2014 – present
- Hands-on workshop on Energy Storage to the Idaho Science and Aerospace Scholars (ISAS), 2014 – 2018
- Provided hands-on STEM demos for STEAM Day at Vallivue Middle School, Caldwell, 2018
- Hands-on activities on energy and materials in e-GIRL camp, 2014 – present
- Created a science blog to interact with students in in a high Hispanic population school – Vallivue High School (high Hispanic population), 2015
- Provided a STEM program at Morseley Boys and Girls club, 2015
- Hosting high school students for summer and year-long internships

Highlights at Boise State University

- Mentored 45 undergraduate research students, 40% of whom were women or Hispanic students
- Expanded my research portfolio and received awards of >$6.6M (>$3M to my lab, including award from DOE BES core program) in the last 5 years
- Since last promotion at Boise State: **41** peer-reviewed publications (30 as corresponding, 11 collaborative; ~8 publications/yr) including publication at *Nature Materials* (corresponding), **3** invited book chapters, **1** US patent, and 1 US patent application
- Served as an officer for the Electronics Division at the American Ceramic Society and is the present chair of the division, helped the increase of the membership of EDiv
- Developed new STEM programs for Mathematics department and local girl scouts community