

## VERONICA AUGUSTYN

Jake & Jennifer Hooks Distinguished Scholar in Materials Science & Engineering  
University Faculty Scholar  
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### EMPLOYMENT HISTORY

08/2022 – present	Jake & Jennifer Hooks Distinguished Scholar in Materials Science & Engineering
08/2021 – present	Associate Editor, Journal of Materials Chemistry A & Materials Advances
02/2019 – present	University Faculty Scholar, NC State University
08/2021 – present	Associate Professor of Materials Science & Engineering, NC State University
08/2015 – 07/2021	Assistant Professor of Materials Science & Engineering, NC State University
08/2013 – 06/2015	Postdoctoral Fellow, The University of Texas at Austin Advisor: Prof. Arumugam Manthiram

### EDUCATION

2013	Ph.D., Materials Science & Engineering, University of California, Los Angeles Advisor: Prof. Bruce Dunn Dissertation Title: “Characterization of Nanostructured Materials for Lithium-Ion Batteries and Electrochemical Capacitors”
2007	B.S., Materials Science & Engineering, The University of Arizona

### I. AWARDS & HONORS

2023	U.S. Kavli Frontiers of Science Symposium Invitee
2021	ChemComm Emerging Investigator
2021	NC State Goodnight Early Career Innovator
2021	NC State College of Engineering George H. Blessis Advising Award
2019	U.S. Department of Energy Early Career Award
2019	Sloan Research Fellowship in Chemistry
2019	RS2E Young Energy Storage Scientist (YESS) Award, 2 <sup>nd</sup> Place
2018	Journal of Materials Chemistry A Emerging Investigator
2017	BASF/VW Award Electrochemistry Finalist
2017	Research Corporation for Science Advancement Scialog Fellow, Advanced Energy Storage
2017	China-America Frontiers of Engineering Symposium Participant
2017	U.S. National Science Foundation CAREER Award
2016	ORAU Ralph E. Powe Junior Faculty Enhancement Award
2012	UCLA Graduate Division Dissertation Year Fellowship
2012	1st Joint U.S.-Africa Materials Initiative Fellowship

### II. PEER-REVIEWED PUBLICATIONS

underlined are advised students & postdocs, + invited contribution, \*corresponding author

- 1) J. Fortunato, Y.K. Shin, M.A. Spencer, A.C.T. van Duin, & V. Augustyn.\*+ “Choice of Electrolyte Impacts the Selectivity of Electrochemical PCET Reactions on Hydrogen Titanate.” Submitted.

- 2) W.-Y. Tsai, S. Boyd, K. Ganeshan, S. Saeed, Y. Gao, A.C.T. van Duin, V. Augustyn, & N. Balke.\* “Effect of electrode/electrolyte coupling on birnessite ( $\delta$ -MnO<sub>2</sub>) mechanical response and degradation.” Submitted.
- 3) M.S. Hossain, A.I.B. Romo, S.T. Putnam, J. Dawlaty, V. Augustyn, & J. Rodríguez-López.\* “Electrode potential driven dissociation of N-heterocycle-BF<sub>3</sub> adducts: a possible manifestation of the electro-inductive effect.” Under revision.
- 4) V. Kabra, B. Birn, I. Kamboj, V. Augustyn, & P. Mukherjee.\* “Mesoscale Machine Learning Analytics for Electrode Property Estimation.” *Journal of Physical Chemistry C*, 126 (2022) 14413.
- 5) J. Fortunato, J.W. Jordan, G.N. Newton, D.A. Walsh, & V. Augustyn.\*+ “Electrochemical Reactivity of Atomic and Molecular Species under Solid-state Confinement.” *Current Opinion in Electrochemistry*, 34 (2022) 101014.
- 6) J.B. Mitchell, R. Wang, J.S. Ko, J.W. Long, & V. Augustyn.\*+ “Critical Role of Structural Water for Enhanced Li<sup>+</sup> Insertion Kinetics in Crystalline Tungsten Oxides.” *Journal of the Electrochemical Society*, 169 (2022) 030534.
- 7) S. Fleischmann,\* Y. Zhang, X. Wang, P.T. Cummings, J. Wu, P. Simon,\* Y. Gogotsi,\* V. Presser,\* & V. Augustyn.\* “Continuous Transition from Double-Layer to Faradaic Charge Storage in Confined Electrolytes.” *Nature Energy*, 7 (2022) 222-228.
- 8) M.A. Spencer, J. Fortunato, & V. Augustyn.\*+ “Electrochemical Proton Insertion Modulates the Hydrogen Evolution Reaction on Tungsten Oxides.” *Journal of Chemical Physics*, 156 (2022) 064704.
- 9) S. Saeed, J. Fortunato, K. Ganeshan, A.C.T. van Duin, & V. Augustyn.\*+ “Decoupling Proton and Cation Contributions to Capacitive Charge Storage in Birnessite in Aqueous Electrolytes.” *ChemElectroChem*, 8 (2021) 4371.
- 10) M.A. Spencer, O. Yildiz, I. Kamboj, P.D. Bradford, & V. Augustyn.\* “Toward Deterministic 3D Energy Storage Electrode Architectures via Electrodeposition of Molybdenum Oxide onto CNT Foams.” *Energy & Fuels*, 35 (2021) 16183.
- 11) S. Boyd, K. Ganeshan, W.-Y. Tsai, T. Wu, S. Saeed, D.-E. Jiang, N. Balke, A.C.T. van Duin, & V. Augustyn.\* “Effects of Interlayer Confinement and Hydration on Capacitive Charge Storage in Birnessite.” *Nature Materials*, 20 (2021) 1689.
- 12) S. Saeed, S. Boyd, W.-Y. Tsai, R. Wang, N. Balke, & V. Augustyn.\*+ “Understanding Electrochemical Cation Insertion into Prussian Blue from Electrode Deformation and Mass Change.” *Chemical Communications*, 57 (2021) 6744-6747.
- 13) K. Liang, R.A. Matsumoto, W. Zhao, N.C. Osti, I. Popov, B.P. Thapaliya, S. Fleischmann, S. Misra, K. Prenger, M. Tygai, E. Mamontov, V. Augustyn, R. Unocic, A.P. Sokolov, S. Dai, P. Cummings, & M. Naguib.\* “Engineering the Interlayer Spacing by Pre-Intercalation for High Performance MXene Electrodes in Room Temperature Ionic Liquid.” *Advanced Functional Materials*, 31 (2021) 2104007.
- 14) R. Wang, Y. Sun, A. Brady, S. Fleischmann, T. Eldred, W. Gao, H.-W. Wang, D.-E. Jiang, & V. Augustyn.\* “Fast Proton Insertion in Layered H<sub>2</sub>W<sub>2</sub>O<sub>7</sub> via Selective Etching of an Aurivillius Phase.” *Advanced Energy Materials*, 11 (2021) 2003335.
- 15) W.Y. Tsai, R. Wang, S. Boyd, V. Augustyn, & N. Balke.\* “Probing Local Electrochemistry via Mechanical Cyclic Voltammetry Curves.” *Nano Energy*, 81 (2021) 105592.
- 16) B.S. Guiton,\* M. Stefik,\* V. Augustyn, S. Banerjee, C.J. Bardeen, B.M. Bartlett, J. Li, V. López-Mejías, L.R. MacGillivray, A. Morris, E.E. Rodriguez, A.C.S. Samia, H. Sun, P. Sutter, & D.R. Talham. “Frontiers in Hybrid and Interfacial Materials Chemistry Research.” *MRS Bulletin*, 45 (2020) 951-964.
- 17) B.B. Lynch, A.P. Kelliher, B.D. Anderson, A. Japit, M.A. Spencer, M.H. Rizvi, M.F. Sarac, V. Augustyn, & J.B. Tracy.\* “Sulfidation and Selenidation of Nickel Nanoparticles.” *Carbon Energy*, 3 (2021) 582.
- 18) V. Augustyn,\*+ R. Wang, N. Balke, M. Pharr, & C.B. Arnold. “Deformation during Electrosorption and Insertion-type Charge Storage: Origins, Characterization, and Design of Materials for High Power.” *ACS Energy Letters*, 5 (2020) 3548 - 3559.

- 19) R. Wang, S. Boyd, P. Bonnesen, & V. Augustyn.\*+ “Effect of Water in a Non-Aqueous Electrolyte on Electrochemical  $Mg^{2+}$  Insertion into  $WO_3$ .” *Journal of Power Sources*, 477 (2020) 229015.
- 20) S. Boyd, N.R. Geise, M.F. Toney, & V. Augustyn.\*+ “High Power Energy Storage via Electrochemically Expanded and Hydrated Manganese-Rich Oxides.” *Frontiers in Chemistry*, 8 (2020) 715.
- 21) S. Fleischmann, J.B. Mitchell, R. Wang, C. Zhan, D.E. Jiang, V. Presser, & V. Augustyn.\*+ “Pseudocapacitance: From Fundamental Understanding to High Power Energy Storage Materials.” *Chemical Reviews*, 120 (2020) 6738-6782.
- 22) S. Fleischmann, M.A. Spencer, & V. Augustyn.\*+ “Electrochemical Reactivity under Confinement Enabled by Molecularly Pillared 2D and Layered Materials.” *Chemistry of Materials*, 32 (2020) 3325-3334.
- 23) S. Fleischmann, Y. Sun, N.C. Osti, R. Wang, E. Mamontov, D.E. Jiang, & V. Augustyn.\* “Interlayer Separation in Hydrogen Titanates Enables Electrochemical Proton Intercalation.” *Journal of Materials Chemistry A*, 8 (2020) 412-421.
- 24) J.B. Mitchell, N.R. Geise, A.R. Paterson, N.C. Osti, Y. Sun, S. Fleischmann, R. Zhang, L.A. Madsen, M.F. Toney, D.E. Jiang, A.I. Kolesnikov, E. Mamontov, & V. Augustyn.\* “Confined Interlayer Water Promotes Structural Stability for High-Rate Electrochemical Proton Intercalation in Tungsten Oxide Hydrates.” *ACS Energy Letters*, 4 (2019) 2805-2812.
- 25) M.A. Spencer & V. Augustyn.\*+ “Free-standing Transition Metal Oxide Electrode Architectures for Electrochemical Energy Storage.” *Journal of Materials Science*, 54 (2019) 13045-13069.
- 26) V. Augustyn,\* M.T. McDowell,\* & A. Vojvodic.\* “Toward an Atomistic Understanding of Solid-State Electrochemical Interfaces for Energy Storage.” *Joule*, 2 (2018) 2189-2193.
- 27) S. Boyd, R. Dhall, J.M. LeBeau, & V. Augustyn.\*+ “Charge Storage Mechanism and Degradation of P2-Type Sodium Transition Metal Oxides in Aqueous Electrolytes.” *Journal of Materials Chemistry A*, 6 (2018) 22266-22276.
- 28) R. Wang, J.B. Mitchell, Q. Gao, W.-Y. Tsai, S. Boyd, M. Pharr, N. Balke, & V. Augustyn.\* “Operando AFM Reveals Mechanics of Structural Water Driven Battery-to-Pseudocapacitor Transition.” *ACS Nano*, 12 (2018) 6032-6039.
- 29) S. Boyd & V. Augustyn.\*+ “Transition Metal Oxides for Aqueous Sodium-Ion Electrochemical Energy Storage.” *Inorganic Chemistry Frontiers*, 5 (2018) 999-1015.
- 30) V. Augustyn\*+ & Y. Gogotsi. “2D Materials with Nanoconfined Fluids for Electrochemical Energy Storage.” *Joule*, 1 (2017) 443-452.
- 31) S. Niu, R. McFeron, F. Godínez-Salomón, B.S. Chapman, C.A. Damin, J.B. Tracy, V. Augustyn, & C.B. Rhodes.\* “Enhanced Electrochemical Lithium-Ion Charge Storage of Iron Oxide Nanosheets.” *Chemistry of Materials*, 29 (2017) 7794-7807.
- 32) R. Wang, C.-C. Chung, Y. Liu, J.L. Jones, & V. Augustyn.\*+ “Electrochemical Intercalation of  $Mg^{2+}$  into Anhydrous and Hydrated Crystalline Tungsten Oxides.” *Langmuir*, 33 (2017) 9314-9323.
- 33) J.S. Daubert, R. Wang, J.S. Ovental, H.F. Barton, R. Rajagopalan, V. Augustyn, & G.N. Parsons.\* “Intrinsic Limitations of Atomic Layer Deposition for Pseudocapacitive Metal Oxides in Porous Electrochemical Capacitor Electrodes.” *Journal of Materials Chemistry A*, 5 (2017) 13086-13097.
- 34) J.B. Mitchell, W.C. Lo, A. Genc, J. LeBeau, & V. Augustyn.\* “Transition from Battery to Pseudocapacitive Behavior via Structural Water in Tungsten Oxide.” *Chemistry of Materials*, 29 (2017) 3928-3937.
- 35) V. Augustyn.\*+ “Tuning the Interlayer of Transition Metal Oxides for Electrochemical Energy Storage.” *Journal of Materials Research*, 32 (2017) 2-15.

Research publications from Ph.D. and postdoctoral research:

- 36) V. Augustyn & A. Manthiram.\* “Effects of Chemical vs. Electrochemical Delithiation on the Oxygen Evolution Reaction Activity of Nickel-rich Layered  $LiMO_2$ .” *J. Phys. Chem. Lett.*, 6 (2015) 3787-3791.

- 37) V. Augustyn, S. Therese, T.C. Turner, & A. Manthiram.\* "Nickel-Rich Layered  $\text{LiNi}_{1-x}\text{M}_x\text{O}_2$  (M = Mn, Fe, and Co) Electrocatalysts with High Oxygen Evolution Reaction Activity." *Journal of Materials Chemistry A*, 3 (2015) 16604-16612.
- 38) N. Colligan, V. Augustyn, & A. Manthiram.\* "Evidence of Localized Lithium Removal in Layered and Spinel  $\text{Li}_{1-x}\text{CoO}_2$  ( $0 \leq x \leq 0.9$ ) under Oxygen Evolution Reaction Conditions." *Journal of Physical Chemistry C*, 119 (2015) 2335-2340.
- 39) V. Augustyn & A. Manthiram.\* "Characterization of Layered  $\text{LiMO}_2$  Oxides for the Oxygen Evolution Reaction of Metal-Air Batteries." *ChemPlusChem*, 80 (2015) 422-427.
- 40) I.E. Rauda, V. Augustyn, L.C. Saldarriaga-Lopez, X. Chen, L.T. Schelhas, G.W. Rubloff, B. Dunn, & S.H. Tolbert.\* "Nanostructured Pseudocapacitors based on Atomic Layer Deposition of  $\text{V}_2\text{O}_5$  onto Conductive Nanocrystal-Based Mesoporous ITO Scaffolds." *Advanced Functional Materials*, 24 (2014) 6717-6728.
- 41) V. Augustyn, P. Simon, & B. Dunn.\* "Pseudocapacitive Oxide Materials for High-Rate Electrochemical Energy Storage." *Energy & Environmental Science*, 7 (2014) 1597-1614.
- 42) J. Come, V. Augustyn, J.W. Kim, P. Rozier, P.-L. Taberna, P. Gogotsi, J.W. Long, B. Dunn, & P. Simon.\* "Electrochemical Kinetics of Nanostructured  $\text{Nb}_2\text{O}_5$  Electrodes." *Journal of the Electrochemical Society*, 161 (2014) A718-A725.
- 43) V. Augustyn, E.R. White, J. Ko, G. Grüner, B.C. Regan, & B. Dunn.\* "Lithium-Ion Storage Properties of Titanium Oxide Nanosheets." *Materials Horizons*, 1 (2014) 219-223.
- 44) V. Augustyn, J. Come, M.A. Lowe, J.W. Kim, P.-L. Taberna, S.H. Tolbert, H.D. Abruña, P. Simon, & B. Dunn.\* "High Rate Electrochemical Energy Storage via  $\text{Li}^+$  Intercalation Pseudocapacitance." *Nature Materials*, 12 (2013) 518-522.
- 45) I. Rauda<sup>†</sup>, V. Augustyn<sup>†</sup>, B. Dunn, & S.H. Tolbert.\* "Enhancing Pseudocapacitive Charge Storage in Polymer Templated Mesoporous Materials." *Accounts of Chemical Research*, 46 (2013) 1113-1124. (<sup>†</sup>equal contribution)
- 46) V. Augustyn & B. Dunn.\* "Low-Potential Lithium-Ion Reactivity of Vanadium Oxide Aerogels." *Electrochimica Acta*, 88 (2013) 530-535.
- 47) M. Hmadeh, Z. Lu, Z. Liu, F. Gándara, H. Furukawa, S. Wan, V. Augustyn, R. Chang, L. Liao, F. Zhou, E. Perre, V. Ozolins, X. Duan, B. Dunn, Y. Yamamoto, O. Terasaki, & O.M. Yaghi.\* "New Porous Crystals of Extended Metal-Catecholates." *Chemistry of Materials*, 24 (2012) 3511-3513.
- 48) I. Rauda, R. Buonsanti, L.C. Saldarriaga-Lopez, K. Benjauthrit, L.T. Schelhas, M.M. Stefik, V. Augustyn, J. Ko, B. Dunn, U. Wiesner, D.J. Milliron, & S.H. Tolbert.\* "A General Method for the Synthesis of Hierarchical Nanocrystal-Based Mesoporous Materials." *ACS Nano*, 6 (2012) 6386-6399.
- 49) E.R. White, S.B. Singer, V. Augustyn, W.A. Hubbard, M. Mecklenburg, B. Dunn, & B.C. Regan.\* "In Situ Transmission Electron Microscopy of Lead Dendrites and Lead Ions in Aqueous Solution." *ACS Nano*, 6 (2012) 6308-6317.
- 50) Z. Chen, V. Augustyn, X. Jia, Q. Xiao, B. Dunn, & Y.F. Lu.\* "High-Performance Sodium-Ion Pseudocapacitors Based on Hierarchically Porous Nanowire Composites." *ACS Nano*, 6 (2012) 4319-4327.
- 51) J.W. Kim, V. Augustyn, & B. Dunn.\* "The Effect of Crystallinity on the Rapid Pseudocapacitive Response of  $\text{Nb}_2\text{O}_5$ ." *Advanced Energy Materials*, 2 (2012) 141-148.
- 52) X. Wang, G. Li, Z. Chen, V. Augustyn, X. Ma, G. Wang, B. Dunn, & Y.F. Lu.\* "High-Performance Supercapacitors Based on Nanocomposites of  $\text{Nb}_2\text{O}_5$  Nanocrystals and Carbon Nanotubes." *Advanced Energy Materials*, 1 (2011) 1089-1093.
- 53) Z. Chen, V. Augustyn, J. Wen, Y.W. Zhang, M.Q. Shen, B. Dunn, & Y.F. Lu.\* "High-Performance Supercapacitors Based on Intertwined CNT/ $\text{V}_2\text{O}_5$  Nanowire Nanocomposites." *Advanced Materials*, 23 (2011) 791-795.

- 54) V. Augustyn & B. Dunn.\* “Vanadium Oxide Aerogels: Nanostructured Materials for Enhanced Energy Storage.” *Comptes Rendus Chime*, 13 (2010) 130-141.

### III. NON-PEER REVIEWED EDUCATION PUBLICATIONS

1. V. Augustyn.\* [“New Materials are Powering the Battery Revolution.”](#) *The Conversation*, 4 October 2018.
2. V. Augustyn\* & J.P. Eneku.\* “Building the SciBridge between Africa and the United States.” *AAAS Science & Diplomacy*, December 2015.

### IV. BOOK CHAPTERS

1. R. Ding, M. Chagnot, S. Saeed, & V. Augustyn.\* “Nanostructured Materials for Electrochemical Capacitors” in *Comprehensive Inorganic Chemistry III* (eds. K. Poepelmeier & J. Reedijk, Elsevier). In press.
2. E.C. Self, D. Devendrasinh, V. Augustyn, & J. Nanda.\* “An Overview of Transition Metal Oxides for Electrochemical Energy Storage” in *Transition Metal Oxides for Electrochemical Energy Storage* (eds. V. Augustyn & J. Nanda, Wiley-VCH GmbH).
3. S. Fleischmann, I. Kamboj, & V. Augustyn.\* “Nanostructured Transition Metal Oxides for Electrochemical Energy Storage” in *Transition Metal Oxides for Electrochemical Energy Storage* (eds. V. Augustyn & J. Nanda, Wiley-VCH GmbH).

### V. INVITED PRESENTATIONS

\* cancelled due to COVID-19 pandemic; <sup>5</sup> declined due to parental leave

#### V.A. INVITED SEMINARS

	Institution	Location	Date
1.	The Univ. of Texas at Austin, Texas Materials Institute	Austin, TX	F2023
2.	Univ. of Florida, Dept. of Mater. Sci. & Engr.	Gainesville, FL	10/2023
3.	Arizona State University, School of Molecular Sciences	Phoenix, AZ	09/2023
4.	Washington Univ. in St. Louis, Dept. of Chemistry	St. Louis, MO	F2023
5.	Harvard-MIT Inorganic Seminar Series	Boston, MA	05/2023
6.	Univ. of California, Berkeley, Dept. of Chemistry	Berkeley, CA	04/2023
7.	Univ. of Southern California, Dept. of Chemistry	Los Angeles, CA	02/2023
8.	Stanford Univ. StorageX International Symposium	virtual	12/2022
9.	Zhengzhou Univ.	Virtual	12/2022
10.	Michigan State Univ., Dept. of Chem. Engr. & Mat. Sci.	virtual	02/2022
11.	Colorado School of Mines, Dept. of Chemistry	virtual	01/2022
12.	International Graduate School for Battery Chemistry (Germany)	virtual	11/2021
13.	GENESIS EFRC Brown Bag Seminar	virtual	11/2021
14.	Materials Chain Seminars, Univ. Alliance Ruhr (Germany)	virtual	10/2021
15.	ECS Webinar Series	virtual	08/2021
16.	Max-Planck-Institute fuer Eisenforschung GmbH (Germany)	virtual	07/2021
17.	High Point Univ., Dept. of Chemistry	High Point, NC	06/2021
18.	Univ. of Texas at Austin ECS Student Chapter Webinar	virtual	05/2021
19.	Purdue Univ. ECS Student Chapter Webinar	virtual	04/2021
20.	Technical Univ. of Denmark, Catalysis Theory Center Webinar	virtual	04/2021

21. Univ. of Arizona/Arizona State, MateriAlZ Seminar Series	virtual	03/2021
22. The Univ. of Utah, Dept. of Materials Sci. & Engr.	virtual	01/2021
23. Univ. of North Carolina at Chapel Hill, Dept. of Applied Physical Sci.	virtual	11/2020
24. The Ohio State Univ., Dept. of Mech. & Aero. Engr.	virtual	11/2020
25. Univ. of Illinois at Urbana-Champaign, Dept. of Chem. & Bio. Engr.	virtual	10/2020
26. Synergy Institute of Tech. (India), Dept. of Mech. Engr.	virtual	10/2020
27. Univ. of South Carolina, Dept. of Chem. & Biochem.	Columbia, SC	02/2020
28. Florida International Univ., Dept. of Mater. Sci. & Engr.	Miami, FL	04/2019
29. Princeton Univ., Princeton Inst. for the Sci. and Tech. of Mater. (PRISM) & Princeton Center for Complex Mater. (PCCM)	Princeton, NJ	03/2019
30. Texas A&M Univ., Dept. of Materials Sci. & Engr.	College Station, TX	02/2019
31. Massachusetts Inst. of Tech., Dept. of Mater. Sci. & Engr.	Cambridge, MA	05/2018
32. Northwestern Univ., Dept. of Mater. Sci. & Engr.	Evanston, IL	11/2017
33. Virginia Tech Univ., Dept. of Chem.	Blacksburg, VA	09/2017
34. Univ. of North Carolina at Chapel Hill, Dept. of Chem.	Chapel Hill, NC	09/2017
35. Wake Tech Community College	Raleigh, NC	08/2017
36. Shanghai Normal Univ., Dept. of Chem.	Shanghai, China	06/2017
37. Univ. of New South Wales, School of Chem. Engr.	Sydney, Australia	06/2017
38. Univ. of Tech. Sydney, Clean Energy Tech. Centre	Sydney, Australia	06/2017
39. Univ. of Wollongong, Inst. for Superconducting & Electronic Mater.	Wollongong, Australia	06/2017
40. Oak Ridge National Lab, Mater. Sci. Division	Oak Ridge, TN	05/2017
41. The Univ. of Arizona, Dept. of Mater. Sci. & Engr.	Tucson, AZ	04/2017
42. Wake Forest Univ., Dept. of Physics	Winston-Salem, NC	02/2017
43. Texas State Univ., Dept. of Chem.	San Marcos, TX	10/2016
44. Shaw University Science Colloquium	Raleigh, NC	08/2016
45. North Carolina State Univ., Dept. of Physics	Raleigh, NC	04/2016
46. Tokyo Denki Univ., Dept. of Green & Sustainable Chem.	Tokyo, Japan	06/2016
47. CSIRO Manufacturing	Lindfield, Australia	03/2016
48. Univ. of New South Wales, Dept. of Mater. Sci. & Engr.	Sydney, Australia	03/2016
49. North Carolina State Univ., Dept. of Chem. & Bio. Engr.	Raleigh, NC	10/2015

## V.B. INVITED KEYNOTE CONFERENCE &amp; WORKSHOP PRESENTATIONS

Conference / Workshop Title	Location	Date
50. 2023 International Battery Materials Association Meeting	Austin, TX	03/2023
51. 13 <sup>th</sup> Center for Electrochemistry at the Univ. of Texas at Austin Workshop on Electrochemistry	Austin, TX	02/2023
52. 73 <sup>rd</sup> Meeting of the International Society of Electrochemistry	virtual	09/2022
53. 2022 Gordon Research Conf. on Solid-State Chem. <sup>§</sup>	New London, NH	07/2022
54. 2020 Gordon Research Conf. on Solid State Studies in Ceramics*	South Hadley, MA	08/2020
55. 2020 Gordon Research Conf. on Solid-State Chem.*	New London, NH	07/2020
56. 2 <sup>nd</sup> Int. Energy Storage & Conversion Congress	virtual	03/2020
57. 2018 Gordon Research Conf. on Water & Aqueous Solutions	Holderness, NH	07/2018
58. 2018 Gordon Research Conf. on Batteries	Ventura, CA	02/2018

## V.C. INVITED CONFERENCE &amp; WORKSHOP PRESENTATIONS

Conference / Workshop Title	Location	Date
59. 4th Int. Conf. on Proton-Coupled Electron Transfer	Port Aventura, Spain	06/2023
60. iCANX Talks	virtual	03/2023
61. Battery Tutorial for Amazon	virtual	09/2022
62. 23 <sup>rd</sup> Solid State Ionics Conference <sup>§</sup>	Boston, MA	07/2022
63. PlugVolt Battery Seminar 2022 <sup>§</sup>	Plymouth, MI	07/2022
64. NSLS-II & CFN Joint Users' Meeting	virtual	05/2022
65. 2022 MRS Spring Meeting	virtual	05/2022
66. Boston Univ. Institute for Sustainable Energy Workshop: "Where is Energy Storage Headed"	virtual	01/2022
67. 2021 MRS-Taiwan Meeting	virtual	11/2021
68. 72 <sup>nd</sup> Meeting of the International Society of Electrochemistry	virtual	09/2021
69. 2021 ACS Fall Meeting	Atlanta, GA	08/2021
70. 239 <sup>th</sup> ECS Meeting	virtual	05/2021
71. Spectroscopy WiTEC Virtual Symposium	virtual	05/2021
72. 2021 MRS Spring Meeting	virtual	04/2021
73. Duke Univ. Triangle Materials Research Workshop	virtual	12/2020
74. 2020 MRS Fall Meeting (3 talks)	virtual	12/2020
75. 2020 Fall Center for Dielectrics and Piezoelectrics Meeting	virtual	10/2020
76. ACS ENFL Monthly Invited Talk Series	virtual	10/2020
77. 2020 NSF CBET Energy Storage Workshop: Frontiers of Materials, Architectures and Techniques	virtual	08/2020
78. 15 <sup>th</sup> International Ceramics Congress*	Montecatini Terme, Italy	06/2020
79. 259 <sup>th</sup> ACS National Meeting & Exposition	Philadelphia, PA	03/2020
80. 10 <sup>th</sup> International Conference of the African Materials Research Society (2 talks)	Arusha, Tanzania	12/2019
81. 2019 MRS Fall Meeting	Boston, MA	12/2019
82. Advances, Challenges, and Long-Term Opportunities for Electrochemistry. A Chemical Sciences Roundtable Workshop	Washington, D.C.	11/2019
83. NSF Hybrids and Interfaces Workshop for Solid State Materials Chemistry	Alexandria, VA	10/2019
84. O-HyLi Mini Conference: Ionics of Oxygen, Hydrogen, and Lithium (in celebration of Prof. Sossina Haile)	Evanston, IL	09/2019
85. 2019 North American Solid State Chemistry Conference	Golden, CO	07/2019
86. 257 <sup>th</sup> ACS National Meeting & Exposition	Orlando, FL	04/2019
87. 256 <sup>th</sup> ACS National Meeting & Exposition (3 talks)	Boston, MA	08/2018
88. Telluride Science Research Workshop on Water	Telluride, CO	07/2018
89. Chalmers Univ. of Technology, Workshop on Supercapacitors: Store for the Future	Gothenburg, Sweden	06/2018
90. 9 <sup>th</sup> Int. Conf. of the African Mater. Res. Society (2 talks)	Gaborone, Botswana	12/2017
91. 2017 Southeast Regional Mtg. of the Amer. Chem. Soc.	Charlotte, NC	11/2017
92. 232 <sup>nd</sup> ECS Meeting (2 talks)	National Harbor, MD	10/2017
93. 26 <sup>th</sup> Int. Materials Research Congress	Cancun, Mexico	08/2017
94. 253 <sup>rd</sup> ACS National Meeting & Exposition	San Francisco, CA	04/2017
95. 2017 ACerS Electronic Mater. & App. Conf.	Orlando, FL	01/2017

96. 25 <sup>th</sup> Int. Materials Research Congress	Cancun, Mexico	08/2016
97. Telluride Sci. Research Center Workshop on Interfacial Chem. & Charge Transfer for Energy Storage & Conv.	Telluride, CO	07/2016
98. NSF Center for Dielectrics & Piezoelectrics Spring 2016 Mtg.	Kyoto, Japan	06/2016
99. ASM Int. Carolinas Chapter Mtg.	Raleigh, NC	04/2016
100. WITeC Confocal Raman Imaging Workshop	Newark, NJ	04/2016
101. 40 <sup>th</sup> Int. Conf. & Expo. on Adv. Ceramics & Composites	Daytona Beach, FL	01/2016
102. NSF Center for Dielectrics & Piezoelectrics Fall 2015 Mtg.	Raleigh, NC	10/2015
103. Univ. of Texas at Austin ECS Student Chapter Mtg.	Austin, TX	04/2014
104. 7 <sup>th</sup> Int. Conf. of the African Mater. Res. Society	Addis Ababa, Ethiopia	12/2013

## VI. ADVISING & MENTORING

### Postdoctoral, Graduate, & Undergraduate Research Assistants

Name	Position	Years	Next Position
Noah Holzapfel	Postdoctoral fellow	01/2023 – present	
Ran Ding	Postdoctoral fellow	12/2021 – present	
Jenelle Fortunato	Postdoctoral fellow	02/2021 – present	
Simon Fleischmann	Postdoctoral fellow	02/2019 – 12/2020	researcher, Univ. Paul Sabatier
Ruocun Wang	Postdoctoral fellow	08/2020 – 12/2020	postdoc, MSE, Drexel
Seongbak Moon	Ph.D. student	08/2022 – present	
Vincenzo Musico	Ph.D. student	08/2021 – present	
Ishita Kamboj	Ph.D. student	08/2019 – present	
Saeed Saeed	Ph.D. student	08/2019 – present	
Matthew Chagnot	Ph.D. student	08/2019 – present	
Michael Spencer	Ph.D. student	07/2017 – present	
James Mitchell	Ph.D. student	08/2016 – 05/2021	postdoc, Chem, Oregon
Shelby Boyd	Ph.D. student	01/2016 – 07/2020	postdoc, Chem, NC State
Ruocun Wang	Ph.D. student	08/2015 – 07/2020	postdoc, MSE, NC State
William C. Lo	M.S. student	08/2015 – 08/2016	grad, Physics, NC State
Jessica Elvegaard	Undergrad student	11/2022 – present	
Carter Wunch	Undergrad student	05/2022 – 08/2022	undergrad, U. Rhode Island
Sofia Abello	Undergrad student	05/2021 – present	
Rebecca Hall	Undergrad student	05/2021 – present	
Dominic Marchese	Undergrad student	08/2020 – 07/2021	volunteer, AmeriCorps
Hannah Teeters	Undergrad student	08/2020 – 05/2022	consultant, Booz Allen Hamilton
Sophia Shi	Undergrad student	08/2020 – 05/2022	grad, ChemE, UT Austin
Tran Nguyen	Undergrad student	09/2019 – 12/2019	undergrad, ChemE, NC State
Frank Di Lustro	Undergrad student	05/2018 – 08/2018	undergrad, EE, NC State
Ellie Scott	Undergrad student	01/2018 – 05/2019	engineer, Cree
Andie Matten	Undergrad student	11/2017 – 05/2020	M.S. student, Echem, Oregon
Ming Lee	Undergrad student	11/2017 – 02/2018	undergrad, MSE, UNSW
Klarissa Baranyk	Undergrad student	06/2017 – 08/2017	undergrad, EE, NC State
Kevin Matthews	Undergrad student	05/2017 – 07/2020	grad, MSE, UT Austin
Kaynan Goldberg	Undergrad student	03/2017 – 11/2017	undergrad, MSE, NC State
Matthew Powell	Undergrad student	01/2017 – 05/2017	grad, Chemistry, Clemson
Ashwin Bhargava	Undergrad student	05/2016 – 08/2016	undergrad, MSE, NC State
Anna Costine	Undergrad student	03/2016 – 05/2017	grad, MSE, Virginia



Mikayla Moody	Undergrad student	09/2015 – 09/2016	undergrad, MSE, NC State
Éowyn Lucas	Undergrad student	08/2015 – 06/2017	grad, MSE, CalTech

### SciBridge Project

- Co-Founder & Faculty Advisor of SciBridge, a multi-university project that connects African and U.S. scientists by utilizing experiment kits and web-based seminars
- Award-Winning Project: 2014 MRS Foundation Grassroots Grant Award (\$10,000), 2015 NC State Diversity Mini Grant Award (\$3,000), 2016 NC State East Africa Strategic Initiative Award (\$12,000)

### VII. TEACHING

Course ID	Title	Semester (F = Fall, S = Spring)
MSE 201	Structure & Properties of Engineering Materials	F15, S17, F17, S18, S19, S20, F20, F22
MSE 360	Kinetic Processes in Materials	S21, S23
MSE 791	Materials for Electrochemical Technologies	F16, F19, F21

### VIII. PROFESSIONAL ACTIVITIES

Role	Workshop or Symposium Title	Date
Co-organizer	244 <sup>th</sup> ECS Mtg. "Electrochemical Interfaces in Energy Storage: Theory Meets Experiment"	10/2023
Co-organizer	2023 MRS Spring Mtg. "Electrochemical Capacitors and Related Devices: Fundamentals, Materials, & Cell Design"	04/2023
Co-organizer	Telluride Sci. Research Center Workshop on Interfacial Chem. and Charge Transfer for Energy Storage & Conv.	07/2021
Co-organizer	Telluride Sci. Research Center Summer School on Electrochemical Energy Storage	06/2021
Panelist	DOE BES Roundtable on Research Opportunities in the Physical Sciences Enabled by Cryogenic Electron Microscopy	05/2021
Co-organizer	235 <sup>th</sup> ECS Mtg. "Battery Division Student Slam 3"	05/2019
Co-organizer	2019 MRS Spring Mtg. "Advanced Materials for the Water-Energy Nexus"	04/2019
Co-organizer	9 <sup>th</sup> Int. Conf. of the Africa Mater. Res. Soc. "Materials Education, International Networking, & Entrepreneurship/Innovation"	12/2017
Co-organizer	2017 MRS Spring Mtg. "Materials for Multivalent Electrochemical Energy Storage"	04/2017
Session chair	2020 ORNL CNMS User Mtg. "Materials for Energy Storage & Conversion"	09/2020
Session chair	2019 MRS Fall Mtg. "Chemomechanical and Interfacial Challenges in Energy Storage & Conversion"	12/2019
Session chair	256 <sup>th</sup> ACS National Mtg. "Battery Technology: Vehicle to Grid"	08/2018
Session chair	2018 MRS Spring Mtg. "Materials Science & Engineering for Safe & Long-Life Electrochemical Energy Storage"	04/2018
Session chair	232 <sup>nd</sup> ECS Mtg. "Multi-electron Redox Systems for Next Generation Batteries"	10/2017
Session chair	232 <sup>nd</sup> ECS Mtg. "Fast Electrochemical Processes"	10/2017

Session chair	26 <sup>th</sup> Int. Mater. Res. Congress, “Advances in Electrochemical Energy Storage”	08/2017
Session chair	253 <sup>rd</sup> ACS National Mtg., “Synthesis & Characterization of Materials for Energy Applications”	04/2017
Panelist	2017 DOE BES Workshop on Basic Research Needs for Next Generation Electrical Energy Storage	03/2017

## Co-Editor:

1. Transition Metal Oxides for Electrochemical Energy Storage (Publisher: Wiley, 2022), with Jagjit Nanda

Peer reviewer for over 40 journals in materials science, chemistry, energy, and electrochemistry, including:

ACS Applied Energy Materials, ACS Applied Materials & Interfaces, ACS Energy Letters, ACS Nano, Advanced Materials, Advanced Energy Materials, Advanced Functional Materials, Batteries & Supercaps, Chemical Communications, Chemical Science, Chemistry of Materials, Communications Chemistry, Electrochimica Acta, Electrochemical Communications, Energy & Environmental Science, Energy Storage Materials, Environmental Science & Technology, Inorganic Chemistry, Journal of the American Chemical Society, Journal of Electroanalytical Chemistry, Journal of the Electrochemical Society, Journal of Materials Chemistry A, Journal of Physical Chemistry, Journal of Physical Chemistry C, Journal of Power Sources, Materials Horizons, Materials Today, MRS Energy & Sustainability, Nano Energy, Nano Letters, Nanoscale, Nature Communications, Nature Materials, Science, & Solid State Ionics

## Proposal &amp; Fellowship Reviewer:

1. U.S. National Science Foundation: 2017 - present
2. U.S. Department of Energy: 2016 – present
3. MRS Renewable Energy Award Subcommittee, 2022
4. Oak Ridge National Laboratory Neutron Sciences General User Program: 2020
5. U.S. Department of Energy Office of Science Graduate Student Research Program: 2021, 2020
6. Stanford Synchrotron Radiation Light Source: 2021, 2019, 2018
7. National Science Centre of Poland: 2015, 2019
8. Kentucky Science & Technology Corp.: 2017
9. U.S. Department of Defense NDSEG Fellowship: 2016

## Editorial Advisory Board Member:

1. ACS Energy Letters, 2023 - present
2. ACS Nanoscience Au, 2021 - present
3. Energy Storage Materials, 2020 – present

## Advisory Board Member:

1. Center for Hydrogen in Energy and Information Sciences (HEISs) EFRC, 2023 – present
2. Electrochemical Society Battery Division, Member-at-Large, 2020 – present
3. 7<sup>th</sup> International Symposium on Enhanced Electrochemical Capacitors (ISEECap2022)
4. ORNL CNMS User Executive Committee, 2019 – 2021
5. Project Smart MEMs Piezo Based Energy Harvesting with Integrated Supercapacitor and Packaging (smart-MEMPHIS), 2016 – 2018