Chibueze V. Amanchukwu

CONTACT

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EDUCATION

2012 – 2017 **Massachusetts Institute of Technology (MIT)**, Cambridge MA
Ph.D. in Chemical Engineering
National Defense Science and Engineering Graduate (NDSEG) Fellow

Advisor: Paula T. Hammond
Thesis title: Probing of reaction mechanisms, and development of polymeric materials for lithium-air batteries

2008 – 2012 **Texas A&M University**, College Station TX
B.S. in Chemical Engineering, Minor in Chemistry
Summa Cum Laude; GPA: 3.97/4.0

EXPERIENCE

2020 – present **Neubauer Family Assistant Professor**, Pritzker School of Molecular Engineering, University of Chicago

2020 – present **Joint Appointment**, Chemical Sciences and Engineering Division Argonne National Laboratory

2024 – present **Faculty Affiliate**, Data Science Institute, University of Chicago

2020 – 2025 **Scientific Advisory Board**, AIONICS Inc.

2019 **Visiting Fellow**, Clare Grey Lab, University of Cambridge, UK
- Characterized the structure and dynamics of lithium-ion containing polymer electrolytes using solid state nuclear magnetic resonance (NMR)
- Probed lithium deposition and stripping using *in situ* solid state NMR

2017 – 2019 **Postdoctoral Research Fellow, Zhenan Bao's Lab, Stanford University**
- Designed new electrolytes and studied ionic transport mechanisms and electrochemical stability for use in lithium metal batteries
- Studied new polymer coating mechanisms to modify the deposition and stripping kinetics at the lithium metal surface

2017 – 2019 **Consultant, Santiago, Chile**
- Advised startups and multinational companies such as Enel and Empresas Copec on battery development for electromobility

2012 – 2017 **Graduate Student, Paula Hammond's Lab, MIT**
- Investigated mechanisms of polymer stability and degradation in lithium-air batteries
- Discovered a gel polymer electrolyte can modulate the oxygen reduction chemistry in a lithium-air battery. Showed for the first time ionic liquid-superoxide complexes can be formed as Li-air discharge products
- Evaluated the stability and feasibility of electron-conducting polymers as lithium-air battery electrodes

2012 **Intern, DuPont, Central Research & Development, Wilmington DE**
- Developed low-cost separators for lithium-sulfur batteries

2012 **Undergraduate Researcher, Hae-Kwon Jeong's Lab, Texas A&M University**
- Fabricated and analyzed ZIF-8 membranes for gas separation

2010 – 2011 **Intern, Marathon Petroleum Corporation, Ohio and Illinois**
- Planned a test run to increase the feed rate to a refinery unit (Unicracker)

2009 **Undergraduate Researcher, Cyclotron Institute, Texas A&M University**
- Helped prepare and analyze results of nuclear experiments

HONORS AND AWARDS

2026 Sloan Research Fellow in Chemistry
2025 PECASE (Presidential Early Career Award in Science and Engineering)
2025 ACS PMSE (Polymer Materials Science and Engineering) Early Investigator
2025 Finalist, Moore Inventor Fellowship
2024 Early Career Program Award, Army Research Office
2024 MIT Technology Review, 35 Innovators under 35 (TR35, Global List)
2024 Breakthrough Energy Explorer
2024 Talented 12, Chemical & Engineering News (ACS)
2024 Camille Dreyfus Teacher-Scholar Award
2024 Google Research Scholar Award
2023 Department of Energy (DOE) Early Career Award
2023 Provost Global Faculty Award, University of Chicago
2023 ENFL Early Career Investigator, ACS ENFL (Energy and Fuels Division)
2022 NSF CAREER Award
2022 US Frontiers of Engineering (FOE) Symposium Invitee, National Academy of Engineering
2022 CIFAR Azrieli Global Scholar Award (*International award recognizing 18 out of 200 scholars worldwide*)
2022 Scialog Fellow, Negative Emissions Science
2021 12 Under 12 Texas A&M University Young Alumni Spotlight (*Recognizes excellent young alumni who graduated within the last 12 years. Only 108 out of over 527,000 alumni have won award*)
2021 ECS Toyota Young Investigator Fellowship
2021 Emerging Investigator, Journal of Materials Chemistry (RSC)
2021 3M Nontenured Faculty Award
2019 Visiting Fellowship, Corpus Christi College, University of Cambridge
2018 – 2019 Sloan Travel Grant Award
2017 – 2019 TomKat Center Postdoctoral Fellow in Sustainable Energy, Stanford University
2017 – 2019 California Alliance Postdoctoral Fellow
2016 Session's Best Paper, 2016 AIChE Fall National Conference (San Francisco)
2016 Janice Lumpkin Travel Award, 2016 AIChE Fall National Conference
2016 Excellence in Graduate Polymer Research, American Chemical Society
2015 – 2017 Alfred P. Sloan Scholar, MIT University Center for Exemplary Mentoring
2014 – 2017 National Defense Science and Engineering Graduate (NDSEG) Fellowship
2014 MIT-Imperial College London Global Fellow
2013 Engineer in Training (EIT)
2012 GEM Fellow, The National GEM Consortium
2012 MIT-Lemelson Minority Engineering Presidential Fellow
2012 Texas A&M ChemE Outstanding Graduating Student Award
2012 Who's Who Among Students in American Universities and Colleges
2011 – 2012 Craig Brown Outstanding Senior Engineer Award (*Highest Award given to a student in the Texas A&M College of Engineering*)
2009 – 2012 Academic Excellence Award
2011 – 2012 BP Excellence Scholarship in Texas A&M Chemical Engineering
2008 – 2012 American Chemical Society (ACS) Scholar
2011 – 2012 South Texas Section – AIChE Scholarship

2010 – 2011	Marathon Oil/UNCF Corporate Scholars Program
2008 – 2012	AIChE Minority Scholarship
2009 – 2010	Lindsay Scholars Program, Texas A&M Chemical Engineering

PUBLICATIONS

1.) Bidushi Sarkar, Rameshwar L. Kumawat, Peiyuan Ma, Ke-Hsin Wang, Matin Mohebi, George C. Schatz, and **Chibueze V. Amanchukwu***. Lithium metal-mediated electrochemical reduction of per- and poly- fluoroalkylsubstances (PFAS). *Nat. Chem*. 2026. In press. https://doi.org/10.1038/s41557-025-02057-7

2.) Reginaldo J. Gomes, Jianping Li, Jiayi Xu, Bidushi Sarkar, Matin Mohebi, Joshua Gabriel, Tony Mathew, Ishaan Roy, Noah Paulson, Cong Liu, Chukwunwike O. Iloeje, and **Chibueze V. Amanchukwu***. Integrating CO2 Capture and Electrochemical Conversion Using Industrially Relevant Streams. *Nat. Energy* 2026. In press.

3.) Jaemin Kim, Ke-Hsin Wang, Ritesh Kumar, and **Chibueze V. Amanchukwu***. Generative solvent and electrolyte formulation discovery. *JACS Au*. 2026. In press.

4.) Ritesh Kumar#, Ke-Hsin Wang#, and **Chibueze V. Amanchukwu***. Using electrolyte solvent embeddings to guide battery electrolyte discovery. #=co-first authors. *Mol Syst. Des. Eng*. 2026. In press. ChemRxiv. https://doi.org/10.26434/chemrxiv-2025-7nnbl

5.) Hrishikesh Srinivasan, Seunga Heo, and **Chibueze V. Amanchukwu***. Anion and cation (co)intercalation from an inorganic molten salt for dual-ion batteries. *Under Review*.

6.) Matin Mohebi, Theodore J. Houser, Reginaldo J. Gomes, Hannah Fejzic, and **Chibueze V. Amanchukwu***. Enabling reactive carbon capture on copper catalysts by controlling corrosion and modifying the electrochemical interface. 2026. *Submitted*.

7.) Ke-Hsin Wang, Ritesh Kumar, Peiyuan Ma, Jaemin Kim, Bitgaram Kim, and **Chibueze V. Amanchukwu***. Fluoroalkyl-functionalized cyclic ethers as solvent for high-voltage batteries. 2026. *Under Revision*.

8.) Minh Canh Vu, Hrishikesh S. Srinivasan, Priyadarshini Mirmira, Emily S. Doyle, and **Chibueze V. Amanchukwu***. A transition-metal-and-solvent-free dual-graphite battery for long duration storage. *Under Revision*. ChemRxiv. https://doi.org/10.26434/chemrxiv-2025-lhxgk

9.) **Chibueze V. Amanchukwu***. A dash of salt. *Nat. Energy*. 2025. https://doi.org/10.1038/s41560-025-01706-y.

10.) Hannah Fejzić, Ritesh Kumar, Reginaldo J. Gomes, Lilin He, Theodore J. Houser, Jaemin Kim, Matin Mohebi, Nora Molten, and **Chibueze V. Amanchukwu***. Water clustering modulates activity and enables hydrogenated product formation during carbon monoxide electroreduction in aprotic media. *J. Am. Chem. Soc*. 2025. 147, 22, 18445-18459

11.) Peiyuan Ma#, Ritesh Kumar#, Ke-Hsin Wang, and **Chibueze V. Amanchukwu***. Active learning accelerates electrolyte solvent screening for anode-free lithium metal batteries. #=co-first authors *Nat. Comm*. 2025. 16, 8396.

12.) Ritesh Kumar, Minh Canh Vu, Peiyuan Ma, and **Chibueze V. Amanchukwu*.** Electrolytomics: A unified big data approach for electrolyte design and discovery. *Chem. Mater*. 2025. 37, 8, 2720-2734

13.) Ke-Hsin Wang, Peiyuan Ma, Jaemin Kim, Michael Han, and **Chibueze V. Amanchukwu***. Mono-fluorinated Cyclic Ethers Enable Fast Ion Transport in Low-Temperature Lithium Metal Batteries. *ACS Appl. Mater. Inter*. 2025. 17, 35606-35618.

14.) Priyadarshini Mirmira, Emily S. Doyle, Peiyuan Ma, Alex Garcia, Zoe Umlauf, Minh Canh Vu, and **Chibueze V. Amanchukwu***. In situ inorganic and polymer synthesis for conformal hybrid sulfide-type solid state electrolytes. *Chem. Mater.* 2025. 37, 3, 1069-1082.

15.) Peiyuan Ma, Uyen Le, Ke-Hsin Wang, Minh Canh Vu, Priyadarshini Mirmira, and **Chibueze V. Amanchukwu*.** Probing the influence of steric hindrance in nonfluorinated ether electrolytes for lithium metal batteries. *J. Electrochem. Soc.* 2024. 171, 120536

16.) Manish Maurya, Hannah Fejzic, Xavier Krull, Huy Nguyen, Matthew Neurock, Joseph T. Hupp*, **Chibueze V. Amanchukwu***, and Rachel B. Getman*. Impact of MOF Coatings and Electrolyte Composition on the Microenvironment of Copper Electrodes for CO Reduction. Under Review. ChemRxiv. https://doi.org/10.26434/chemrxiv-2025-jrzms

17.) Nicholas R. Boynton, Leah E. Hess, Soumaji Dutta, Camille I. Kuwana, Priyadarshini Mirmira, Gabrielle R. Solymosy, Alexander S. Filatov, Trevor D. Hagan, Sophia A. Bartridge, Aiden Rambo, Jenna Dibeh, Stephanie L. Vivod, Asem Abdulahad, **Chibueze V. Amanchukwu***, Andrew L. Ferguson*, Stuart J. Rowan*, and Shrayesh N. Patel*. Influence of thermal processing and doping concentration on phase behavior of a lithium-transporting organic ionic plastic crystal. Under Review. ChemRxiv. https://doi.org/10.26434/chemrxiv-2025-b2jmw

18.) Michael Counihan, Jungkuk Lee, Priyadarshini Mirmira, Pallab Barai, Meghan Burns, **Chibueze V. Amanchukwu**, Venkat Srinivasan, Yuepeng Zhang, and Sanja Tepavcevic. Improved Interfacial Li-ion Transport with Surface Modification of LLZO in Composite Polymer Electrolytes. Energy Storage Materials. *2025,* 5, 500032.

19.) Peiyuan Ma, Cindy Xue, Ke-Hsin Wang, Priyadarshini Mirmira, Minh Canh Vu, Oscar Rivera, and **Chibueze V. Amanchukwu***. Structural molecular optimization of fluorinated ether electrolyte for all temperature fast charging lithium-ion battery. *ACS Energy Lett.* 2024. 9, 6144-6152.

20.) Reginaldo J. Gomes, Ritesh Kumar, Hannah Fejzić, Bidushi Sarkar, Ishaan Roy, and **Chibueze V. Amanchukwu***. Modulating water hydrogen bonding within a nonaqueous environment controls its reactivity in electrochemical transformations. *Nat. Catal.* 2024. 7, 689-701.

21.) Emily S. Doyle, Priyadarshini Mirmira, Peiyuan Ma, Minh Canh Vu, Trinity Hixson-Wells, Ritesh Kumar, and **Chibueze V. Amanchukwu***. Phase morphology dependence of ionic conductivity and oxidative stability in fluorinated ether solid state electrolytes. *Chem. Mater.* 2024. 36, 10, 5063-5076

22.) Priyadarshini Mirmira#, Claire Fuschi#, Zoe Umlauf, Peiyuan Ma, Emily S. Doyle, Minh Canh Vu, and **Chibueze V. Amanchukwu***. Impact of processing methodology on the performance of hybrid sulfide-polymer solid state electrolytes for lithium metal batteries. #=co-first authors. *J. Electrochem. Soc*. 2024. 171, 030508.

23.) Peiyuan Ma, Ritesh Kumar, Minh Canh Vu, Ke-Hsin Wang, Priyadarshini Mirmira, and **Chibueze V. Amanchukwu***. Fluorination promotes lithium salt dissolution in borate esters for lithium metal batteries. *J. Mater. Chem. A*. 2024. 12, 2479-2490.

24.) Minh Canh Vu, Priyadarshini Mirmira, Reginaldo J. Gomes, Peiyuan Ma, Emily S. Doyle, Hrishikesh S. Srinivasan, and **Chibueze V. Amanchukwu***. Low melting alkali-based molten salt electrolytes for solvent-free lithium metal batteries. *Matter.* 2023. 6, 12, 4357-4375.

25.) Benjamin C. Kash#, Reginaldo J. Gomes#, and **Chibueze V. Amanchukwu***. Mitigating Electrode Inactivation During CO2 Electrocatalysis in Aprotic Solvents with Alkali Cations. *J. Phys. Chem. Lett*. 2023. 14, 4, 920-926. #=co-first authors

26.) **Chibueze V. Amanchukwu***, Anna B Gunnarsdottir, Snehashis Choudhury, Tamsin L Newlove, Pieter M Magusin, Zhenan Bao*, and Clare P. Grey*. Understanding Lithium-ion Dynamics in Single-ion and Salt-in-polymer Perfluoropolyethers and Polyethyleneglycol Electrolytes using Solid-state NMR. *Macromolecules.* 2023. 56, 10, 3650-3659.

27.) Snehashis Choudhury#, Zhuojun Huang#, **Chibueze V. Amanchukwu#**, Paul E. Rudnicki#, Yuelang Chen, David Thomas Boyle, Jian Qin, Yi Cui, and Zhenan Bao. Ion Conducting Polymer Interfaces for Lithium Metal Anodes: Impact on the Electrodeposition Kinetics. *Adv. Energy Mater*. 2023. 13, 35, 2301899. #=co-first authors.

28.) Yuxi Chen, Elizabeth M.Y. Lee, Phwey S. Gil, Peiyuan Ma, **Chibueze V. Amanchukwu***, and Juan J. de Pablo*. Molecular Characterization of Fluoroether Electrolytes for Lithium Metal Batteries. *Mol. Syst. Des. Eng.* 2023. 8, 195-206.

29.) Peiyuan Ma, Priyadarshini Mirmira, Peter J. Eng, Seoung-Bum Son, Ira D. Bloom, Alexander S. Filatov, and **Chibueze V. Amanchukwu***. Co-intercalation-free Ether Electrolytes for Graphitic Anodes in Lithium-ion Batteries. *Energy Environ. Sci*. 2022. 15, 4823-4835.

30.) Priyadarshini Mirmira, Claire Fuschi, Walker Gillett, Peiyuan Ma, Jin Zheng, Zachary D. Hood, and **Chibueze V. Amanchukwu***. Nonconductive Polymers Enable Higher Ionic Conductivities and Suppress Reactivity in Hybrid Sulfide-Polymer Solid State Electrolytes. *ACS Appl. Energy Mater*. 2022, 5, 7, 8900-8912.

31.) Morgan Cencer, Chenyang Li, Garvit Agarwal, Reginaldo J. Gomes, **Chibueze V. Amanchukwu**, and Rajeev S. Assary*. Interactions of CO2 anion radical with electrolyte environment from dynamic first principles simulations. *ACS Omega*. 2022, 7, 21, 18131-18138

32.) Reginaldo J. Gomes, Chris Birch, Morgan M. Cencer, Chenyang Li, Seoung-Bum Son, Ira D. Bloom, Rajeev S. Assary, and **Chibueze V. Amanchukwu***. Probing electrolyte influence on CO2 reduction in aprotic solvents. *J. Phys. Chem. C*. 2022, 126, 32, 13595-13606.

33.) Peiyuan Ma, Priyadarshini Mirmira, and **Chibueze V. Amanchukwu***. Effect of building block connectivity and ion solvation on electrochemical stability and ionic conductivity in novel fluoroether electrolytes. *ACS Central Sci*. 2021, 7, 7, 1232-1244.

34.) Priyadarshini Mirmira, Jin Zheng, Peiyuan Ma, and **Chibueze V. Amanchukwu***. Importance of multimodal characterization and influence of residual Li2S impurity in amorphous Li3PS4 inorganic electrolytes. *J. Mater. Chem. A* 2021 9, 19637-19648.

35.) Anna B. Gunnarsdottir, **Chibueze V. Amanchukwu**, Svetlana Menkin, and Clare P. Grey. Non-invasive in situ NMR study of 'dead lithium' formation and lithium corrosion in full-cell lithium metal batteries. *J. Am. Chem. Soc*. 2020, 142, 49, 20814-20827.

36.) Zhiao Yu, Hansen Wang, Xian Kong, William Huang, Yuchi Tsao, David G. Mackanic, Kecheng Wang, Xinchang Wang, Wenxiao Huang, Snehashis Choudhury, Yu Zheng, **Chibueze V. Amanchukwu**, Samantha T. Hung, Yuting Ma, Eder G. Lomeli, Jian Qin, Yi Cui, and Zhenan Bao. Molecular design for electrolyte solvents enabling energy-dense and long-cycling lithium metal batteries. *Nat. Energy.* 2020, 5, 526-533.

37.) **Chibueze V. Amanchukwu***. The Electrolyte Frontier: A Manifesto. *Joule*. 2020, 4, 281-285.

38.) **Chibueze V. Amanchukwu**, Zhiao Yu, Xian Kong, Jian Qin, Yi Cui, and Zhenan Bao. A new class of ionically conducting fluorinated ether electrolytes with high electrochemical stability. *J. Am. Chem. Soc.* 2020, 142, 16, 7393-7403.

39.) **Chibueze V. Amanchukwu**, Xian Kong, Jian Qin, Yi Cui, and Zhenan Bao. Nonpolar alkanes modify lithium ion solvation for improved lithium deposition and stripping. *Adv. Energy Mater.* 2019, 9, 1902116

40.) Zhiao Yu, David G. Mackanic, Wesley Michaels, Minah Lee, Allen Pei, Dawei Feng, Qiuhong Zhang, Yuchi Tsao**, Chibueze V. Amanchukwu**, Xuzhou Yan, Hansen Wang, Shucheng Chen, Kai Liu, Jiheong Kang, Jian Qin, Yi Cui, and Zhenan Bao. A dynamic, electrolyte-blocking, and single-ion-conductive network for stable lithium-metal anodes. *Joule*. 2019, 3, 1-16

41.) Mingjun Huang, Shuting Feng, Wenxu Zhang, Livia Giordano, Mao Chen, **Chibueze V. Amanchukwu**, Robinson Anandakathir, Yang Shao-Horn, and Jeremiah A. Johnson. Fluorinated Aryl Sulfonimide Tagged (FAST) salts: modular synthesis and structure-property relationships for battery applications. *Energy Environ. Sci.,* 2018, 11, 1326-1334.

42.) Shuting Feng, Mao Chen, Livia Giordano, Mingjun Huang, Wenxu Zhang, **Chibueze V. Amanchukwu**, Robinson Anandakathir, Yang Shao-Horn, and Jeremiah A. Johnson. Mapping a Stable Solvent Structure Landscape for Li-Air Battery Organic Electrolytes. *J. Mater. Chem. A.*, 2017, 5, 23987-23998.

43.) **Chibueze V. Amanchukwu**, Hao-Hsun Chang, and Paula T. Hammond. Influence of Ammonium Salts on Discharge and Charge of Li–O_2 Batteries. *J. Phys. Chem. C.* 2017, 121, 17671-17681.

44.) Michal Tulodziecki, Graham M. Leverick, **Chibueze V. Amanchukwu**, Yu Katayama, David G. Kwabi, Fanny Barde, Paula T. Hammond, and Yang Shao-Horn. The Role of Iodide on the Formation of Lithium Hydroxide in Lithium-Oxygen Batteries. *Energy Environ. Sci.* 2017, 10, 1828-1842.

45.) **Chibueze V. Amanchukwu**, Hao-Hsun Chang, Magali Gauthier, Shuting Feng, Thomas P. Batcho, and Paula T. Hammond. One electron mechanism in a gel polymer electrolyte Li–O_2 battery. *Chem. Mater.* 2016, 28, 7167-7177.

46.) **Chibueze V. Amanchukwu**, Magali Gauthier, Thomas P. Batcho, Chanez Symister, Yang Shao-Horn, Julio D'Arcy, and Paula T. Hammond. Evaluation and stability of PEDOT electroactive polymer electrodes for Li-O_2 batteries. *J. Phys. Chem. Lett*. 2016, 7, 3770-3775.

47.) Sayed Youssef Sayed, Koffi P.C. Yao, David G. Kwabi, Thomas P. Batcho, **Chibueze V. Amanchukwu**, Shuting Feng, Carl V. Thompson, and Yang Shao-Horn. Revealing Instability and Irreversibility in Nonaqueous Sodium-O_2 Battery Chemistry. *Chem. Comm.* 2016, 52, 9691-9694.

48.) Jonathon R. Harding, **Chibueze V. Amanchukwu**, Paula T. Hammond, and Yang Shao-Horn. Instability of Polyethylene Oxide upon oxidation in Lithium-Air Batteries. *J. Phys. Chem. C.* 2015, 119, 6947-6955.

49.) **Chibueze V. Amanchukwu**, Jonathon R. Harding, Yang Shao-Horn, and Paula T. Hammond. Understanding the chemical stability of polymers for lithium-air batteries. *Chem. Mater*. 2015, 27, 550-561.

50.) David G. Kwabi, Thomas P. Batcho, **Chibueze V. Amanchukwu**, Nagore Ortiz-Victoriano, Paula T. Hammond, Carl V. Thompson, and Yang Shao-Horn. Chemical Instability of Dimethyl Sulfoxide in Lithium-Air Batteries. *J. Phys. Chem. Lett*. 2014, 5, 2850-2856.

51.) Koffi P.C. Yao, Yi-Chun Lu, **Chibueze V. Amanchukwu**, David G. Kwabi, Marcel Risch, Jigang Zhou, Alexis Grimaud, Paula T. Hammond, Fanny Barde, and Yang Shao-Horn. The influence of transition metal oxides on the kinetics of Li_2O_2 oxidation in Li-O_2 batteries: high activity of chromium oxides. *Phys. Chem. Chem. Phys.*, 2014, 16, 2297-2304.

INVITED TALKS

1.) Discussion Leader, Gordon Research Conference (GRC) Electrochemistry, January 2026
2.) Speaker, Gordon Research Conference (GRC) Batteries, February 2026
3.) Department of Materials Science and Engineering, University of California, Berkeley, April 23, 2026
4.) International Institute for Nanotechnology (IIN), Northwestern University, May 2026
5.) Department of Chemical Engineering and Materials Science. April 2026
6.) 3M NTFA (Non-tenured Faculty Award) Symposium, October 2025
7.) SES AI, Woburn MA, August 2025
8.) Department of Chemical Engineering, University of Illinois at Chicago, September 2025
9.) Department of Chemical Engineering, Texas A&M University, April 23, 2025
10.) Department of Chemical Engineering, Massachusetts Institute of Technology (MIT), April 2025
11.) Department of Chemistry and Chemical Biology, Harvard University, April 2025
12.) Accelerating battery electrolyte discovery using machine learning. ACS Spring 2025 Conference (San Diego, CA)
13.) Modulating water activity within aprotic electrolytes for selective CO2 and CO electrocatalysis. ACS Spring 2025 Conference (San Diego, CA)
14.) Low-and-no- fluorine-based solvents for sustainable next generation lithium batteries. ACS Spring 2025 Conference (San Diego, CA)
15.) Department of Chemical Engineering, Illinois Institute of Technology. April 2025
16.) Department of Chemical Engineering, University of California, San Diego. April 2025
17.) Department of Chemistry, University of Illinois, Urbana Champaign. March 2025
18.) Mellichamp Lecture, School of Chemical and Biomolecular Engineering, Georgia Institute of Technology, March 2025
19.) Enabling Transition-Metal-Free and Solvent-Free Batteries. AIChE Fall 2024 Conference (San Diego, CA)
20.) Manipulating Water Using Aprotic Solvents for CO2 and CO Electrochemistry. AIChE Fall 2024 Conference (San Diego, CA)
21.) Department of Chemistry and Biochemistry. University of Illinois at Chicago. November 2024
22.) Department of Chemistry, Loyola University Chicago. October 2024
23.) Electrolyte Design Strategies to Control Electrochemical Processes in Batteries and Electrocatalysis. Frontiers in Chemistry and Chemical Engineering. Caltech. May 30, 2024
24.) Low Melting Alkali-Based Inorganic Molten Salts as Battery Electrolytes. MRS (Materials Research Society) Spring 2024 Conference (Seattle, WA).
25.) Machine Learning Accelerated Electrolyte Discovery for Batteries. MRS (Materials Research Society) Spring 2024 Conference (Seattle, WA).
26.) Electrolyte design for beyond Li-ion batteries. AIChE Fall 2023 National Meeting (Orlando, Florida)

27.) Electrolyte design for next generation energy storage and conversion. Universidad Nacional Autónoma de México. 2023 (Mexico City, Mexico)
28.) Tutorial on Batteries. Joint Undertaking for an African Materials Institute (JUAMI), 2023, Nairobi Kenya
29.) Fluorinated ether electrolytes to enable next generation Li-ion batteries. ACS Spring 2023. (Indianapolis, IN)
30.) Electrolyte and solvation effects for nonaqueous CO2 electrochemistry. ACS Spring 2023. (Indianapolis, IN)
31.) Enabling novel electrolytes for next generation lithium metal batteries. PPG company. (Pittsburgh PA). January 31, 2023
32.) Electrolyte influence on nonaqueous electrochemical conversion of carbon dioxide. AIChE Fall 2022 National Conference (Phoenix AZ)
33.) Solid-state electrolytes for energy-dense lithium metal batteries. AIChE Fall 2022 National Conference (Phoenix AZ)
34.) Novel electrolyte design for lithium-based batteries. Division of Energy and Fuels. ACS Fall 2022 (Chicago, IL).
35.) Probing ion solvation effects for electrochemical CO2 conversion. Division of Energy and Fuels. ACS Fall 2022 (Chicago, IL).
36.) Novel Electrolyte Design for Lithium Metal Batteries. ACE-FUELS (Africa Center of Excellence in Future Energies and Electrochemical Systems). Webinar Series. May 12, 2022.
37.) Solvation-enabled electrocatalytic conversion of carbon dioxide to desired products. ACS Spring 2022. CO2 Electrolysis: Fundamental and Applied Research. March 20, 2022
38.) Enabling novel liquid and hybrid solid-state electrolytes for lithium metal batteries. Keynote Speaker. McGill University. March 17, 2022
39.) Electrolyte design strategies for lithium-based batteries. Junior Faculty Battery Symposium. December 10, 2021
40.) Enabling novel electrolytes for next generation lithium metal batteries. Chicago Area NMR Discussion Group. November 9, 2021
41.) Enabling energy-dense lithium metal batteries with novel electrolyte design. Joint African Materials Research Society-BITRI Webinar. November 9, 2021.
42.) Enabling lithium metal batteries through electrolyte molecular structure and ion solvation effects. 3M Non-Tenured Faculty Award Symposium. November 4, 2021.
43.) Hybrid electrolyte design for energy-dense solid-state lithium metal batteries. Argonne National Laboratory Solid State Battery Symposium. October 27, 2021.
44.) To Store, Or Not to Store, That is the Question. Faculty TED Talks. PME 10 Year Anniversary. September 17, 2021. Link: https://www.youtube.com/watch?v=XV-zyVtNkIA&list=PL9QkXKfreYheVJsQhbE-GBGuPJViwec9-&index=11&ab_channel=UChicagoPME
45.) Molecular structure and ion solvation effects in oligomeric fluoroether electrolytes for lithium metal batteries. Overberger International Prize (in honor of Professor Zhenan Bao). ACS Fall 2021.
46.) Electrolyte design strategies for lithium batteries. AIONICS Fortnightly. 2021. Link: https://www.youtube.com/watch?v=3jdcVS9wcv4&ab_channel=Aionics%2CInc.
47.) Controlling electrolyte molecular structure and ion solvation effects for lithium metal batteries. 4th African Conference/Workshop on applications of nanotechnology. University of Nigeria, Nsukka. 2021
48.) Molecular design of novel electrolytes for lithium-based batteries. 2021 School of General Studies Biennial International Conference. University of Nigeria, Nsukka.
49.) Molecular design of novel electrolytes for lithium-based batteries. Macalester College. 2021
50.) Data science accelerated discovery of fluorinated electrolytes for lithium batteries. Joint Organic Chemistry/Fluorochemical session. 3M Technical Forum. 2020
51.) Electrolyte design for next generation batteries. Energy Policy Institute at the University of Chicago (EPIC), 2020
52.) Frontiers of energy at UChicago. University of Chicago College Admissions. 2020
53.) University of Chicago Center for Data and Computing, Summer Lab Series, 2020
54.) Nonpolar Alkanes Control Ion Solvation for Improved Lithium Metal Deposition, CEA Saclay, France, 2019

55.) Nonpolar Alkanes Control Ion Solvation for Improved Lithium Metal Deposition, Technical University of Munich, Germany, 2019
56.) US-Africa Forum on Nanotechnology Convergence for Sustainable Energy, Water, and Environment, University of South Africa, Johannesburg, South Africa, 2019
57.) Ethiopian Physical Society of North America Workshop, Addis Ababa Science and Technology University, Addis Ababa, Ethiopia, 2019
58.) Controlling Electrochemistry with Electrolyte Design, Materials Science, Caltech 2019
59.) Controlling Electrochemistry with Electrolyte Design, Department of Chemical Engineering, University of Texas at Austin, 2019
60.) Controlling Electrochemistry with Electrolyte Design, Department of Chemical and Biomolecular Engineering, University of Delaware, 2019
61.) Novel Electrolyte Design to Control Electrochemistry in Energy Storage Systems, Department of Chemical and Biomolecular Engineering, University of Pennsylvania, 2019
62.) Controlling Electrochemistry with Electrolyte Design, Department of Chemical Engineering, University of Southern California, 2019
63.) Controlling Electrochemistry with Electrolyte Design, Department of Chemical and Biological Engineering, Princeton University, 2019
64.) Controlling Electrochemistry with Electrolyte Design, Department of Chemical Engineering, University of Michigan, 2019
65.) Controlling Electrochemistry with Electrolyte Design, Institute of Molecular Engineering, University of Chicago, 2019
66.) Controlling Electrochemistry with Electrolyte Design, Department of Chemical and Biological Engineering, University of Colorado, Boulder, 2019

CONFERENCE PRESENTATIONS

1.) **Chibueze V. Amanchukwu**. Controlling water microenvironment to modulate electrocatalytic transformations. AIChE Fall National Meeting, 2023 (Orlando, Florida)
2.) **Chibueze V. Amanchukwu**. Understanding Carbon Dioxide Electrochemical Reduction in Aprotic Solvents. ECS Spring Meeting, 2023.
3.) **Chibueze V. Amanchukwu**. Coupling High Ionic Conductivity and High Electrochemical Stability in Fluorinated Ethers for Lithium-Based Batteries. AIChE Fall National Meeting, 2020. Virtual.
4.) **Chibueze V. Amanchukwu** and Zhenan Bao. *Nonpolar Alkanes Control Ion Solvation for Improved Lithium Metal Deposition*. African Materials Research Society (MRS) Meeting, 2019.
5.) **Chibueze V. Amanchukwu** and Zhenan Bao. *Nonpolar-based Electrolytes for Improved Lithium Metal Deposition and Stripping*. AIChE Fall National Meeting, 2019
6.) **Chibueze V. Amanchukwu** and Zhenan Bao. *Design of New Electrolytes for Lithium-Sulfur Batteries*. AIChE Fall National Meeting, 2018.
7.) **Chibueze V. Amanchukwu** and Zhenan Bao. *Developing Adhesive Coatings to Protect the Lithium Metal Anode*. AIChE Fall National Meeting, 2018.
8.) **Chibueze V. Amanchukwu** and Paula T. Hammond. *Controlling the Li–Air (O_2) Discharge Process with a Gel Polymer Electrolyte*. AIChE Fall National Meeting, 2016.
9.) **Chibueze V. Amanchukwu**, Yang Shao-Horn, and Paula T. Hammond. *The Influence of Tetrabutylammonium (TBA) salts on the Discharge and Charge Behavior of Li-O2 Batteries*. AIChE Fall National Meeting, 2016.
10.) **Chibueze V. Amanchukwu**, Yang Shao-Horn, and Paula T. Hammond. *A one-electron process in a gel polymer electrolyte Li-O2 battery*. ACS Spring National Meeting, 2016.
11.) **Chibueze V. Amanchukwu**, Yang Shao-Horn, and Paula T. Hammond. *PMMA-based gel polymer electrolyte for lithium-air batteries*. ACS Fall National Meeting, 2015.
12.) **Chibueze V. Amanchukwu**, Yang Shao-Horn, and Paula T. Hammond. *Solid-State Siloxane Polymer Electrolyte for Lithium-Air Batteries*. AIChE Annual Meeting, 2014.

13.) **Chibueze V. Amanchukwu**, Jonathon R. Harding, Yang Shao-Horn, and Paula T. Hammond. *The Chemical Stability of Polymers in Lithium-Air Batteries*. ECS International Meeting, 2014.

TEACHING

2022 – present:	**Instructor**, MENG 25310/35310 (Energy Storage and Conversion Devices)
2021 – present:	**Instructor**, MENG 24100 (Molecular Engineering Thermodynamics of Phase Equilibria II)
2017	**MIT Global Teaching Labs**, *Barcelona Spain* Taught mathematics and chemistry to high school students
2016	**Guest Lecturer,** *MIT* Synthesis of Polymers, Undergraduate/Graduate Course 10.569
2016	**Instructor, HSSP Program,** *MIT* Six-week class on African history; Taught to middle/high school students
2015	**Instructor,** *MIT* Polymer Science Laboratory, Undergraduate Course 10.467
2015	**Guest Lecturer,** *Cambridge Rindge and Latin High School* High School Chemistry Class
2015	**English as a Second Language (ESL) volunteer tutor**
2014	**Teaching Assistant,** *MIT* Polymer Science Laboratory, Undergraduate Course 10.467
2014 – 2015	**Math and Chemistry volunteer tutor**, *Cambridge Rindge and Latin High School*
2013 – 2015	**Splash Program,** *MIT* Taught multiple classes ("Colonialism on Africa," "How lithium-ion batteries work") to high school students

PATENTS

Chibueze V. Amanchukwu, Paula T. Hammond, Mariya Khiterer, Sang Bok Ma, Young-Gyoon Ryu, Yang Shao-Horn. "Stable Electrolyte for Li-Air Battery and Li-Air Battery Including the Same" US Patent No. 10256516

Peiyuan Ma and **Chibueze V. Amanchukwu**. "Lithium-ion batteries including co-intercalation-free ether solvents" Provisional Patent. Attorney Docket No. 507814.5000440

Minh Canh Vu, Hrishikesh Srinivasan, and **Chibueze V. Amanchukwu**. "Transition-Metal-Free And Solvent-Free Dual-Carbon Battery". U.S. Provisional Patent Application No: 63/806,380. Filed: May 2025.

Priyadarshini Mirmira and **Chibueze V. Amanchukwu**. "Crosslinked Sulfide-Polymer Hybrid Materials, One-Pot In Situ Preparation Thereof, And Uses Thereof." U.S. Provisional Patent Application No: 63/806,412

Bidushi Sarkar and **Chibueze V. Amanchukwu**. "Reactive Metal-Mediated Electrochemical Degradation Of Halogenated Compounds." U.S. Provisional Patent Application No: 63/748,533

Reginaldo Gomes and **Chibueze V. Amanchukwu**. "Integrating Carbon Dioxide Capture and Electrochemical Conversion Using Industrially Relevant Stream" U.S. Provisional App. No: 63/711,840

SERVICE

2024 – present	**Faculty Co-Director**, Data Science Institute AI + Science Research Initiative, UChicago
2023 – present	**Faculty Committee Member**, UChicago-Africa Working Group
2025 -- present	**Chair**, PME Materials Institute Seminar

2023 – present	**Founder**, Research Experience for Nigerian Engineering Undergraduates (RENEU) program. Provides virtual research experiences to Nigerian undergraduates.
2022 – present	**Founder**, Battery Day. Program held annually at the Museum of Science and Industry in Chicago (held as part of "Science Works")
2022 – present	**Faculty Committee Postdoc Review**, UChicago Data Science Institute Postdoctoral Scholars Program
2023	**Symposia Co-Organizer**, Next Generation Conversion-Alloying Chemistries for High Capacity Batteries. ACS Spring 2023 National Conference
2022	**Expert Witness**: United States Congressional Field Hearing. House Committee on Science, Space, and Technology. "Pedal to the Metal: Electric Vehicle Batteries and the Critical Minerals Supply Chain"
2019 – present	**Reviewer**: Nature Energy, Nature Catalysis, Nature Chemistry, Nature Communications, Journal of the American Chemical Society, Nano Letters, Joule, ChemComm, Advanced Materials, Advanced Functional Materials, Journal of Physical Chemistry, ACS Applied Materials and Interfaces, ACS Applied Energy Materials, Chemistry of Materials, Macromolecules, ACS Energy Letters, Journal of the Electrochemical Society, Energy Storage Materials. University of Maryland Industrial Partnerships (2023), DOE Office of Science (BES CPIMS, BES Catalysis) Reviewer, DOE Office of Science (Basic Energy Sciences) Reviewer, DOE Office of Science Graduate Student Research (SCGSR) Program Reviewer, MRS Student Awards (Spring 2022), UChicago-CNRS Collaboration Proposals (2022), Sloan Scholar Mentoring Network Grant Program (2022), Stanford Synchrotron Radiation Lightsource (SSRL, 2022), National Science Foundation (ENG/CBET/Electrochemical Systems, 2022, 2023, CAREER Panel 2024)
2020 – present	**Organizer**, US-Nigeria PhD Workshop. *Workshop aimed at preparing high-achieving Nigerian undergraduates for successful US engineering PhD applications*
2025 – present	**Electrochemical Society (ECS)** Committee (2025 – 2026), JES BATT Technical Editor
2022 – 2023	**JACS Au** Early Career Advisory Board
2024 – present	**Session Co-chair**, CO2-Electroreduction Methodology (ECS Fall 2024), Electrolyte-2 (ECS Fall 2024),
2022 – 2023	**Session Co-chair**, Charged and Ion Containing Polymers. AIChE Fall 2022 and Fall 2023 National Conference
2022	**Symposia Co-organizer**, Session Title: Recent Advances in Data-Driven Discovery of Materials for Energy Conversion and Storage. MRS Spring 2022 Conference.
2020 – present	**PME Admissions Committee** (Faculty co-lead: Water/Energy Review Session)
2022 – present	**PhD Thesis Defense Committee** (Chair, Peter Bennington (2022); Chair, Hongyi Zhang (2024))
2024 – present	**PME Faculty Search Committee** (AI + Materials (2024), High-throughput Polymer Electrolyte Search (2024), Computational Soft Materials (2025))
2020 – present	**PhD Candidacy Committee** (Graduate students: Kai Wang, Hongyi Zhang, Nicholas Boynton, Yang Li, Sarah Chen, Jane Wang, Omar Kazi, Jingtian Yang, Leeann Sun, Sammy Onajah, Suin Choi, Yunhao Zhao, Seonwoo Kim, Avi Gargye, Hedi (Jerry) Yang, Rishika Jarkar, Jaehee Park, Xiaoru Li, Colton Ginter, Kun Ryu, Mahadeen Nashiru, Liela Clarke)
2021	**Faculty session participant**, MRSEC Rising Stars in Soft and Biological Matter, September 23, 2021.
2021	**Poster Session Judge**, 1st Annual MRSEC Symposium, December 7, 2021
2020 – present	**Scientific Advisory Board**, Aionics Inc. (Data science for batteries startup)
2020 – 2023	**Community Board**, Journal: Materials Horizon
2020	**Panelist**, Virtual Academic Workshop (hosted by Professor Andrea Armani, USC)

2020	**Session co-chair**, *Polymers for Energy Storage and Conversion*. AIChE Fall National Conference
2016 – 2017	**Founder and Radio Host of "All Things Africa"** (MIT Radio 88.1 FM) (*Talk show on African news and topics affecting the continent and diaspora*)
2015	**Student Panelist**, MIT Corporation Development Committee (CDC) (*Committee members are MIT's highest level fundraising volunteers*)
2014 – 2017	**Environmental, Health and Safety (EHS) Representative**, *Hammond Lab, MIT*
2011 – 2012	**President**, *Texas A&M American Institute of Chemical Engineers (AIChE) chapter*
2010 – 2011	**Vice President – Finance**, *Texas A&M AIChE chapter*
2009 – 2010	**Secretary/Historian**, *Texas A&M AIChE chapter*

PROFESSIONAL DEVELOPMENT

2019	NECEM Summer School: NMR and EPR Spectroscopy for Energy Materials
2019	CASTEP Training Workshop, University of Oxford, United Kingdom
2018	NIST Center for Neutron Research, Summer school on the fundamentals of neutron scattering
2016	Future Faculty Workshop, University of Delaware

PROFESSIONAL SOCIETIES

American Institute of Chemical Engineers (AIChE), American Chemical Society (ACS), Academic Research Leadership Network (ARLN), Electrochemical Society (ECS), Materials Research Society (MRS)

ADVISEES

PhD Students

2026 – present: **Jingyi Wang**, Graduate Student, Molecular Engineering
2026 – present: **Yujin Li**, Graduate Student, Molecular Engineering
2026 – present: **Stanley Eshiemogie**, Graduate Student, Molecular Engineering
2026 – present: **Samuel Swartzendruber**, Graduate Student, Molecular Engineering
2025 – present: **Qi-Nan (Eric) Huang**, Graduate Student, Molecular Engineering
2025 – present: **Ester Naa Ayorkor Doku**, Graduate Student, Molecular Engineering
2025 – present: **Jon-Edward Stokes**, Graduate Student, Molecular Engineering
2024 – present: **Theodore (Ted) J. Houser**, Graduate Student, Molecular Engineering
2024 – present: **Matin Mohebi**, Graduate Student, Molecular Engineering
2024 – present: **Seunga Heo**, Graduate Student, Chemistry
2023 – present: **Ke-Hsin Wang**, Graduate Student, Molecular Engineering
2023 – present: **Hrishikesh Srinivasan**, Graduate Student, Molecular Engineering
2022 – present: **Emily Doyle**, Graduate Student, Molecular Engineering
2021 – present: **Hannah Fejzić**, Graduate Student, Molecular Engineering
2020 – 2025: **Reginaldo Gomes Neto**, Graduate Student, Molecular Engineering (now: Postdoc at Argonne National Laboratory)
2020 – 2024: **Peiyuan Ma**, Graduate Student, Molecular Engineering (now: CATL)
2020 – 2024: **Priyadarshini Mirmira**, Graduate Student, Molecular Engineering (now: US Government)

Postdoctoral Scholars

2025 – present: **Jay Bender**, Postdoctoral Scholar
2025 – present**: Zhiyuan Han**, Postdoctoral Scholar
2025 – present: **Bitgaram Kim**, Postdoctoral Scholar
2023 – present: **Bidushi Sarkar**, Postdoctoral Scholar
2022 – 2026: **Ritesh Kumar**, Postdoctoral Scholar (now: Assistant Professor at TCG CREST)
2021 – 2024: **Canh Vu**, Postdoctoral Scholar (now: Assistant Professor at VinUniversity)
2020 – 2021: **Jin Zheng**, Postdoctoral Scholar (Now: Sakuu)

Masters Students

2023 – 2025: **Jaemin Kim**, Graduate Student, Chemistry (now: Epic Solutions)
2024: **Qingyang Zhu**, Graduate Student, Molecular Engineering (now: Hitachi)
2023 – 2024: **Tarun Arora**, Masters Student, Masters Program in Computer Science (now: EXL Service)
2020 – 2021: **Zifeng Kang**, Masters Student, Masters Program in Computer Science (Now: Amazon)

Undergraduate Students
2025 **Alula Teklu**, Undergraduate Student, Tufts University
2025 **Leyou Gessessew**, Undergraduate Student (DSI), Wellesley College
2025 **Henry Hengyi Tsay**, Undergraduate Student (DSI), Purdue University
2025 **Huanyu Liang**, Undergraduate Student (UChicago-Taiwan Exchange Student)
2025 **Ksenya Mull**, Undergraduate Student (PME REU),
2025 **Miley Rodriguez**, High School Student (PME After School Matters)
2024 – 2025 **Diego Bey**, Undergraduate Student, Molecular Engineering
2024 – present **Mireya Lima Vasquez**, Undergraduate Student, Molecular Engineering
2024 – present **Francesca Gossett**, Undergraduate Student, Molecular Engineering
2024 – 2025 **Nora Molten**, Undergraduate Student, Molecular Engineering
2023 – 2025: **Luke Flees**, Undergraduate Student, Molecular Engineering
2023 – present **Alex Garcia**, Undergraduate Student, Molecular Engineering
2023 – present: **Luke Philips**, Undergraduate Student, Molecular Engineering
2024: **Daberechi Emezue**, Undergraduate Student (RENEU), University of Lagos
2024: **Ebube Agwaramgbo**, Undergraduate Student (PME REU)
2024: **Janelle Amegatse**, Undergraduate Student (PME REU)
2023: **Alec Chen**, Undergraduate Student, Physics
2023: **Brianna Ross**, High School Student (PME After School Matters)
2023: **Sarah Langham**, Undergraduate Student (PME REU), University of Florida
2023: **Stanley Eshiemogie**, Undergraduate Student (RENEU), University of Benin
2023: **Mariam Sanni**, Undergraduate Student (RENEU), Obafemi Awolowo University
2022 – 2024: **Arnav Brahmasandra**, Undergraduate Student, Molecular Engineering
2022 – 2023: **Uyen Le**, Undergraduate Student, Molecular Engineering
2022: **Trinity Hixson-Wells**, Undergraduate Student (MRSEC REU), Xavier University, Louisiana
2022 – 2023: **Zoe Umlauf**, Undergraduate Student, Molecular Engineering
2022 – 2023: **Ishaan Roy**, Undergraduate Student, Physics
2021 – 2022: **Lucy Schmid**, Undergraduate Student, Molecular Engineering
2020 – 2023: **Michael Han**, Undergraduate Student, Chemistry (Now: JP Morgan)
2020 – 2021: **Christopher Birch**, Undergraduate Student, Chemistry (Now: PhD Carnegie Mellon)
2020 – 2022: **Christina Pirrotta**, Undergraduate Student, Molecular Engineering (Now: Tesla)
2020 – 2022: **Walker Gillett**, Undergraduate Student, Molecular Engineering/Physics (Now: Oklo)
2020 – 2021: **Beamlak Lefebo**, Undergraduate Student, Physics (Now: Teacher at Churchill School)
2020 – 2022: **Benjamin Kash**, Undergraduate Student, Chemistry (Now: Twelve)
2021: **Runtong Yan**, Intern (Remote)
2021: **Cindy Xue**, Undergraduate Student, Molecular Engineering
2021 – 2022: **Claire Fuschi**, Undergraduate Student, Molecular Engineering (Now: Nanograf)
2021: **Oscar Pecho Rivera**, Undergraduate Student (REU), University of Louisiana Lafayette
2015 – 2017 **Robert Zabala**, Undergraduate Student, MIT
2015: **Audrey Eshun**, Undergraduate Student (MSRP), (Now: PhD University of Michigan)

MENTORING

2013 – present **Co-Founder, The Bridge Initiative** (*Program that provides mentors to Nigerian undergraduates seeking to pursue graduate study in top US universities*)
2017 – 2019 Rachel Adenekan, Graduate Student, Stanford University
2017 – 2018 Abigail Grosskopf, Graduate Student, Stanford University

TRAINEE ACCOMPLISHMENTS

UChicago Metcalf Fellowship: Arnav Brahmasandra (Fall 2022); Zoe Umlauf (Summer 2022, Summer 2023); Michael Han (Spring, Summer 2020); Christina Pirrotta (Spring, Summer 2020); Christopher Birch (Summer, Fall 2020); Walker Gillett (Summer 2020); Cindy Xue (Summer 2021); Benjamin Kash (Summer 2021).
PME Fellowship: Christina Pirrotta (Summer 2020)
Stamps Scholars Program: Christina Pirrotta (Summer 2020)
Liews Fellowship: Christopher Birch (Fall 2020)
Dean's Fund for Undergraduate Research Project Award: Michael Han (Spring 2021); Walker Gillett (Spring 2021)
UChicago Quad Research Scholars: Arnav Brahmasandra (2022-2023); Michael Han (2022-2023); Ishaan Roy (2022-2023); Cindy Xue (2021-2022); Walker Gillett (2021-2022).
Astronaut Scholar: Benjamin Kash (2021)
NSF GRFP: Hrishikesh Srinivasan (2024-2027); Benjamin Kash (undergrad, 2024-2027); Emily Doyle (2023-2026); Hannah Fejzić (2021-2024)
Maria Lastra PME Mentoring Award: Reginaldo Gomes (Honorable Mention, 2024); Peiyuan Ma (Honorable Mention, 2021)
Howard Murray Alumni Award: Christina Pirrotta (Spring 2022)
Roberto Rocca Fellowship: Reginaldo Gomes Neto (2022, 2023)
NSF NRT HDR Program (AIMEMS): Emily Doyle (2022-2024), Hrishikesh Srinivasan (2023-2025), Samuel Swartzendruber (2026), Stanley Eshiemogie (2026), Eric Huang (2026)
Schmidt AI in Science Postdoctoral Fellowship: Ritesh Kumar (2023-2025)
Electrochemical Society Travel Award: Peiyuan Ma (2023)
Safety Awards: Best Lab Safety Culture (Amanchukwu Lab, 2024)
PME Postdoc Travel Award: Bidushi Sarkar (2025)

DIVERSITY

Efforts to recruit minority students to pursue graduate studies

2020	Stanford SERGE Program, Panelist
2016	National Society of Black Engineers (NSBE) conference
2016	Application reviewer, MIT Summer Research Program
2015	National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NoBCChE) conference
2012 – 2017	MIT-ACCESS Program (*program held at MIT for underrepresented minority students to learn about graduate school*)