

SERENA ELEY

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Education

University of Illinois Urbana-Champaign (Uillinois), Urbana, IL, Ph.D., Physics, 2012
California Institute of Technology (Caltech), Pasadena, CA, B.S., Physics, 2002

Research Appointments

Assistant Professor , Department of Electrical & Computer Engineering University of Washington (Seattle, WA)	1/2023 – pres.
Assistant Professor , Department of Physics Colorado School of Mines (Golden, CO)	8/2018 – 1/2023
Acting Director of Quantum Engineering Program Colorado School of Mines (Golden, CO)	8/202 – 11/2021
Postdoctoral Researcher , Condensed Matter & Magnet Science Los Alamos National Laboratory (Los Alamos, NM)	2015 – 2018
Technical Staff , Department of Quantum Phenomena Sandia National Laboratories (Albuquerque, NM)	2012 – 2015
Process & Test Engineer Raytheon Infrared Operations (Goleta, CA)	2004
Research Assistant , Luce Scholars Fellowship, Superconductivity Research Labs (Tokyo, Japan)	2002 – 2003

Select Awards and Honors

• Quantum Matter & Information Fellow, Research Corporation for Science & Advancement	2025
• National Academy of Sciences, U.S.-Africa Frontiers symposium selected representative	2022
• Cottrell Scholars Award, Research Corporation for Science Advancement	2022
• Kavli-PARADIM Summer Fellowship, Cornell University	2022
• NSF CAREER Award, National Science Foundation	2021
• Joseph A. Johnson Award for Excellence in Experimental Physics	2021
• John Bardeen Award for Outstanding Dissertation, University of Illinois	2012
• Best Poster, Vortex Matter in Nanostructured Superconductors (Rhodes, Greece)	2011
• Surge Fellowship, University of Illinois Urbana-Champaign	2004 – 2009
• Goddard Award for Best Research Contribution, NASA Academy	2005
• International Achievement Summit Delegate, Academy of Achievement	2004
• Luce Scholar, Henry Luce Foundation	2002 – 2003

Select Publications

1. Jiangteng Liu, Masashi Miura, Daisaku Yokoe, Takeharu Kato, Akira Ibi, Teruo Izumi, and Serena Eley, Higher critical currents yet faster vortex creep in $\text{EuBa}_2\text{Cu}_3\text{O}_y$ films containing coherent artificial pinning centers, *Communications Materials* (Accepted)
2. H.S. Ruiza, J. Hänisch, M. Polichettic, et al., Critical current density in advanced superconductors, *Progress in Materials Science*, 155, 101492 (2026)
3. Jiangteng Liu, Ryan Schoell, Xiyue Zhang, Hongbin Yang, Michael Venuti, Hanjong Paik, David A. Muller, Tzu-Ming Lu, Khalid Hattar, and Serena Eley, Structural Properties and Recrystallization Effects in Ion Beam Modified B20-type FeGe Films, *APL Materials*, 13, 011112 (2025)

4. Collin E. Miller, Joshua Edwards, Chris Matsumura, Matthew Michael Schneider, Serena Eley, Suveen N. Mathaudhu, Owen J. Hildreth, Combinatorial Printing of Iron and Cobalt Reactive Inks to Produce Magnetic Amorphous and Nanocrystalline Metals, *ACS Applied Nano Materials* 7, 23, 27052-27063 (2024)
5. Masashi Miura, Serena Eley, Kazumasa Iida, et al., Quadrupling the depairing current density in the iron-based superconductor $\text{SmFeAsO}_{1-x}\text{H}_x$, *Nature Materials* 23, 1370-1378 (2024) [Highlighted in Obradors, X., Puig, T. Pin the vortex on the superconductor. *Nature Materials* 23, 1311–1312 (2024)].
6. M. B. Venuti Xiyue S. Zhang, Eric J Lang, Sadhvikas J. Addamane, Hanjong Paik, Portia Allen, Peter Sharma, David Muller, Khalid Hattar, Tzu-Ming Lu, Serena Eley, Inducing a Tunable Skyrmion-Antiskyrmion System through Ion Beam Modification of FeGe Films, *npj Spintronics* 2, 16 (2024)
7. Rebecca W. Smaha, John S. Mangum, Ian A. Leahy, Julian Calder, Matthew P. Hautzinger, Christopher P. Muzzillo, Craig L. Perkins, Kevin R. Talley, Serena Eley, Prashun Gorai, Sage R. Bauers, and Andriy Zakutayev, Structural and Optoelectronic Properties of Thin Film LaWN_3 , *Physical Review Materials* 7, 084411 (2023)
8. Haley Cole, M. B. Venuti, Mun K. Chan, Brian Gorman, Eric D. Bauer, Mun K. Chan, and Serena Eley, Plastic vortex creep and dimensional crossovers in the highly anisotropic superconductor $\text{HgBa}_2\text{CuO}_{4+d}$. *Physical Review B* 107, 104509 (2023)
9. Mahendra D C, et al., Observation of anti-damping spin-orbit torques generated by in-plane and out-of-plane spin polarizations in antiferromagnetic MnPd_3 , *Nature Materials* 22, 591–598 (2023)
10. Terence M. Bretz-Sullivan, Rupert M. Lewis, Ana L. Lima-Sharma, Peter A. Sharma, David Lidsky, Christopher Smyth, C. Thomas Harris, Michael Venuti, Serena Eley, Tzu-Ming Lu, High kinetic inductance NbTiN superconducting transmission line resonators in the very thin film limit. *Applied Physics Letters* 121, 5 (2022)
11. Abigail R. Meyer, Tarek O. Abdul Fattah, P. Craig Taylor, Michael B. Venuti, Serena Eley, Vincenzo LaSalvia, William Nemeth, Matthew Page, David L. Young, Matthew Halsall, Paul Stradins, and Sumit Agarwal, Spectroscopic Investigation of Shallow Hole Traps in Ga- and B-doped Czochralski Silicon: Insight into Light-Induced Degradation, *ACS Applied Energy Materials* 5, 11, 13161–13165 (2022)
12. Rachel Sherbondy, Rebecca W. Smaha, Megan Holtz, Kevin R. Talley, Christopher J. Bartelc, Ben Levy-Wendtd, Serena Eley, Craig L. Perkins, Andriy Zakutayev, and Geoff Brennecke, High-Throughput Selection and Experimental Realization of Two New Ce-Based Nitride Perovskites: CeMoN_3 and CeWN_3 , *Chemistry of Materials* 34, 15, 6883–6893 (2022)
13. Sarah C. Jones, Masashi Miura, Ryuji Yoshida, Takeharu Kato, Leonardo Civale, Roland Willa, and Serena Eley, Designing high-performance superconductors with nanoparticle inclusions: comparisons to strong pinning theory, *Applied Physics Letters Materials* 9, 091105 (2021).
14. Abigail R. Meyer, P. Craig Taylor, Michael B. Venuti, Serena Eley, Vincenzo LaSalvia, William Nemeth, Matthew R. Page, David L. Young, Paul Stradins, and Sumit Agarwal, Atomic structure of light-induced efficiency-degrading defects in boron doped Czochralski silicon solar cells, *Energy & Environmental Science* 14, 5416-5422 (2021)
15. S. Eley, A. Glatz, R. Willa, Challenges and Transformative Opportunities in Superconductor Vortex Physics. *Journal of Applied Physics* 130, 050901 (2021) [Editor's Pick. Featured on the cover. Highlighted in A. McConnon, Transformative opportunities in superconductor vortex physics, *Journal of Applied Physics* (2021). doi.org/10.1063/10.0005714]
16. K. J. Kihlstrom, L. Civale, S. Eley, D. Miller, U. Welp, W.-K. Kwok, P. Niraula, A. Kayani, G. Ghigo, F. Laviano, S. Fleshler, M. W. Rupich and M. Leroux, Large enhancement of the in-field critical current density of YBCO coated conductors due to composite pinning landscape, *Superconductor Science & Technology* 34, 015011 (2021)
17. S. Eley, R. Willa, M. K. Chan, E. D. Bauer, and L. Civale, Vortex phases and glassy dynamics in the highly anisotropic superconductor $\text{HgBa}_2\text{CuO}_{4+d}$. *Scientific Reports* 10, 10239 (2020)
18. K. R. Sapkota, S. Eley, E. Bussmann, C. T. Harris, L. N. Maurer, and T. M. Lu, Creation of nanoscale magnetic fields using nano-magnet arrays. *AIP Advances* 9, 075203 (2019) [Highlighted in C. Patrick, New nanoscale magnetic field method provides step for quantum computing, *AIP Advances* (2019).]

19. L. N. Maurer, J. K. Gamble, L. Tracy, S. Eley, and T. M. Lu, Designing Nanomagnet Arrays for Topological Nanowires in Silicon, *Physical Review Applied* 10, 054071 (2018)
20. S. Eley, K. Khilstrom, R. Fotovat, Z.L. Xiao, A. Chen, D. Chen, L. Civale, Glassy Dynamics in a heavy ion irradiated NbSe₂ crystal, *Scientific Reports* 8, 13162 (2018)
21. S. Eley, R. Willa, M. Miura, M. Sato, M. D. Henry, L. Civale, Accelerated vortex dynamics across the magnetic 3D-to-2D crossover in disordered superconductors, *npj Quantum Materials* 3, 37 (2018)
22. S. Eley, M. Miura, B. Maierov, L. Civale, Universal lower limit on vortex creep in superconductors, *Nature Materials* 16, 409–413 (2017)
23. P. Dioguardi, P. Guzman, P. F. S. Rosa, N. J. Ghimire, S. Eley, S. E. Brown, J. D. Thompson, E. D. Bauer, F. Ronning, Nuclear magnetic resonance investigation of the heavy fermion system Ce₂CoAl₇Ge₄, *Physical Review B* 96, 24 (2017)
24. S. Eley, M. Leroux, M.W. Rupich, D.J. Miller, H. Sheng, P.M. Niraula, A. Kayani, U. Welp, W.-K. Kwok, L. Civale, Decoupling and tuning competing effects of different types of defects on flux creep in irradiated YBa₂Cu₃O₇ coated conductors, *Superconductor Science & Technology* 30, 015010 (2017)
25. K. Huang, S. Eley, P. F. S. Rosa, L. Civale, E. D. Bauer, R. E. Baumbach, M. B. Maple, M. Janoschek, Quantum Critical Scaling in the Disordered Itinerant Ferromagnet UCo_{1-x}Fe_xGe, *Physical Review Letters* 117, 237202 (2016)
26. M. Durkin, I. Mondragon-Shem, S. Eley, T. L. Hughes, N. Mason, History-dependent dissipative vortex dynamics in superconducting arrays, *Physical Review B* 94, 024510 (2016)
27. M. W. Rupich, S. Sathiyamurthy, S. Fleshler, Q. Li, V. Solovyov, T. Ozaki, U. Welp, W.-K. Kwok, M. Leroux, A.E. Koshelev, D.J. Miller, K. Kihlstrom, L. Civale, S. Eley, A. Kayani, Engineered Pinning Landscapes for Enhanced 2G Coil Wire, *IEEE Transactions Applied Superconductivity* 26, 3 (2016)
28. N. J. Ghimire, S. K. Cary, S. Eley, N. A. Wakeham, P. F. S. Rosa, T. Albrecht-Schmitt, M. Janoschek, C. M. Brown, L. Civale, J. D. Thompson, F. Ronning, E. D. Bauer, Physical properties of the Ce₂MAI₇Ge₄ heavy-fermion compounds (M=Co, Ir, Ni, Pd), *Physical Review B* 93, 205141 (2016).
29. H. Sheng, J. Wen, L. Wang, D. J. Miller, M. Leroux, U. Welp, W. K. Kwok, M. W. Rupich, P. M. Niraula, A. Kayani, S. Eley, L. Civale, Irradiation Induced Defects in YBa₂Cu₃O₇ Coated Conductors, *Microscopy and Microanalysis* 22 (2016)
30. M. Leroux, K. J. Kihlstrom, S. Holleis, M. W. Rupich, S. Sathiyamurthy, S. Fleshler, H. P. Sheng, D. J. Miller, S. Eley, L. Civale, A. Kayani, P.M. Niraula, U. Welp, W. K. Kwok, Rapid Doubling of the Critical Current of YBa₂Cu₃O₇ Coated Conductors for Viable High-Speed Industrial Processing. *Applied Physics Letters* 107, 192601 (2015)
31. S. Eley, S. Gopalakrishnan, P. M. Goldbart, N. Mason, Dependence of global superconductivity on inter-island coupling in arrays of long SNS junctions. *Journal of Physics: Condensed Matter* 25, 445701 (2013)]
32. S. Eley, S. Gopalakrishnan, P. M. Goldbart, N. Mason, Approaching zero-temperature metallic states in mesoscopic superconductor-normal- superconductor arrays, *Nature Physics* 8 (1), 59–62 (2012) [Highlighted in Annett, J. F., *Nature Physics* 8, 8–9 (2012)]

Under Review

1. Jiangteng Liu, Alex Lopez, Zhaoyu Liu, Jiun-Haw Chu, and Serena Eley, Tripling of the Superconducting Critical Current Density in BaFe₂(As_{1-x}P_x)₂ Retained After Pressure Release
2. Chaman Gupta, Chris Matsumura, Hongbin Yang, Sarah Edwards, Rebeca M. Gurrola, Jiun-Haw Chu, Hanjong Paik, Yongqiang Wang, David A. Muller, Robert Streubel, Tzu-Ming Lu, and Serena Eley, Disorder-broadened topological Hall phase and anomalous Hall scaling in FeGe
3. Raahul Potluri, Rohin Tangirala, Sage Bauers, Alejandro Barrios, Praveen Kumar, Peter V. Sushko, David P. Pappas, Serena Eley, Fabrication and Structural Analysis of Trilayers for Tantalum Josephson Junctions with Ta₂O₅ Barriers

Select Invited Talks

1. University of British Columbia (Vancouver, BC), Condensed Matter Seminar, *Materials Engineering of Superconductors: Challenges and transformative opportunities in superconductor vortex physics*, January 2026.
2. Pacific Northwest National Lab (Richland, WA). *Materials Engineering of Superconductors: Challenges and transformative opportunities in superconductor vortex physics*, May 2025.
3. University of Nebraska's Center for Emergent Quantum Materials and Devices (Lincoln, NE). *Materials Engineering of Superconductors: Challenges and transformative opportunities in superconductor vortex physics*, April 2025.
4. Howard University (Washington, DC), IBM-HBCU Quantum Center. World Quantum Day talk. *Resistance is Futile: My Research Career in Superconductivity and Magnetism*. April 2025.
5. University of Idaho (Virtual). *Materials Engineering of Superconductors: Challenges and transformative opportunities in superconductor vortex physics*, October 2024.
6. Centre National de la Recherche Scientifique (CNRS), Toulouse National High Magnetic Field Laboratory (Toulouse, France). *Materials Engineering of Superconductors: Challenges and transformative opportunities in superconductor vortex physics*, September 2024.
7. University of Washington (Seattle, WA), Accelerating Quantum-Enabled Technologies Seminar, *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, February 2024.
8. CalBridge (Virtual), *Vortices in Superconductors*, May 2022.
9. University of Oregon (Virtual), Physics Colloquium. *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, May 2022.
10. Brown University (Providence, RI), Physics Seminar, *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, March 2022.
11. University of Colorado Boulder (Boulder, CO), Physics Colloquium, *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, February 2022.
12. University of Washington (Virtual), Materials Science Seminar, *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, February 2022.
13. Rice University (Houston, TX), Quantum Seminar Series, *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, January 2022.
14. University of California Los Angeles (Virtual), Physics Seminar, *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, March 2021.
15. Reed College (Virtual), Physics Seminar, *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, February 2021.
16. University of Colorado - Colorado Springs (Colorado Springs, CO), Physics Colloquium, *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, March 2019.
17. University of Wyoming (Laramie, WY), Physics Seminar, *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, March 2019.
18. High Precision Devices, Inc. (now FormFactor, Boulder, CO), *Introduction to Superconductivity*, February 2019.
19. Colorado State University (Fort Collins, CO), Physics Colloquium, *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, February 2019.
20. University of Denver (Denver, CO), Physics Colloquium. *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, January 2019.
21. Stanford Linear Accelerator Lab (Stanford, CA), Advanced Instrumentation Group Seminar, *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, April 2018.

22. Missouri University of Science & Technology (Rolla, MO), Physics Colloquium. *Resistance is Not Futile: Pinning Down Elusive Vortices in Superconductors*, April 2017.
23. American Superconductor (Devens, MA), Vortex Dynamics in YBCO Coated Conductors with Different Pinning Landscapes, April 2015.
24. Indiana University South Bend (South Bend, IN), Physics Seminar Series, *Josephson Effects in Superconductor-Normal-Superconductor Arrays*, April 2012.

Invited Conference Presentations

1. Iron-based Superconductors: Advances towards applications (Miyazaki, Japan). *Tuning the theoretical limits for the critical current density and vortex creep rate in iron-based superconductors*. February 2025.
2. Quantum Noir, Harvard University (Cambridge, MA). *Materials Engineering of Superconductors: Challenges and transformative opportunities in superconductor vortex physics*. June 2024.
3. 9th International Conference on Superconductivity & Magnetism, ICSM (Fethiye, Turkey), *Plastic vortex creep and dimensional crossovers in the highly anisotropic superconductor $\text{HgBa}_2\text{CuO}_{4+x}$* , May 2024.
4. International Union of Materials Research Societies MRM2023/IUMRS-ICA2023 Grand Meeting (Kyoto, Japan), *Vortex Creep in Superconductors*, December 2023.
5. U.S. National Academy of Sciences, U.S.-Africa Frontiers of Science, Engineering, and Medicine symposium (Nairobi, Kenya), *Vortices in Superconductors*, October 2022.
6. National Society of Black Physicists Conference (Virtual), *Designing high-performance superconductors with nanoparticle inclusions: Comparisons to strong pinning theory*, November 2021.
7. 7th International Conference on Superconductivity & Magnetism, ICSM (Milas-Bodrum, Turkey), *Designing high-performance superconductors with nanoparticle inclusions: comparisons to strong pinning theory*, October 2021.
8. APS Four Corners Meeting (Virtual), *Designing high-performance superconductors with nanoparticle inclusions: Comparisons to strong pinning theory*, October 2021.
9. QED-C Materials Defects and Losses in Superconducting Circuits (Google and SRI organized invitation-only workshop), University of California, Santa Barbara (Santa Barbara, CA), *Methods for studying and tuning vortex-defect interactions in superconductors*, January 2020.
10. European Conference on Applied Superconductivity (Geneva, Switzerland), *Universal Lower Limit for Creep in Superconductors*, September 2017.
11. DOE Energy Frontiers Research Center: Center for Emergent Superconductivity Workshop (Stony Brook, NY), *Universal Lower Limit for Creep in Superconductors*, November 2016.

Contributed Conference Presentations

1. European Applied Superconductivity Conference, EUCAS (Porto, Portugal), *Tuning the theoretical limits for the critical current density and vortex creep rate in iron-based superconductors*, September 2025.
2. European Applied Superconductivity Conference, EUCAS (Bologna, Italy), *Plastic vortex creep and dimensional crossovers in the highly anisotropic superconductor $\text{HgBa}_2\text{CuO}_{4+x}$* , October 2023.
3. Applied Superconductivity Conference (Honolulu, Hawaii), *Plastic vortex creep and dimensional crossovers in the highly anisotropic superconductor $\text{HgBa}_2\text{CuO}_{4+x}$ (poster)*, October 2022.
4. Applied Superconductivity Conference (Seattle, WA), *Accelerated vortex dynamics across the magnetic 3D-to-2D crossover in disordered superconductors (poster)*, October 2018.
5. APS March Meeting (Los Angeles, CA), *Dramatic Increase in Vortex Creep Rate with Decreasing Film Thickness in Disordered Superconductors*, March 2018.
6. APS March Meeting (New Orleans, LA), *Universal Lower Limit for Creep in Superconductors*, March 2017.

7. Applied Superconductivity Conference (Denver, CO), *Universal Lower Limit for Creep in Superconductors (poster)*, September 2016.
8. International Conference on Superconductivity and Magnetism (Fethiye, Turkey), *Competition Between Point and Nanoparticle Defects in Irradiated $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ Coated Conductors*, April 2016.
9. APS March Meeting (Baltimore, MD), *Tuning Vortex Creep in Irradiated $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ Coated Conductors*, March 2016.
10. APS March Meeting (Boston, MA), *Proximity Effect in Mesoscopic Superconductor-Normal-Superconductor Arrays*, March 2012.
11. Nanohour Interdisciplinary Seminar Series, University of Illinois (Urbana, IL), *Proximity Effect in Superconductor-Normal Metal-Superconductor Arrays*, November 2011.
12. Seventh International Conference on Vortex Matter in Nanostructured Superconductors (Rhodes, Greece), *Phase Fluctuations and Transitions in Proximity-coupled Superconducting Arrays (poster)*, September 2011.
13. Gordon Research Conference on Superconductivity (Waterville Valley, NH), *Phase Fluctuations and Transitions in Proximity-coupled Superconducting Arrays (poster)*, June 2011.
14. APS March Meeting (Dallas, TX), *Proximity Effects and Vortex Dynamics in Nanostructured Superconductors*, March 2011.
15. APS March Meeting (Portland, OR), *Proximity Effect in Nanostructured Superconductors*, March 2010.
16. Exotic Insulating States of Matter, John Hopkins University (Baltimore, MD), *Proximity Effect in Nanostructured Superconductors*, January 2010.

Research Grants

• Scialog Quantum Entanglement of Skyrmion-Antiskyrmion Pairs, RCSA	2026
• Controlling Skyrmion Dynamics Using Nanomagnet and Antidot Arrays, DOE	2025 – 2028
• Co-design Center for Quantum Advantage (C2QA), DOE	2025 – 2030
• MRSEC: UW Molecular Engineering Materials, NSF	2023 – 2029
• Identifying the Microscopic Origins of Energy Loss Mechanisms in Superconducting Quantum Circuits through Defect Landscape Engineering, RCSA	2022 – 2025
• Supporting MSIs in the Creation of a Diverse, Quantum-Ready Workforce, NSF	2021 – 2022
• CAREER: Skyrmion-Vortex Interactions in Ferromagnet-Superconductor Heterostructures, NSF	2021 – 2026
• Superconducting Quantum Circuits Made From Epitaxial Nitride, DOE LDRD	2020 – 2022
• MRI: Acquisition of an Automated, Variable Temperature and Magnetic Field Multi-property Measurement System, NSF	2019 – 2023
• QLCI-CG: The Open Quantum Frontier Institute, NSF	2020
• Quantum and Thermal Creep of Skyrmions and Superconducting Vortices, NSF	2019 – 2023

Select Service and Mentorship

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- **Conference Organization:** 2026 Applied Superconductivity Conference (Pittsburg, PA), 2023-25 European Applied Superconductivity Conference (Porto, Portugal; Bologna, Italy), 2022-23 Supporting Minority Serving Institutions in the Creation of a Diverse, Quantum-Ready Workforce (Wash., DC), 2020 Front Range Advanced Magnetism Symposium (Golden, CO), 2020 Open Quantum Frontier Institute Workshop (Golden, CO)
 - **External Committees:** Cientifico Latino Graduate Student Mentorship Initiative (2020 – 2024), IBM HBCU Quantum Coalition Research Advisory Board (2020 – pres.), Judge at Denver Metro STEM Fair (2019, 2021)
 - 32 undergraduate researchers, 5 master's students, 7 current Ph.D. students
 - **Publication Reviews:** Cryogenics, Journal of Applied Physics, IEEE Transactions Applied Superconductivity, Ceramics International, Nature Communications, Physical Review Letters, Science Advances, Scientific Reports
 - **Grant Proposal Review Committees:** NSF (2019-2025), NSF Reverse Site Visit Panelist (2023), NSF Site Visit Panelist (2025), DOE (2020), Oak Ridge Associated Universities (2023), DOE Center for Integrated Nanotechnologies (2024, 2025)