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Flatiron Institute
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Research Interests

- Materials for electronic and optoelectronic devices
- Density functional theory and electronic structure methods

Current Research Topics

- Electric polarization, piezoelectricity, and flexoelectricity
- Functional properties of complex oxides
- Electron-phonon coupling
- Properties of group III-nitride semiconductors
- Point defects in semiconductors and insulators

Education

2015 Postdoctoral Associate, Physics, Rutgers University; Advisor: David Vanderbilt
2014 Postdoctoral Researcher, Materials, UC Santa Barbara; Van de Walle Group
2014 Ph.D. in Materials, UC Santa Barbara; Advisor: Chris G. Van de Walle
2009 B.S. High Honors, in Engineering Science, Physics, and Mathematics (minor in Materials Science), University of Virginia

Publications

1. E. Cappelli, A. Hampel, A. Chikina, E. Bonini Guedes, G. Gatti, A. Hunter, J. Issing, N. Biskup, M. Varela, Cyrus E. Dreyer, A. Tamai, A. Georges, F.Y. Bruno, M. Radovic, F. Baumberger, "Electronic structure of the highly conductive perovskite oxide SrMoO3," *accepted in Phys. Rev. Mater. arXiv:*2203.05820
2. Alexis Aguilar-Arevalo, Fabricio Alcalde Bessia, Nicolas Avalos, Daniel Baxter, Xavier Bertou, Carla Bonifazi, Ana Botti, Mariano Cababie, Gustavo Cancelo, Brenda Aurea Cervantes-Vergara, Nuria Castello-Mor, Alvaro Chavarria, Claudio R. Chavez, Fernando Chierchie, Juan Manuel De Egea, Juan Carlos D`Olivo, Cyrus E. Dreyer, Alex Drlica-Wagner, Rouven Essig, Juan Estrada, Ezequiel Estrada, Erez Etzion, Guillermo Fernandez-Moroni, Marivi Fernandez-Serra, Steve Holland, Agustin Lantero Barreda, Andrew Lathrop, Jose Lipovetzky, Ben Loer, Edgar Marrufo Villalpando, Jorge Molina, Santiago Perez, Paolo Privitera, Dario Rodrigues, Richard Saldanha, Diego Santa Cruz, Aman Singal, Nathan Saffold, Leandro Stefanazzi, Miguel Sofo-Haro, Javier Tiffenberg, Christian Torres, Sho Uemura, Rocio Vilar, "The Oscura Experiment," *arXiv*:2202.10518.
3. Vidushi Sharma, Benjamin Bein, Amanda Lai, Betül Pamuk, Cyrus E. Dreyer, Marivi Fernández-Serra, Matthew Dawber, "Photocatalytic water oxidation on SrTiO3 [001] surfaces" *accepted in Phys. Rex. X Energy. arXiv*:2201.13443.
4. Asier Zabalo, Cyrus E. Dreyer, Massimiliano Stengel, "Rotational *g* factors and Lorentz forces of molecules and solids from density-functional perturbation theory," *Phys. Rev. B* **105**, 094305 (2022). *arXiv*:2112.11946.

5. Lukas Muechler, Danis I. Badrtdinov, Alexander Hampel, Jennifer Cano, Malte Rösner, Cyrus E. Dreyer, "Quantum embedding methods for correlated excited states of point defects: Case studies and challenges," *Phys. Rev. B* **105**, 235104, *arXiv*:2105.08705.
6. Danis I. Badrtdinov, Alexander Hampel, Cyrus E. Dreyer, "Interplay between breathing-mode distortions and magnetic order in rare-earth nickelates from ab initio magnetic models," *Phys. Rev. B* **104**, 054403 (2021), *arXiv*:2103.08412.
7. Cyrus E. Dreyer, Sinisa Coh, Massimiliano Stengel, "Nonadiabatic Born effective charges in metals and the Drude weight," *Phys. Rev. Lett.* **128**, 095901 (2022). **Editor's Suggestion.** *arXiv*:2103.044251.
8. Alexander Hampel, Jeremy Lee-Hand, Antoine Georges, Cyrus E. Dreyer, "Correlation-Induced Octahedral Rotations in SrMoO3," *Phys. Rev. B* **104**, 035102 (2021) *arXiv*:2012.07871
9. Nicholas L. Adamski, Cyrus E. Dreyer, and Chris G. Van de Walle, "Polarization properties at rocksalt/wurtzite oxide interfaces," *Phys. Rev. B* **102**, 201301(R) (2020)
10. Mark E. Turiansky, Audrius Alkauskas, Manuel Engel, Georg Kresse, Darshana Wickramaratne, Jimmy-Xuan Shen, Cyrus E. Dreyer, Chris G. Van de Walle "Nonrad: Computing Nonradiative Capture Coefficients from First Principles," *Comput. Phys Commun.* **267**, 108056 (2021), *arXiv*:2011.07433
11. Jeremy Lee-Hand, Alexander Hampel, Cyrus E. Dreyer "First-principles study of the electronic, magnetic, and crystal structure of perovskite molybdates," *Phys. Rev. Materials* **5**, 085001 (2021). *arXiv*:2011.08323
12. Cyrus E. Dreyer, Audrius Alkauskas, John L. Lyons, and Chris G. Van de Walle, "Radiative capture rates at deep defects from electronic structure calculations," *Phys. Rev. B* **102**, 085305 (2020), *arXiv*:2008.02732
13. Jinsoo Park, Jin-Jian Zhou, Vatsal A. Jhalani, Cyrus E. Dreyer, Marco Bernardi, "Long-range quadrupole electron-phonon interaction from first principles," *Phys. Rev. B* **102**, 125203 (2020), *arXiv*:2003.13782
14. Aldo H. Romero, Douglas C. Allan, Bernard Amadon Gabriel Antonius, Thomas Applencourt, Lucas Baguet, Jordan Bieder, François Bottin, Johann Bouchet, Eric Bousquet, Fabien Bruneval, Guillaume Brunin, Damien Caliste, Michel Côté, Jules Denier, Cyrus Dreyer, Philippe Ghosez, Matteo Giantomassi, Yannick Gillet, Olivier Gingras, Donald R. Hamann, Geoffroy Hautier, François Jollet, Gérald Jomard, Alexandre Martin, Henrique P. C. Miranda, Francesco Naccarato, Guido Petretto, Nicholas A. Pike, Valentin Planes, Sergei Prokhorenko, Tonatiuh Rangel, Fabio Ricci, Gian-Marco Rignanese, Miquel Royo, Massimiliano Stengel, Marc Torrent, Michiel J. van Setten, Benoit Van Troeye, Matthieu J. Verstraete, Julia Wiktor, Josef W. Zwanziger, and Xavier Gonze, "ABINIT: Overview and focus on selected capabilities," *J. Chem. Phys.* **152**, 124102 (2020).
15. Vatsal A. Jhalani, Jin-Jian Zhou, Jinsoo Park, Cyrus E. Dreyer, Marco Bernardi, "Piezoelectric Electron-Phonon Interaction from Ab Initio Dynamical Quadrupoles: Impact on Charge Transport in Wurtzite GaN," *Phys. Rev. Lett.* 125, 136602 (2020), *arXiv*:2002.08351
16. V. Sunko, P. H. McGuinness, C. S. Chang, E. Zhakina, S. Khim, C. E. Dreyer, M. Konczykowski, M. König, D. A. Muller, A. P. Mackenzie, "Controlled introduction of defects to delafossite metals by electron irradiation," *Phys. Rev. X* **10**, 021018 (2020), *arXiv*:2001.01471
17. L. J. McGilly, A. Kerelsky, N. R. Finney, K. Shapovalov, E.-M. Shih, A. Ghiotto, Y. Zeng, S. L. Moore, W. Wu, Y.Bai, K. Watanabe, T. Taniguchi, M. Stengel, L. Zhou, J. Hone, X.-Y. Zhu, D.N. Basov, C. Dean, C. E. Dreyer, and A. N. Pasupathy, "Visualization of moiré superlattices," *Nature Nanotechnology* 15, 580 (2020), *arXiv*:1912.06629

18. Darshana Wickramaratne, Cyrus E. Dreyer, Jimmy-Xuan Shen, John L. Lyons, Audrius Alkauskas, and Chris G. Van de Walle, "Deep-Level Defects and Impurities in InGaN Alloys," *Phys. Status Solidi B.* (2019). **Featured Article.**
19. Nicholas L. Adamski, Cyrus E. Dreyer, Chris G. Van de Walle, "Giant polarization charge density at lattice-matched GaN/ScN interfaces" *Appl. Phys. Lett.* **115**, 232103 (2019). *arXiv*:1910.00142
20. Darshana Wickramaratne, Jimmy-Xuan Shen, Cyrus E. Dreyer, Audrius Alkauskas, and Chris G. Van de Walle, "Electrical and optical properties of iron in GaN, AlN, and InN," *Phys. Rev. B* **99**, 205202 (2019).
21. Andrea Schiaffino, Cyrus E. Dreyer, David Vanderbilt, and Massimiliano Stengel, "Metric-wave approach to flexoelectricity within density-functional perturbation theory," *Phys. Rev. B* **99**, 085107 (2019). **Editor's Suggestion.** *arXiv*:1811.12893
22. Darshana Wickramaratne, Cyrus E. Dreyer, Bartomeu Monserrat, Jimmy-Xuan Shen, John L. Lyons, Audrius Alkauskas, Chris G. Van de Walle, "Defect identification based on first-principles calculations for deep level transient spectroscopy," *Appl. Phys. Lett.* **113**, 192106 (2018). **Featured Article**. *arXiv:*1810.05302
23. Cyrus E. Dreyer, Massimiliano Stengel, David Vanderbilt, "Current-density implementation for calculating flexoelectric coefficients," *Phys. Rev. B* **98**, 075153 (2018). **Editor's Suggestion.** *arXiv*:1802.06390
24. Cyrus E. Dreyer, Audrius Alkauskas, John L. Lyons, Anderson Janotti, and Chris G. Van de Walle, "First-principles calculations of point defects for quantum technologies," *Annu. Rev. Mater. Res.,* **48**, 2.1 (2018).
25. Bartomeu Monserrat, Cyrus E. Dreyer, Karin M. Rabe, "Phonon-assisted optical absorption in BaSnO3 from first principles," *Phys. Rev. B* **97**, 104310 (2018). *arXiv*:1709.09196
26. Richard C. Cramer, Bastien Bonef, John English, Cyrus E. Dreyer, Chris G. Van de Walle, and James S. Speck, "Growth of coherent BGaN films using BBr3 gas as a boron source in plasma assisted molecular beam epitaxy," *J. Vac. Sci. Technol. A* **35**, 041509 (2017). **Editor's pick**.
27. Jimmy-Xuan Shen, Darshana Wickramaratne, Cyrus E. Dreyer, Audrius Alkauskas, Erin Young, James S. Speck, and Chris G. Van de Walle, "Calcium as a nonradiative recombination center in InGaN," *Appl. Phys. Express*, **10**, 021001 (2017).
28. Darshana Wickramaratne, Jimmy-Xuan Shen, Cyrus E. Dreyer, Manuel Engel, Martijn Marsman, Georg Kresse, Saulius Marcinkevicius, Audrius Alkauskas, and Chris G. Van de Walle, "Iron as a source of efficient Shockley-Read-Hall recombination in GaN," *Appl. Phys. Lett.,* **109**, 162107 (2016).
29. Kevin R. Bagnall, Cyrus E. Dreyer, David Vanderbilt, and Evelyn N. Wang, "Electric Field Dependence of Optical Phonon Frequencies in Wurtzite GaN Observed in GaN High Electron Mobility Transistors," *J. Appl. Phys.* **120**, 155104 (2016).
30. Hiral D. Tailor, John L. Lyons, Cyrus E. Dreyer, Anderson Janotti, and Chris G. Van de Walle, "Impact of nitrogen and carbon on defect equilibrium in ZrO_2," *Acta Materialia,* **117**, 286 (2016).
31. Cyrus E. Dreyer, Anderson Janotti, Chris G. Van de Walle, and David Vanderbilt, "Correct implementation of polarization constants in wurtzite materials and impact on III-nitrides," *Phys. Rev. X,* **6**, 021038 (2016). *arXiv*:1605.07629
32. Audrius Alkauskas, Cyrus E. Dreyer, John L. Lyons, and Chris G. Van de Walle, "Role of excited states in Shockley-Read-Hall recombination in wide-band-gap semiconductors," *Phys. Rev. B* **93**, 201304(R) (2016). **Editor's Suggestion.** *arXiv*:1605.05673
33. Cyrus E. Dreyer, Audrius Alkauskas, John L. Lyons, James S. Speck, and Chris G. Van de Walle, "Gallium vacancy complexes as a cause of Shockley-Read-Hall recombination

in III-nitride light emitters," *Appl. Phys. Lett.* **108**, 141101 (2016). **Selected for feature article and issue cover.**

34. Patrick M. McBride, Anderson Janotti, Cyrus E. Dreyer, Burak Himmetoglu, and Chris G. Van de Walle, "Effects of biaxial stress and layer thickness on octahedral tilts in LaNiO3," *Appl. Phys. Lett.* **107**, 261901 (2015).
35. Karthik Krishnaswamy, Cyrus E. Dreyer, Anderson Janotti, and Chris G. Van de Walle, "First-principles study of surface charging in $LaAlO_3/SrTiO_3$ heterostructures," *Phys. Rev. B* **92**, 085420 (2015).
36. Cyrus E. Dreyer, Anderson Janotti, and Chris G. Van de Walle, "Brittle fracture toughnesses of GaN and AlN from first-principles surface-energy calculations." *Appl. Phys. Lett.* **106**, 212103 (2015).
37. Karthik Krishnaswamy, Cyrus E. Dreyer, Anderson Janotti, and Chris G. Van de Walle, "Structure and energetics of $LaAlO_3$ (001) surfaces," *Phys. Rev. B* **90**, 235436 (2014).
38. Cyrus E. Dreyer, John L. Lyons, Anderson Janotti, and Chris G. Van de Walle, "Band alignments and polarization properties of BN polymorphs," *Appl. Phys. Express* **7**, 031001 (2014).
39. Cyrus E. Dreyer, Anderson Janotti, and Chris G. Van de Walle, "Absolute surface energies of polar and nonpolar planes of wurtzite GaN," *Phys. Rev. B* **89**, 081305(R) (2014). **Editor's Suggestion.**
40. Cyrus E. Dreyer, Anderson Janotti, and Chris G. Van de Walle, "Effects of strain on the electron effective mass in GaN and AlN," *Appl. Phys. Lett.* **102**, 142105 (2013).
41. Cyrus E. Dreyer, William V. Chiu, Robert H. Wagoner, and Sean R. Agnew, "Formability of a More Randomly Textured Magnesium Alloy Sheet: Application of an Improved Warm Sheet Formability Test," *J. Mater. Process Tech.* **210**, 37 (2010).

Reference Module

1. "Point Defects and Impurities in III-Nitride Bulk and Thin Film Heterostructures", C. E. Dreyer and C. G. Van de Walle, in *Reference Module in Materials Science and Materials Engineering*, edited by S. Hashmi (Elsevier, Oxford, 2016), pp. 1-8.

Invited Talks/Seminars

1. "Computational spectroscopy for point defects," APS March Meeting, March 2022
2. "The method of long waves: New *ab initio* results from a classic technique," Seminar, Institute for Condensed Matter Theory, October 2021
3. "Computational spectroscopy for point defects," International Conference on Defects in Semiconductors (Plenary talk), July 2021
4. "Understanding solids with supercomputers, many electrons at a time," Aspen Center for Physics public lecture, July 2021
5. "Nonadiabatic Born effective charges in metals and the Drude weight," Ferrolectures series, June 2021
6. "First-principles calculations of point defects for quantum applications," Flatiron Institute CCQ Seminar, May 2020
7. "Flexoelectricity in 2D materials," Stony Brook Condensed Matter Seminar, May 2020
8. "Understanding solids with supercomputers, many electrons at a time," Stony Brook World of Physics, Stony Brook NY, February 2020
9. "Electron-phonon coupling from first principles: Novel implementations and applications," BNL CFN Seminar, Upton NY, December 2019
10. "Theoretical identification and characterization of point defects," CUNY physics department colloquium, New York, NY, October 2019
11. "The modern theory of polarization with a twist," Lehigh physics department colloquium, Bethlehem, PA, September 2019

12. “Performing and interpreting first-principles calculations for point-defect properties,” International Conference on Defects in Semiconductors, Seattle, WA, July 2019
13. “Flexoelectricity from first principles,” Theory of Condensed Matter Seminar, Radboud University, Nijmegen, The Netherlands, May 2019
14. “Flexoelectricity from first principles,” Theory of Condensed Matter seminar, Cambridge University, UK, May 2019
15. “Current-density implementation for calculating flexoelectric coefficients of cubic oxides,” Electronic Materials and Applications 2019, Orlando, FL, January 2019
16. “Flexoelectricity from first principles,” Seminar, Santa Barbara, CA, January 2019
17. “Electron-phonon coupling from first principles: Novel implementations and applications,” MRSEC Seminar, Columbia University, New York, NY, January 2019
18. “Current-density implementation for calculating flexoelectric coefficients,” Electronic Structure Workshop, Philadelphia, PA, June 2018
19. “Current-density implementation for calculating flexoelectric coefficients,” Materials Science and Technology Division, United States Naval Research Laboratory, Washington D.C., June 2018
20. "Carrier capture and recombination at point defects from first principles,” APS User Meeting, Argonne National Lab, Agonne, IL, May 2018
21. “Electron-phonon coupling from first principles: Novel implementations and applications,” Department of Physics and Astronomy, Stony Brook University, Stony Brook, NY, February 2018
22. “Electron-phonon coupling from first principles: Novel implementations and applications,” Flatiron Institute Center for Computational Quantum Physics, New York, NY, February 2018
23. “Sources of Shockley-Read-Hall in III-nitrides,” International Conference on Defects in Semiconductors, Matsue, Japan, August 2017
24. “The role of electron-phonon coupling in carrier capture at defects,” APS March Meeting, New Orleans, LA, March 2017
25. “Shockley-Read-Hall recombination from first principles: Improving the efficiency of III-nitride devices,” Seminar at Institut de Ciència de Materials de Barcelona, Barcelona, Spain
26. “Sources of Shockley-Read-Hall recombination in III-Nitrides,” Condensed Matter Seminar, UC Santa Cruz, CA, October 2016
27. "Radiative capture of carriers at defects from first principles," Northrup-Grumman Next Workshop on Physics of Light-matter Interactions and Excited State Dynamics, Redondo Beach, CA, October, 2016
28. “Sources of Shockley-Read-Hall recombination in III-Nitrides,” Institute for Energy Efficiency seminar, UC Santa Barbara, CA, October, 2016
29. “Sources of Shockley-Read-Hall recombination in III-Nitrides,” Center for Computational Design of Functional Layered Materials seminar, Temple University, Philadelphia, PA, October, 2016
30. “Accurate treatment of spontaneous polarization in III-nitrides,” International Symposium of Semiconductor Light Emitting Devices, Kaohsiung, Taiwan, December, 2014
31. “Spontaneous polarization in III-nitrides and the importance of a consistent reference structure,” Nitrides Seminar, UC Santa Barbara, Santa Barbara, CA, May 2014
32. “Absolute surface energies of polar and non-polar planes in GaN,” Nitrides Seminar, UC Santa Barbara, Santa Barbara, CA, November, 2012

Contributed talks

1. “First-principles calculations of flexoelectricity in bulk boron nitride,” Fundamental physics of ferroelectrics and related materials, Silver Spring, MD, January 2020
2. “Current density at finite q for clamped-ion flexoelectricity,” Abinit developers meeting, Louvain-la-Neuve, Belgium, May 2019
3. “Current-density implementation for calculating flexoelectric coefficients,” APS March Meeting, Los Angeles, CA, March 2018
4. “Current-density implementation for calculating flexoelectric coefficients,” 32nd Annual Symposium of the Laboratory for Surface Modification and Institute for Advanced Materials, Devices, and Nanotechnology, Piscataway, NJ, February 2018
5. “Current-density implementation for calculating flexoelectric coefficients,” Fundamental Physics of Ferroelectrics, Washington D.C., January 2018
6. “Current-density implementation for calculating flexoelectric coefficients,” APS Mid-Atlantic Section Meeting, Newark, NJ, November 2017
7. “Correct implementation of polarization constants in wurtzite materials and impact on III-nitrides,”APS March Meeting, New Orleans, LA, March 2017
8. “Sources of Shockley-Read-Hall recombination in III-nitride light emitters,” APS March Meeting, Baltimore, MD, March 2016
9. “Accurate treatment of spontaneous polarization in III-nitrides,” APS March Meeting, San Antonio, TX, March 2015
10. “Absolute surface energies, fracture toughness, and cracking in nitrides,” International Workshop on Nitrides, Wroclaw, Poland, August, 2014
11. “Absolute surface energies, fracture toughness, and cracking in nitrides,” APS March Meeting, Denver, CO, March 2014
12. “Absolute surface energies, fracture toughness, and cracking in nitrides,” Solid State Lighting and Energy Center Review, Santa Barbara, CA, November 2013
13. “Absolute surface energies of polar and nonpolar planes in GaN,” International Conference on Nitride Semiconductors, Washington D.C., August, 2013
14. “Absolute surface energies of polar and nonpolar planes in GaN,” APS March Meeting, Baltimore, MD, March, 2013
15. “Absolute surface energies of polar and non-polar planes in GaN,” Annual Meeting of the California-Nevada Section of the APS, San Luis Obispo, CA, November, 2012
16. “Surface energies and cracking in GaN,” APS March Meeeting, Boston, MA, March, 2012
17. “Effects of strain on effective masses in GaN and AlN,” TMS Electronic Materials Conference, Santa Barbara, CA, June 2011
18. “Effects of strain on effective masses in GaN and AlN,” APS March Meeting, Dallas, TX, March, 2011
19. “Extracting post-uniform constitutive behavior from high temperature tensile test data,” TMS Annual Meeting, Seattle, WA, February, 2010

Awards

2017 Poster Award for: “Towards a supercell-free current-based calculation of flexoelectric couplings,” presented at Fundamental Physics of Ferroelectrics, 2017

2013 Finalist in Grad Slam three-minute research talk competition

2013 Solid State Lighting and Energy Center Outstanding Graduate Student Research Achievement Award

Press Coverage

1. “LED Lighting May Now Shine Brighter: Scientists apprehended the atomic-scale, microscopic mechanism that limits light emission in LED lighting,” News Wise, March 1, 2017

2. “LEDs: Resolving the iron conundrum,” Compound Semiconductor, December 2016
3. “Trace amounts of transition-metal impurities in GaN kill LED efficiency,” Semiconductor Today, November 11, 2016
4. “Trace metal recombination centres kill LED efficiency,” Compound Semiconductor, November 7, 2016
5. “Trace metal recombination centers kill LED efficiency,” AAAS Eureka Alert, November 3, 2016
6. “Supercomputers Help Identify Efficiency-Limiting Defects in LEDs,” NERSC.gov, July 18, 2016
7. “Correcting charge polarization calculations for III-nitrides,” Semiconductor Today, July 6, 2016
8. “LED lighting may now shine brighter,” US DOE Office of Science, Science Highlight, July 1, 2016
9. “Unraveling the nature of point defects in nitride LEDs,” Compound Semiconductor, June 4, 2016
10. “Defects in LED diodes that lead to less efficient solid state lighting identified,” Energy Daily, April 13, 2016
11. “Certain type of vacancy in gallium nitride based LEDs lowers their efficiency,” Laser Focus World, April 11, 2016
12. “Identifying defects in LED materials promises more efficient lighting,” Smart2Zero, April 7, 2016
13. “Researchers identify specific defects in LED diodes that lead to less efficient solid state lighting,” Phys.org, Science Daily, AAAS Eureka Alert, April 6, 2016
14. “Becoming Crystal Clear: UCSB researchers identify specific defects in LED diodes that lead to less efficient solid state lighting,” The UC Santa Barbara Current, April 5, 2016
15. “Theoretical technique identifies defects in LED materials,” Photonics Media, April 2016
16. “Aiding nitride growth with accurate surface energies,” Compound Semiconductor, May 19, 2014

Professional Activities

2022:	Organized session on recent developments and applications of DFT+DMFT at the 33rd IUPAP Conference on Computational Physics
2021:	Co-organized the International Workshop on Recent Developments in Electronic Structure (ES21).
2020-2021:	Co-organized 2020 and 2021 Fundamental Physics of Ferroelectrics workshop
2019:	Taught python programming to high school students at “IACS Computes” programming camp
2019:	Organized Defects and Dopants in Semiconductors Focus Session at 2019 APS March Meeting
2017-2019:	Member of advisory committee for International Conference on Defects in Semiconductors
2018:	Chair of 2018 Gordon Research Seminar on Defects in Semiconductors
2014:	Selected by the Dean of the Graduate Division to meet with local lawmakers at California Graduate Research Advocacy Day
2014:	Selected for Communications Committee of UCSB Institute for Energy Efficiency
2011-2021:	Reviewed manuscripts for: Physical Review Applied, Physical Review B, Physical Review Letters, Physical Review Materials, Physical Review Applied, Applied Physics Letters, Nano Letters, Journal of Electronic Materials, Journal of Applied Physics, Physica Status Solidi B, Journal of Crystal Growth, New

Journal of Chemistry, RSC Advances, Advanced Materials Interfaces, Surface Science Reports, Nanophotonics