Jennifer T. Heath

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Education

M.S., Ph.D., Physics, University of Oregon, 2002

Research Advisor: Dr. J. David Cohen

B.A. Cum Laude, Math and Physics, Whitman College, 1995

Research interests

Electronic properties of materials

Nanoparticle/organic composite thermoelectric materials (Au/PEDOT:PSS)

Thin-film photovoltaic materials and devices

2D materials and devices

Scanning Probe Microscopy

Academic positions

Professor, Department of Physics, Reed College, 2022-present

Professor, Department of Physics, Linfield College, 2013-2022

Chair, Department of Physics, Linfield College, 2010-2013; 2018-2021

Visiting Research Professor, University of Washington, 2016-2017 in the lab of Dr. David Cobden

Associate Professor, Linfield College, 2008-2013

Visiting Scientist, National Renewable Energy Laboratory, 2009-2010 with Mowafak Al-Jassim, Measurements and Characterization group

Assistant Professor, Linfield College, 2002-2008

Research assistant, University of Oregon Dept. of Physics, 1999-2002 advisor: Dr. J. David Cohen

Teaching assistant, University of Oregon Dept. of Physics, 2002; 1998-1999 Department of Education GAANN fellow.

Industry experience

Optics Technician, ETEC Co., 1997

Performed laser and optics quality control inspections. Built optics subassemblies for production.

Columns Technician, FEI Co., 1995-1997

Assembled and tested prototype ion beam focusing columns from engineering drawings. Troubleshot columns and testing systems to component level.

External funding

National Science Foundation, "Collaborative Research: RUI: Effects of Interfacial Properties on Charge Transport in Conducting Organic/Inorganic Composites." DMR-2226593, \$265,767, Oct. 2022-Aug 2025. [collaborators funded separately-- N. Coates and W. Paige Hall, U. Portland, \$396,694].

The M. J. Murdock Charitable trust, "Start-up research package for new position in physics." \$36,000. Aug. 2022-Aug. 2025. [Note that the physics department applied for this funding on my behalf; I'm now responsible for outcomes and reports.]

National Science Foundation, "MRI: Acquisition of an atomic force microscope for multidisciplinary research and undergraduate education." DMR-1827971. \$180,677, Sept. 2018-April 2021. (with co-PI's M. Crosser, E. O. Atkinson, M. L. Bestwick, Linfield University)

The M.J. Murdock Charitable Trust, "Two-dimensional devices: potential barriers and screening." \$59,950, February 2018-February 2022.

National Science Foundation (Research Opportunity Award for NSF EFRI 2-DARE award 1433496): Spin-Valley Coupling for Photonic and Spintronic Devices. ROA Project Title: Carrier dynamics and spin transport in spin-valley coupled materials and devices. \$102,874, August 2016-July 2017. (add-on award to an NSF grant for D. H. Cobden)

American Physical Society, Travel funding to the professional skills development workshop, \$450, February 2012.

National Renewable Energy Laboratory, Travel funding to support sabbatical research with the measurements and characterization group, \$11,000, August 2009-May 2010; January 2011.

American Chemical Society Petroleum Research Fund, "Effect of grain boundary type on subbandgap defects in polycrystalline silicon films," Undergraduate Faculty Sabbatical, \$32,851, August 2009-May 2010.

consulting services for the photovoltaics industry (conducted through the Linfield Research Institute), summer 2012; summer 2007.

National Renewable Energy Laboratory, "Identifying the electronic properties relevant to improving the performance of high band-gap copper based I-III-VI₂ chalcopyrite thin film photovoltaic devices," secondary subcontract through J. D. Cohen, U. of Oregon under the "high performance photovoltaics" initiative, \$106,441, April 2004-October 2007.

Publications

h-index is 12 with 953 total citations as of 9-8-2024.

- 1. **L. Russell**, **E. A. Rein**, **A. Piatigorsky**, J. T. Heath, "Measuring radiation pressure force with a torsion pendulum: a platform for independent student experimentation," Am. J. Phys. *in press* 2025.
- 2. J. T. Heath and J. Li, "Ch. 1: Introduction to capacitance spectroscopy in semiconductors," and J. T. Heath, "Ch. 4: Capacitance-Voltage and Drive-Level Capacitance Profiling," in *Capacitance spectroscopy of semiconductors*, edited by J. Li (Pan-Stanford, 2018).
- 3. J.T. Heath and P.W. Zabierowsky, "Capacitance spectroscopy of thin-film solar cells," in *Advanced Characterization Techniques for Thin-Film Solar Cells, 2nd edition*, edited by D. Abou-Ras, T. Kirchartz, and U. Rau (Wiley, Weinheim Germany, 2016) Ch. 4.
- 4. C.W. Warren, J. Li, C.A. Wolden, D.W. Miller, J.T. Heath, M.C. Lonergan, "The effect of copper on the sub-bandgap density of states of CdTe solar cells," Appl. Phys. Lett. **106**, 203903 (2015).
- 5. J.W. Boucher, D.W. Miller, C.W. Warren, J.D. Cohen, B.E. McCandles, J.T. Heath, M.C. Lonergan, S.W. Boettcher, "Optical response of deep defects as revealed by transient photocapacitance and photocurrent spectroscopy in CdTe/CdS solar cells," Sol. En. Mat. and Sol. Cells 129, 57 (2014).
- 6. C. W. Warren, D. W. Miller, F. Yasin, and J. T. Heath, "Characterization of Bulk Defect Response in Cu(In,Ga)Se₂ Thin-Film Solar Cell using DLTS," *Proceedings of the 39th IEEE Phoovoltaic Specialists conference*, (IEEE, Tampa, 2013).]
- 7. J.T. Heath, C. –S. Jiang, and M.M. Al-Jassim, "Measurement of semiconductor surface potential using the scanning electron microscope," J. Appl. Phys. **111**, 046103 (2012).
- 8. C. –S. Jiang, J.T. Heath, H.R. Moutinho, and M.M. Al-Jassim, "Scanning Capacitance Spectroscopy on n⁺-p asymmetrical Junctions in Multicrystalline Si Solar Cells," J. Appl. Phys **110**, 014514, (2011).
- 9. J.T. Heath and P.W. Zabierowsky, "Capacitance spectroscopy of thin-film solar cells," in *Advanced Characterization Techniques for Thin-Film Solar Cells*, edited by D. Abou-Ras, T. Kirchartz, and U. Rau (Wiley, Weinheim Germany, 2011) Ch. 4.
- 10. J.T. Heath, C.-S. Jiang, and M.M. Al-Jassim, "Imaging the solar cell pn junction and depletion region," *Proceedings of the 37th IEEE Photovoltaic Specialists conference*, (IEEE, Seattle, 2011).]
- 11. C.-S. Jiang, J.T. Heath, H.R. Moutinho, J.V. Li, and M.M. Al-Jassim, "Nanoelectrical Characterizations of n+-p Asymmetrical Junctions Using Atomic Force Microscopy-Based Techniques," *Proceedings of the 37th IEEE PVSC*, (IEEE, Seattle, 2011).
- 12. J.T. Heath, C.-S. Jiang, and M.M. Al-Jassim, "Diffused junctions in multicrystalline silicon solar cells studied by complementary scanning probe microscopy and scanning electron microscopy techniques," *Proceedings of the 35th IEEE PVSC* (IEEE, Honolulu, 2010).

- 13. J.T. Heath, C. –S. Jiang, H. R. Moutinho, and M. M. Al-Jassim, "Investigation of charge trapping at grain boundaries in polycrystalline and multicrystalline silicon solar cells," *Proceedings of the Materials Research Society*, **1268** (MRS, San Francisco, 2010).
- 14. **J.J. Rembold, T.W. Curtis**, J.T. Heath, D.L. Young, S.W. Johnston and W.N. Shafarman, "Electronic defects and device performance in CuGaSe₂ solar cells," *Thin-Film Compound Semiconductor Photovoltaics—2007*, edited by T. Gessert, K. Durose, C. Heske, S. Marsillac, T. Wada, (Cambridge University Press, New York, 2007).
- 15. J.D. Cohen, J.T. Heath and W.N. Shafarman, "Defect studies using photocapacitance spectroscopy in the copper indium diselenide alloys" in *Wide-Gap Chalcopyrites; Springer Series in Materials Science Vol. 86*, S. Siebentritt, U. Rau, eds. (Springer-Verlag, Berlin, 2006) p. 69-90.
- 16. J.W. Lee, <u>J.T. Heath</u>, J.D. Cohen, and W.N. Shafarman, "Role of bulk defect states in limiting CIGS device properties," in *Proceedings of the 14th World Conference on Photovoltaic Energy Conversion* (IEEE, Hawaii, 2006).
- 17. P.K. Johnson, J.T. Heath, J.D. Cohen, K. Ramanathan, and J.R. Sites, "A comparative study of defect states in selenized and evaporated CIGS(S) solar cells," Prog. Photov. **13**, 1 (2005).
- 18. J. Lee, <u>J.T. Heath</u>, J.D. Cohen, and W.N. Shafarman, "Detailed study of metastable effects in the Cu(InGa)Se₂ alloys: Test of defect creation models," Mat.Res.Soc. Symp. Proc. **865**, 373 (2005). (Data collected by **J.J. Rembold** and **T.W. Curtis** was included in this publication.)
- 19. J.T. Heath, J.D. Cohen, and W.N. Shafarman, "The study of bulk and metastable defects in Copper Indium Gallium Diselenide using drive level capacitance profiling," J. Appl. Phys. 95, 1000 (2004)
- 20. J.T. Heath, J.D. Cohen, and W.N. Shafarman, "Distinguishing metastable changes in bulk CIGS defect densities from interface effects," Thin Solid Films **431-432**, 426 (2003)
- 21. A. Rockett, D. Liao, J. T. Heath, J. D. Cohen, Y. M. Strzhemechny, L. J. Brillson, K. Ramanathan, and W. N. Shafarman, "Near-surface defect distributions in Cu(In,Ga)Se₂," Thin Solid Films **431-432**, 301 (2003).
- J. T. Heath, J. D. Cohen, and W.N. Shafarman, "Defects in Copper Indium Aluminum Diselenide Films and their Impact on Photovoltaic Device Performance," Mat. Res. Soc. Symp. 763, 441 (2003).
- 23. J. D. Cohen, J. T. Heath, and W. N. Shafarman, "New Junction Capacitance Methods for the Study of Defect Distributions and Carrier Properties in the Copper Indium Diselenide Alloys," Mat. Res. Soc. Symp. **763**, 429 (2003).
- 24. J.T. Heath, J.D. Cohen, W.N. Shafarman, D.X. Liao, and A.A. Rockett, "Effect of Ga content on defect states and minority carrier mobility in CuIn_{1-x}Ga_xSe₂ photovoltaic devices," Appl. Phys. Lett. **80**, 4540 (2002).
- 25. J.T. Heath, J.D. Cohen, and W.N. Shafarman, "Correlation between deep defect states and device parameters in CuIn_{1-x}Ga_xSe₂ photovoltaic devices," in *Proceedings of the 29th IEEE Photovoltaic Specialists Conference*, (IEEE, New Orleans, 2002) p. 596.
- J.D. Cohen, J.T. Heath, K.C. Paliniginis, J.C. Yang, and S. Guha, "Insights into the mechanisms of light-induced degradation from studies of defects in low Ge fraction a-Si,Ge:H alloys," J. Non-Crys. Solids 299A, 449 (2002).

- 27. J.T. Heath, J.D. Cohen, W.N. Shafarman, and D.C. Johnson, "Characterization of deep defects in CuIn_{1-x}Ga_xSe₂ (CIGS) working photovoltaic devices," in *Photovoltaics for the 21st Century II*, R.D. McConnell and V.K Kapur, eds., The Electrochemical Society, Inc., New Jersey (2001) 324.
- 28. J.D. Cohen, J.T. Heath, K.C. Palinginis, J.C. Yang, and S. Guha, "Light-induced annealing of deep defects in low Ge fraction a-Si,Ge:H Alloys: further insights into the fundamentals of light-induced degradation," Mats. Res. Soc. Symp. Proc. 664, A12.5.1 (2001).
- 29. J.T. Heath, S.B. Iyer, Y. Lubianiker, J.D. Cohen, and G. Ganguly, "Correlation between film and cell properties for DC plasma deposited amorphous silicon," Mats. Res. Soc. Symp. Proc, **664** A25.3.1 (2001).

Invited presentations and workshops

"Oscillating systems in physics: two examples," Portland State University, April 2025.

"Mapping the energy landscape in electronic devices," Lewis and Clark College, March 2025.

"Mapping the energy landscape," Reed College Faculty Showcase, March 2025.

"Imaging electronic properties of 2D devices using Kelvin Probe Force Microscopy," Reed College, November 2021.

"Directly imaging electronic properties with the Scanning Electron Microscope," Reed College, December 2012.

"Understanding the electronic properties of solar cell materials," New Mexico Institute of Technology, April 2010.

"Peering into the heart of a solar cell," Four Corners section of the American Physical Society, Weber State University, Ogden, UT, October 2010 (*invited plenary presentation*).

"Peering into the heart of a solar cell," Willamette University, October 2010.

"Good defect, bad defect: electronic properties of CuGaSe₂ solar cells," Ninth annual meeting of the Northwest section of the American Physical Society, Pocatello, ID, May 2007 (*invited plenary presentation*)

"Capacitance Measurements," Young scientist's tutorial on characterization techniques for thin film solar cells, Materials Research Society spring meeting, San Francisco, April 2007 (workshop).

- J. T. Heath, "Materials research in photovoltaics: CuIn_xGa_{1-x}Se₂," Reed College, September 2005; Whitman College, April 2005; Lewis and Clark College, February 2003.
- J. T. Heath, "Admittance Techniques," Young Scientists Tutorial on characterization techniques for thin film solar cells, Materials Research Society spring meeting, San Francisco, March 2005 (workshop).

Conference presentations (since 2015)

presenter listed first; undergraduate students in bold

- 1. **R. Jalal**, **J. F. Odell**, N. Coates, P. Hall, J. T. Heath, "Electric transport in organic conductive polymer-inorganic nanocomposites," American Physical Society global physics summit, March 2025 (poster).
- 2. **J. F. Odell**, **R. Jalal**, N. Coates, P. Hall, J. T. Heath, "Transition between semiconducting and metallic behavior in PEDOT:PSS composites," American Physical Society global physics summit, March 2025 (poster).
- 3. **N. Rogers,** J. T. Heath, "Exfoliating and Characterizing mm-Size 2D MoS₂ films," American Physical Society March Meeting, Minneapolis, MN, March 2024 (Oral) (presentation award winner).
- 4. **R. Jalal**, **P. S. Oli**, J. T. Heath, "Temperature and Frequency-Dependent Electric Response in Conductive Polymer Composite" American Physical Society March Meeting, Minneapolis, MN, March 2024 (Oral).
- 5. N. E. Coates, J. T. Heath, W. P. Hall, **K. Aldura**, **P. Oli**, **E. Robinson**, **R. Brown**, "Investigating the impact of nanoscale structures on thermoelectric transport in polymer-nanoparticle composites," American Physical Society March Meeting, Minneapolis, MN, March 2024. (Oral)
- 6. **J. Sanders**, **W. S. Kim**, J. T. Heath, N. Coates, and W. P. Hall, "Characterization of PEDOT:PSS@AuNP Thermoelectrics by Raman Spectroscopy." The Many Flavors of Chemistry: American Chemical Society 267th National Meeting and Exposition; 2024 March 17 21; New Orleans, LA. (poster)
- 7. W. S. Kim, J. Sanders, E. Robinson, R. Brown, Z Irving-Singh, J. T. Heath, N. Coates, and W. P. Hall, "Ex-Situ Synthesis and Characterization of PEDOT:PSS-Au NP Composite Thermoelectrics", American Vacuum Society 69th International Symposium & Exhibition, November 5 10, 2023, The Oregon Convention Center, Portland, OR, USA. (poster)
- 8. **E. Robinson**, **R. Brown**, J. T. Heath, N. Coates, and W. P. Hall, "Understanding the Role of the Interface in Thermoelectric Materials", American Vacuum Society 69th International Symposium & Exhibition, November 5 10, 2023, The Oregon Convention Center, Portland, OR, USA. (poster)
- 9. **P. Oli, R. Jalal, A. Schaeffer**, J. Heath, "Scanning probe microscopy of nanoparticle-polymer composites." Murdock Trust Undergraduate Conference, Vancouver WA, November 2023 (poster).
- 10. N. Coates, **A. Hyslop**, **N. Warren**, J. Heath, **A. Schaeffer**, W. P. Hall, and Z. Irving-Singh, "Manipulating interfaces in polymer-nanoparticle composites to affect their energy conversion and storage." American Physical Society March Meeting, Las Vegas, NV, March 2023 (oral presentation)
- 11. A. Schaeffer, J. Heath, N. Warren, A. Hyslop, N. Coates, and P. Hall, "Investigating Structure and Conductivity in a PEDOT:PSS and Au System" American Physical Society March Meeting, Las Vegas, NV, March 2023 (oral presentation).

- 12. **B. Panchumarthi**, "Dielectric response of bulk h-BN" American Physical Society March Meeting, Las Vegas, NV, March 2023 (poster).
- 13. **J. Murphy, J. Toledo-Urena, A. Landry**, and J. T. Heath, "Characterizing the electronic properties of 2D devices using KPFM," Murdock Trust Undergraduate Conference, Vancouver WA, November 2021 (poster).
- 14. **A. Landry, J. Murphy**, and J. T. Heath, "Current-Voltage profiling of a graphene-on-gold contact with the Cypher AFM," Murdock Trust Undergraduate Conference, Vancouver WA, November 2021 (poster).
- 15. **J. Toledo-Urena**, **J. Murphy**, **B. Greenlee**, **W. Shannon**, and J. T. Heath, "Building 2-dimensional devices," Murdock Trust Undergraduate Conference, Vancouver WA, November 2018 (poster); American Physical Society March Meeting, Boston MA, March 2019 (poster) (*accepted but canceled due to COVID-19).
- 16. **F. McKay**, M. Seitz, M. Adams, P. Nguyen, B. Dzyubenko, J. T. Heath, D. Cobden, "Scalable Growth and Characterization of Monolayer WSe₂" American Physical Society March Meeting, New Orleans LA, March 2017 (oral presentation).
- 17. **T. Cox**, **A. Ogle**, and J. T. Heath, "Capacitance of thin film solar cells: Violating the depletion approximation" American Physical Society March Meeting, Baltimore MD, March 2016 (oral presentation).
- 18. **A. Ogle**, **T. Cox**, and J. T. Heath, "Frequency and voltage dependence of series resistance in a solar cell" American Physical Society March Meeting, Baltimore MD, March 2016. Also presented at the Murdock Trust Undergraduate Conference (Vancouver WA, October 2015). (poster)
- 19. J. T. Heath, C. Reinke, M. Crosser, A. Kruchten, "Engaging undergraduates in interdisciplinary science during a pre-orientation camp" American Physical Society March Meeting, San Antonio TX, March 2015.
- 20. **J. Davis, T. Cox,** and J. T. Heath, "Capacitance measurements of defects in solar cells: checking the model assumptions," American Physical Society March Meeting, San Antonio TX, March 2015. [winner of an undergraduate poster presentation award].

Research and senior thesis students mentored

Reed College

- 1. Leo Barnes (Physics '25) senior thesis, "Thunderstorms, Linearity, and Climate Change: An Analysis of the Relationships Between Temperature, Precipitation, and Lightning in the Americas From 2018-2024."
- 2. Adam Friedland (Physics '25) senior thesis, "Studying the Potential for Kelvin Probe Force Microscopy on Polymer Surfaces with Embedded Nanostructures."
- 3. Rubayat Jalal (Physics '26) 2023-2025
- 4. Zander Scholl (Physics '26) 2023-2025
- 5. Zeke Rein (Physics '27) 2023-2025

- 6. Leland Russell (Physics '27) 2023-2025
- 7. Joaquin Fernandez Odell (Physics '25) summer 2024
- 8. Noah Miller (Physics '26) summer 2024
- 9. Teddie Stewart (Physics, '24) senior thesis, "Characterizing electrical properties of 2D and 3D materials as Field-Effect Transistors."
- 10. Hope Palmer (Physics, '24) senior thesis, "That's Hot! Heat Loss at the Reed Research Reactor."
- 11. Anatalya Piatigorsky (Physics, '24) senior thesis, "Experiments in Photon Propulsion: A Lab-Based Investigation into the Mechanism Behind Solar Sailing."
- 12. Natalie Rogers (Physics, '24) 2023-2024; post-baccalaureate researcher 2025.
- 13. Pratik Oli (Physics, '26), summer 2023-2024.
- 14. Daniel Collier (Physics, '25) summer 2023.
- 15. Leo Yang (Physics, '26) summer 2023.
- 16. Amelia Schaeffer (Physics-Chemistry '23), "Striking Gold: An Atomic Force Microscopy Study of Gold Nanoparticle-Polymer Interfaces."
- 17. Bhavana Panchumarthi (Physics, '23), "Dielectric Response of Bulk hBN."

Linfield University

- 1. Joseph Murphy (Physics, '22) 2019-2022; senior thesis 2022.
- 2. Joel Toledo-Urena (Physics, '20) 2018-2021; senior thesis 2020.
- 3. Alex Landry (Physics, '22) 2020-2021.
- 4. Becky Smith (Physics, '21) 2019-2020.
- 5. Samantha Hawkins (Biochemistry, '21) fall 2019.
- 6. Joseph Simpson (Mathematics, '20) summer 2019.
- 7. Morgan Chamberlain (Physics, '20) fall 2019.
- 8. William Shannon (Physics, '19) 2018-2019; Senior thesis 2019.
- 9. Byron Greenlee (Applied Physics, '19) summer 2018; Senior thesis 2019.
- 10. Alex Ogle (Physics, '16) 2015-2016; Senior thesis 2016.
- 11. Thaddeus Cox (Physics, '16) 2014-2016; Senior thesis 2016.
- 12. Justin Davis (Physics, '15) 2013-2015. Senior thesis 2015.
- 13. Addison Wisthoff (Physics, '14) 2013.
- 14. James Harger (Applied Physics '16) 2013.
- 15. Emily Van Doozer, Summer 2011.
- 16. Kathleen O'Brien (Physics, '11) 2010- 2011; Senior thesis 2011.
- 17. Joel Pentecost (Physics, '10) 2009- 2010; Senior thesis 2010.
- 18. Josh Lovell (Physics, '10) 2009-2010; Senior thesis 2010.
- 19. Jeff Baker (Physics, '09) 2007-2009; Senior thesis 2009.
- 20. Andrew Sharp (Physics, '08) 2007-2008. Senior thesis 2008.
- 21. Todd Curtis (Physics, '07) 2004-2007. Senior thesis 2007.
- 22. Jed Rembold (Physics, '07) 2004-2007. Senior thesis 2007.
- 23. Zachary Billey (Physics, '07) Summer 2006.
- 24. Taylor Streng (Applied Physics, '06) 2005-2006. Senior thesis 2006.

Workshops and training (attended) since 2022

New faculty orientation workshop series (fall 2022-spring 2024).

Supporting neurodivergent students in the classroom, facilitated by Paloma Casteleiro Costa, Georgia Tech. January 2023.

CTL workshops: Orals boards (April 2023), Reading evaluations (February 2023), Syllabus exchange (January 2023), Digital accessibility: Moodle (Spring 2025), Digital accessibility: documents (Spring 2025).

New advisor workshop series (fall 2023-spring 2024).

CTL reads: Bell Hooks (Spring 2023), Remembering and Forgetting in the age of Technology (Fall 2023

Trauma-informed pedagogy workshop with Dr. Mays Imad, Connecticut College (Nov 8, 2023)

Service to the profession

External reviewer- Physics program, departmental review. Whitman College (2022). Willamette University (2025).

Reviewer: National Science Foundation grant proposal review for DMR Electronic and Photonic materials (2023); DMR NSF-MRI (2019, 2020).

Reviewer: Journal of Applied Physics, Applied Physics Letters, Applied Physics Materials, Thin Solid Films, Solid-State Electronics, American Journal of Physics.

Executive Committee (Vice-chair, Chair-elect, Chair, Past-chair), American Physical Society Northwest section (NWAPS), 2008-2013.

Nominations committee chair, NWAPS, 2011-2013.

Organizing committee, NWAPS annual meeting, 2009-2011:

2010 meeting, Whitman College, program committee chair.

2011 meeting, Oregon State University, conference chair.

Abstract selection and sorting committee, IEEE Photovoltaic Specialists Conference, June 2012 and June 2011.

Session chair, IEEE Photovoltaic Specialists Conference, June 2011 and June 2010.

Nominations committee, Topical group on energy research and applications, American Physical Society, 2010-2011.

Academic service and outreach, Reed College

Combined degrees program committee; advisor for 3-2 engineering programs (2024-present)

Fellowships and Awards committee (2023-present)

Open Days, "Microscopy of Materials," Nov. 4, 2023 (14 attendees).

Admissions and Financial Aid committee (2022-2023)

Academic service, Linfield University

Chair, Division of Natural Sciences and Mathematics (2020-2022)

Chair, Physics department (2010-2013; 2018-2022)

Society of Physics Students advisor (2004-2009, 2013-2022)

College Planning and Budgeting Council, science division representative (2017-2020)

Freshman Colloquium Advisor (2003, 2004, 2005, 2008, 2012, 2014, 2017, 2020)

Presidential Transition Team (2018)

Director, PLACE program (2015-2016); associate director (2014-2015).

President's Advisory Committee on the Environment and Sustainability. (2008-2011 and 2013-2015; chair, Curriculum focus group, 2014).

Chair, Strategic planning working group: intercampus relations (2011-2012)

Combined Planning and Budget committee (2010-2011)

Planning Council (2008-2009)

Admissions Committee (2004-2008; Chair 2006-2008)