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PROFESSIONAL PREPARATION:

B. S.:	Penn State University,	Engineering Science and Mechanics,	(2002)
Ph. D.:	Northwestern University,	Materials Science and Engineering,	(2007)
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APPOINTMENTS:

Associate Editor [8/22 –] – *Physical Review Materials*
Department Head [7/20 – 6/25] – Dept. Materials Science and Engineering, Drexel University
Professor [9/19 –] – Dept. Materials Science and Engineering, Drexel University
Associate Professor [9/15 – 8/19] – Dept. Materials Science and Engineering, Drexel University
Assistant Professor [8/09 – 8/15] – Dept. Materials Science and Engineering, Drexel University

JOURNAL PUBLICATIONS:

110. R. Dutta, P. M. Laxmeesha, T. Tandon, T. D. Tucker, S. Sheikh, U. M. Jayathilake, W. Tian, A. A. Aczel, T.-L. Lee, A. X. Gray, S. J. May, "Electronic and magnetic properties of hole-doped topological kagome $Fe_{1-x}Mn_xSn$ thin films", *Physical Review Materials* **9**, 074201 (2025). DOI: 10.1103/st9s-hsyr.

109. A. F. May, G. Yumnam, R. P. Hermann, S. Calder, B. M. Lefler, S. J. May, Z. E. Brubaker, M. Brahlek, X. Xu, D. Ovchinnikov, M. A. McGuire, "Cleavable quaternary oxychlorides with high magnetic ordering temperatures", *Physical Review Materials* **9**, 034002 (2025). DOI: 10.1103/PhysRevMaterials.9.034002.

108. T. D. Tucker, Z. Yang, D. Bugallo, R. Dutta, P. M. Laxmeesha, G. A. Marrero-Hernández, S. J. May, "Strain-Dependent Optical Blue-Shift Upon F Incorporation in Oxyfluoride $SrCo(O,F)_{3-x}$ Films", *Inorganic Chemistry* **64**, 4483 (2025). DOI: 10.1021/acs.inorgchem.4c05324.

107. J. Santana, D. Bugallo, A. Mirea, T. D. Tucker, D. Gonzalez-Narvaez, A. Rosario-Crespo, Y. Sanchez-Navarro, G. Marrero-Hernández, K. Rosa-Dieppa, A. Garcia-Ramos, R. Rai, Rajeev, E. Stach, S. J. May, A. M. Rappe, "Octahedral and tetrahedral coordination influences the ordering of oxygen vacancy channels in $SrCoO_{2.5}$ and $SrFeO_{2.5}$ thin films", *Chemistry of Materials* **36**, 11814 (2024). DOI: 10.1021/acs.chemmater.4c02081.

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and cardiac rhythm management electrodes via reactive hierarchical surface restructuring", *Microsystems & Nanoengineering* **10**, 125 (2024). DOI: 10.1038/s41378-024-00754-w.

104. Y. Yang, M. Anayee, A. Pattammattel, M. Shekhirev, R. (John) Wang, X. Huang, Y. S. Chu, Y. Gogotsi, S. J. May, "Enhanced magnetic susceptibility in $Ti_3C_2T_x$ MXene with Co and Ni incorporation", *Nanoscale* **16**, 5760 (2024). DOI: 10.1039/D3NR05685F.

103. P. M. Laxmeesha, T. D. Tucker, R. K. Rai, S. Li, M.-W. Yoo, E. A. Stach, A. Hoffmann, S. J. May, "Epitaxial growth and magnetic properties of kagome metal FeSn/elemental ferromagnet heterostructures", *Journal of Applied Physics* **135**, 085302 (2024). DOI: 10.1063/5.0188457.

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59. A. L. Krick, C.-W. Lee, R. J. Sichel-Tissot, A. M. Rappe, and S. J. May, "Interplay between cation and charge ordering in $La_{1/3}Sr_{2/3}FeO_3$ superlattices", *Advanced Electronic Materials* **2**, 1500372 (2016). DOI: 10.1002/aelm.201500372.

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BOOK CHAPTERS:

1. S. J. May, "X-ray Scattering-based Methods" to appear in *Materials Characterization Methods for Epitaxial Films and Heterostructures*, ed. Scott Chambers (World Scientific Publishing).
2. S. J. May, "Measuring Octahedral Rotations in Perovskite Oxide Heterostructures" in *X-ray Scattering Techniques for Epitaxial Complex Metal Oxides*, ed. P. Evans, N. Valanoor, and D. Sando (AIP Publishing, 2025), pp. 137-166.

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SUBMITTED MANUSCRIPTS:

1. "Magnetism in MXenes", S. J. May, submitted to *2D Materials* (2025).
2. "Metal-glassy metal transition in $Ti_3C_2T_x$ single-flake electronic devices", F. Urban, S. Ippolito, J. Frostad, J. D. Gouveia, J. R. B. Gomes, P. P. Michalowski, S. J. May, P. Samori, Y. Gogotsi, submitted to *Nano Letters*.

INVITED PRESENTATIONS:

72. "Tuning electronic function in epitaxial perovskite oxides through anionic manipulation", S. J. May, Emerging Trends in Semiconductor Technologies Workshop, University at Buffalo, August 22-22, 2024.
71. "Magnetotransport and weak localization in $Ti_3C_2T_x$ single flakes", S. J. May, 3rd International MXene Conference at Drexel University, Philadelphia, PA, August 5-7, 2024.
70. "Anion-based approaches to engineer interfacial properties in perovskite oxide heterostructures", S. J. May, Colorado School of Mines, MME seminar, April 11, 2024.
69. "Resonant soft x-ray reflectivity: Progress, challenges and opportunities", S. J. May, Workshop on Current and Potential Soft X-ray and Tender Spectroscopy and Capabilities at NSLS-II, April 24, 2023 (held virtually).
68. "Progress towards magnetic MXenes", S. J. May, 2nd International MXene Conference at Drexel University, Philadelphia, PA, August 1-3, 2022.
67. "Anion-based approaches to engineering functionality in perovskite oxide heterostructures", S. J. May, University of Central Florida, MSE seminar, November 5, 2021.
66. "Anion-based approaches to engineering functionality in perovskite oxide heterostructures", S. J. May, University of Southern California, MSE seminar, March 30, 2021.
65. "Effect of interfaces on band hybridization, orbital polarization, and helical magnetism in $SrFeO_3/CaFeO_3$ heterostructures", S. J. May, American Physical Society March meeting, March 15-19, 2021 (held virtually).

64. “Electronic character and magnetic order in quantum heterostructures: Opportunities for combined neutron and resonant x-ray scattering approaches”, S. J. May, Workshop on Neutrons and Complementary Techniques for Quantum Materials, August 18-21, 2020 (held virtually).

63. “Probing electronic degrees of freedom at buried interfaces in quantum heterostructures using resonant x-ray reflectivity”, S. J. May, Electronic Materials Conference, June 24-26, 2020 (held virtually).

62. “Depth-profiling electronic degrees of freedom in epitaxial heterostructures with resonant soft x-ray reflectivity”, S. J. May, NSLS II user meeting, Soft X-ray Scattering and Spectroscopy at NSLS-II: Gap Analysis workshop, May 18-20, 2020 (held virtually).

61. “Opportunities in epitaxial mixed-anion perovskite oxyfluorides”, S. J. May, Electronic Materials and Applications conference, Orlando, FL, January 22-24, 2020.

60. “Control of electronic character in oxide heterostructures: Beyond charge-based doping”, S. J. May, Temple University, physics colloquium, October 28, 2019.

59. “Combining oxide epitaxy and topochemistry: From electron-doped manganites to lateral anionic heterostructures”, S. J. May, International Conference on Crystal Growth and Epitaxy, Keystone, CO, July 29-August 2, 2019.

58. “Anion-based approaches to engineering functionality in perovskite oxide heterostructures”, S. J. May, University of Michigan, MSE seminar, April 5, 2019.

57. “Anionic modifications in metal oxide thin films”, S. J. May, Drexel University, Chemistry department seminar, November 16, 2018.

56. “Metal-insulator transition, ligand holes, and orbital polarization in $CaFeO_3$ heterostructures”, S. J. May, Spin and Electronic Order in Functional Materials workshop at the Advanced Light Source user meeting, October 3-4, 2018.

55. “Anion-based approaches to engineering functionality in perovskite oxide heterostructures”, S. J. May, UC Davis, MSE seminar, October 2, 2018.

54. “Control of electronic bandwidth and hybridization in quantum oxide heterostructures”, S. J. May, University of Delaware seminar, September 17, 2018.

53. “Opportunities in magnetic oxide interfaces”, S. J. May, Quantum Materials Young Investigators Workshop, Oak Ridge, TN, June 7-8, 2018.

52. “Functional Properties of $CaFeO_3$ and $SrFeO_3$ Heterostructures”, S. J. May, 5th Workshop on Complex Oxides, Capri, Italy, May 21-25, 2018.

51. “Structural approaches for controlling magnetism and metal-insulator transitions in oxide heterostructures”, S. J. May, University of Florida, Physics Department seminar, March 26, 2018.

50. “Magnetism and electronic phase transitions in isovalent manganite and ferrate superlattices”, S. J. May, American Physical Society March meeting, Los Angeles, CA, March 5-9, 2018.

49. "Ferrate heterostructures: From metal-insulator transitions to ionic functionality", S. J. May, Rutgers University, Institute for Advanced Materials, Devices, and Nanotechnology seminar, February 1, 2018.

48. "Anion-based approaches to engineering functionality in perovskite oxide heterostructures", S. J. May, Carnegie Mellon University, Materials Science and Engineering seminar, October 27, 2017.

47. "Synthesis strategies for controlling the in-phase octahedral rotation axis in *Pbnm*-type perovskites", S. J. May, 21st American Conference on Crystal Growth and Epitaxy, Santa Fe, NM, July 31 – August 4, 2017.

46. "Tailoring properties in ferrite perovskite heterostructures", S. J. May, Telluride Workshop on Competing Interactions and Colossal Responses in Transition Metal Compounds, Telluride, CO, June 26-30, 2017.

45. "Anion-based approaches to engineering functionality in perovskite oxide heterostructures", S. J. May, Brookhaven National Laboratory, Condensed Matter Physics and Materials Science seminar, January 26, 2017.

44. "Synthesis of polar oxide superlattices from centrosymmetric constituent layers", American Ceramic Society Electronic Materials and Applications, Orlando, FL, January 18-20, 2017.

43. "Controlling ferroic ordering in complex oxide heterostructures", S. J. May, Ordering Phenomena in Functional Complex Oxides workshop at the ALS User Meeting, Berkeley, CA, October 4-5, 2016.

42. "Scattering approaches for characterizing octahedral rotations and their physical effects in oxide heterostructures", S. J. May, International Surface X-ray and Neutron Scattering Conference, Stony Brook, NY, July 10-14, 2016.

41. "Structural approaches for controlling magnetism at complex oxide interfaces", S. J. May, Nanophases in Functional Materials workshop at the ALS User Meeting, Berkeley, CA, October 6-7, 2015.

40. "Structural approaches for altering electronic and magnetic properties at manganite interfaces", S. J. May, Telluride Workshop on Competing Interactions and Colossal Responses in Transition Metal Compounds, Telluride, CO, June 8-12, 2015.

39. "Engineering anion positions and compositions in perovskite oxide heterostructures", S. J. May, International Conference on Electroceramics, State College, PA, May 13 – 16, 2015.

38. "Emergent magnetism enabled by interfaces", S. J. May, DoE Workshop on Static and Dynamic Interfacial Effects in Magnetism, Washington DC, April 13-15, 2015.

37. "The search for perovskite oxides with electronic phase transitions above room temperature" S. J. May, Workshop on Compound Semiconductor Materials and Devices, Isle of Palms, SC, February 16-19, 2015.

36. "Electronic and optical properties of epitaxial $La_{1-x}Sr_xFeO_3$ and $La_{1-x}Eu_xFeO_3$ films" S. J. May, American Ceramic Society Electronic Materials and Applications, Orlando, FL, January 21-23, 2015.

35. "Complex oxide films: Enabling scientific insights for applications in energy and electronics" S. J. May, ASM Liberty Bell Chapter meeting, Philadelphia, PA, November 20, 2014.

34. "Functional properties of iron-based complex oxide heterostructures" S. J. May, Yale University, Department of Mechanical Engineering and Materials Science, November 5, 2014.

33. "Complex oxide films: Enabling scientific insights for applications in energy and electronics" S. J. May, Temple University, Department of Mechanical Engineering, October 24, 2014.

32. "Anion-based approaches to tunable functionality in perovskite films and superlattices" S. J. May, 21st International Workshop on Oxide Electronics, Bolton Landing, NY, September 28-October 1, 2014.

31. "Anion-based approaches to engineering functionality in perovskite oxide heterostructures" S. J. May, University of Pennsylvania, Department of Materials Science and Engineering, September 11, 2014.

30. "Anion-based approaches to engineering functionality in perovskite oxide heterostructures" S. J. May, Rutgers University, April 29, 2014.

29. "Anion-based approaches to engineering functionality in perovskite oxide heterostructures" S. J. May, North Carolina State University, March 28, 2014.

28. "Anion-based approaches to tunable functionality in oxide heterostructures" S. J. May, American Physical Society March meeting, Denver, CO, March 3-7, 2014.

27. "The effect of interfacial octahedral behavior in ferromagnetic manganite heterostructures" E. J. Moon and S. J. May, American Ceramic Society Electronic Materials and Applications, Orlando, FL, January 22-24, 2014.

26. "Novel Electronic and Magnetic Behavior in Complex Oxide Heterostructures" S. J. May, NIST CNST, Gaithersburg, MD, December 4, 2013.

25. "Functional properties of iron-based perovskite oxide heterostructures" S. J. May, Lehigh University, Bethlehem, PA, September 22, 2013.

24. "Anion-based approaches to tunable functionality in oxide heterostructures" S. J. May, Penn State University, University Park, PA, September 12, 2013.

23. "Functional properties of iron-based perovskite oxide heterostructures" S. J. May, University of Minnesota, Minneapolis, MN, September 10, 2013.

22. "Octahedral control of electronic properties in semiconducting perovskites" S. J. May, International Conference & Exhibition on Advanced & Nano Materials, Quebec City, Canada, August 13-14, 2013.

21. "Anion-based approaches to tunable functionality in oxide heterostructures" S. J. May, Telluride Workshop on Competing Interactions and Colossal Responses in Transition Metal Compounds, Telluride, CO, July 15-19, 2013.

20. "Anion-based approaches to tunable functionality in oxide heterostructures" S. J. May, Pacific Northwest National Laboratory, Richland, WA, May 1, 2013.

19. "Control of octahedral connectivity in oxide heterostructures" S. J. May, Materials Research Society fall meeting, Boston, MA, November 26 – 30, 2012.

18. "An atomic structure based approach to realizing novel properties in oxide heterostructures" S. J. May, Rutgers University, September 6, 2012.

17. “Measuring and controlling octahedral behavior in oxide heterostructures.” S. J. May, Complex Oxide Heterostructure Workshop at Harvard University, Cambridge, MA, August 8-9, 2012.

16. “Measuring octahedral behavior in complex oxide heterostructures.” S. J. May, workshop on Future Directions for Emergent Discoveries at Oxide Interfaces by Design, Newport, RI, July 9-10, 2012.

15. “Oxide interfaces: Emerging routes to enhanced material functionality” S. J. May, Villanova University, Physics Department Colloquium, September 26, 2011.

14. “The effect of strain and superlattice formation on octahedral behavior in perovskite heterostructures” S. J. May, Villa Conference on Complex Oxide Heterostructures, Las Vegas, NV, April 21 – 24, 2011.

13. “Approaches for stabilizing novel properties in perovskite oxide heterostructures” S. J. May, Temple University, Physics Department Colloquium, February 7, 2011.

12. “Quantifying octahedral rotations in strained perovskite films” S. J. May, J.-W. Kim, J. M. Rondinelli, E. Karapetrova, N. A. Spaldin, A. Bhattacharya, and P. J. Ryan, SPIE Photonics West conference, San Francisco, CA, January 22 – 27, 2011.

11. “Octahedral behavior in oxide heterostructures and implications for electronic properties” S. J. May, Novel Electronic Devices Based on Coupled Phase Transitions Workshop, Arlington, VA, January 5 – 6, 2011.

10. “Local stoichiometry and structure in oxide films: Implications for interfacial magnetism” S. J. May, Analysis and Control of Defects in Complex Oxides workshop, Argonne, IL, July 27-28, 2010.

9. “Scattering studies of magnetism and atomic structure in complex oxide superlattices” S. J. May, S. G. E. te Velthuis, P. J. Ryan, J.-W. Kim, T. S. Santos, M. R. Fitzsimmons, J. L. Robertson, J. L. Zarestky, S. D. Bader, and A. Bhattacharya, American Conference on Neutron Scattering, Ottawa, ON, Canada, June 26 – 30, 2010.

8. “Magnetic properties of manganite superlattices” S. J. May, A. B. Shah, S. G. E. te Velthuis, M. R. Fitzsimmons, P. J. Ryan, J. L. Robertson, J.-W. Kim, T. S. Santos, J. M. Zuo, J. N. Eckstein, S. D. Bader, and A. Bhattacharya, Magnetism and Magnetic Materials/Intermag conference, Washington, DC, Jan. 19 – 22, 2010.

7. “Probing interfacial ferromagnetism in manganite superlattices” S. J. May, LANSCE User Group meeting, Sante Fe, NM, Sept. 30 – Oct. 1, 2009.

6. “Magnetic and structural competing interactions in complex oxide films and superlattices” S. J. May, Telluride Workshop on Competing Interactions and Colossal Responses in Transition Metal Compounds, Telluride, CO, Aug. 10 – 14, 2009.

5. “Quantifying interfacial ferromagnetism in manganite superlattices” S. J. May, Lujan Neutron Scattering Center, Los Alamos, NM, Feb. 11, 2009.

4. “New strategies for materials discovery in complex oxides” S. J. May, Physics Department, Rowan University, Feb. 12, 2010; Department of Materials Science and Engineering, Penn State University, Feb. 5, 2009; Department of Materials Science and Engineering, Drexel University, Jan 8, 2009.

3. "Neutron scattering studies of magnetic order in complex oxide superlattices" S. J. May, NIST Center for Neutron Research Seminar, Gaithersburg, MD, Dec. 9, 2008.

2. "Polarized neutron reflectometry studies of interfacial ferromagnetism in complex oxide superlattices" S. J. May, S. G. E. te Velthuis, A. B. Shah, M. R. Fitzsimmons, J. M. Zuo, J. N. Eckstein, S. D. Bader, and A. Bhattacharya. International Workshop on Polarized Neutrons in Condensed Matter Investigations, Tokai, Japan, Sept. 1 – 5, 2008.

1. "Exploring magnetic ordering in ($LaMnO_3$)/($SrMnO_3$) superlattices" S. J. May, Advanced Photon Source's monthly user seminar, Argonne, IL, April 18, 2008.

CONTRIBUTED PRESENTATIONS (AS PRESENTER)**:**

24. "Voltage control of patterned materials in laterals $SrFeO_{3-d}$/$SrFeO_2F$ heterostructures via ionic gating" B. M. Lefler, W. M. Postiglione, C. Leighton, S. J. May, APS March Meeting, Las Vegas, NV, March 6-10, 2023.

23. "Depth-resolved modulation of metal-oxygen hybridization and orbital polarization across isovalent oxide interfaces", P. C. Rogge, P. Shafer, G. Fabbris, W. Hu, E. Arenholz, E. Karapetrova, M. P. M. Dean, R. J. Green, and S. J. May, International Workshop on Oxide Electronics, Kyoto, Japan, Sept. 30 – Oct. 2, 2019.

22. "Engineering magnetoresistance in (001)- and (111)-oriented $(La_{2/3}Sr_{1/3}MnO_3)_n$/$(LaFeO_3)_{10}$ superlattices through interfacial coupling", Y. Zhou and S. J. May, Joint MMM-Intermag Conference, Washington, DC, January 14 – 18, 2019.

21. "Helical magnetic ordering in epitaxial $SrFeO_3$ and $CaFeO_3$ heterostructures", P. C. Rogge, R. J. Green, and S. J. May, International Conference on Magnetism, San Francisco, CA, July 16-20, 2018.

20. "Polar brownmillerite superlattices comprised of centrosymmetric constituent layers" S. J. May, New Horizons in Photovoltaics Conference, Philadelphia, PA, August 31 – September 1, 2017.

19. "Electronic and magnetic properties of epitaxial $Ca_{1-x}Sr_xMn_7O_{12}$ films" Amanda Huon, Alex Grutter, Brian Kirby, and Steven J. May. Spring 2016 Materials Research Society Conference, Phoenix, AZ, March 28 – April 1, 2016.

18. "Understanding the Static and Dynamic Optical Properties of Epitaxial $LaFeO_3$" Mark D. Scafetta, Sergey Y. Smolin, Adam Cordi, Glenn W. Guglietta, James M. Rondinelli, Jason B. Baxter, and Steven J. May. 21st International Workshop on Oxide Electronics, Bolton Landing, NY, September 28-October 1, 2014.

17. "The effect of growth conditions on the optical and electronic properties of $La_{1-x}Sr_xFeO_3$" R. J. Sichel-Tissot, M. D. Scafetta, and S. J. May, North American Molecular Beam Epitaxy Conference, Atlanta, GA, October 15 – 17, 2012.

16. "Experimental studies of octahedral rotations in perovskite oxide heterostructures" S. J. May, C. R. Smith, J.-W. Kim, E. Karapetrova, A. Bhattacharya, and P. J. Ryan, Aspen Physics Conference on Low-Dimensional Electronic Materials, Aspen, CO, February 6 – 10, 2012.

15. "Quantifying oxygen octahedral rotations in strained perovskite films" S. J. May, J.-W. Kim, J. M. Rondinelli, E. Karapetrova, N. A. Spaldin, A. Bhattacharya, and P. J. Ryan, U.S. Navy Workshop on Acoustic Transduction Materials and Devices, State College, PA, May 11-13, 2010.

14. "Measurement of oxygen octahedral rotations in strained perovskite films" S. J. May, J.-W. Kim, J. M. Rondinelli, E. Karapetrova, N. A. Spaldin, A. Bhattacharya, and P. J. Ryan, Spring 2010 Materials Research Society Conference, San Francisco, CA, April 5-9, 2010.

13. "Determining oxygen octahedral rotations in strained perovskite films using x-ray diffraction" S. J. May, J.-W. Kim, J. M. Rondinelli, E. Karapetrova, N. A. Spaldin, A. Bhattacharya, and P. J. Ryan, American Physical Society meeting, Portland, OR, March 15-19, 2010.

12. "The onset of metallic behavior in strained $(LaNiO_3)_n/(SrMnO_3)_2$ superlattices" S. J. May, T. S. Santos, and A. Bhattacharya. American Physical Society March meeting, Pittsburgh, PA, March 16 – 20, 2009.

11. "Enhanced ordering temperatures in antiferromagnetic $(LaMnO_3)_m/(SrMnO_3)_{2m}$ superlattices" S. J. May, J. L. Robertson, P. J. Ryan, T. S. Santos, S. G. E. te Velthuis, J.-W. Kim, J. N. Eckstein, S. D. Bader, and A. Bhattacharya. Magnetism and Magnetic Materials Conference, Austin, TX, Nov. 11 – 14, 2008.

10. "Neutron diffraction study of antiferromagnetic ordering in $(LaMnO_3)_m/(SrMnO_3)_{2m}$ superlattices" S. J. May, J. L. Robertson, S. G. E. te Velthuis, J. L. Zarestky, T. S. Santos, M. R. Fitzsimmons, S. D. Bader, J. N. Eckstein, and A. Bhattacharya. American Conference on Neutron Scattering, Santa Fe, NM, May 11 – 14, 2008.

9. "Interfacial ferromagnetism in manganite superlattices revealed by polarized neutron reflectometry" S. J. May, S. G. E. te Velthuis, A. B. Shah, M. R. Fitzsimmons, J. M. Zuo, J. N. Eckstein, S. D. Bader, and A. Bhattacharya. American Conference on Neutron Scattering, Santa Fe, NM, May 11 – 14, 2008.

8. "Asymmetric and modulated magnetic profiles in $(LaMnO_3)_{2n}/(SrMnO_3)_n$ superlattices" S. J. May, S. G. E. te Velthuis, M. R. Fitzsimmons, A. B. Shah, J. M. Zuo, X. Zhai, J. N. Eckstein, S. D. Bader, and A. Bhattacharya. American Physical Society March meeting, New Orleans, LA. March 10 – 14, 2008.

7. "Complex nanoscale magnetic order in manganite superlattices." S. J. May, S. G. E. te Velthuis, X. Zhai, M. R. Fitzsimmons, J. N. Eckstein, S. D. Bader, and A. Bhattacharya. Fall 2007 Materials Research Society Conference, Boston, MA. Nov. 26 - 30, 2007.

6. "InMnAs/InAs heterojunctions for high-field magnetic sensors." S. J. May and B. W. Wessels. 2006 Device Research Conference, State College, PA. June 26 – 28, 2006.
   - Winner of Best Student Paper award

5. "High field negative magnetoresistance in Ni/oxide/InMnAs tunnel junctions." S. J. May, P. J. Phillips, and B. W. Wessels. Spring 2006 Materials Research Society Conference, San Francisco, CA. April 17 – 21, 2006.

4. "Magnetoresistance in *p*-(In,Mn)As/*n*-InAs junctions." S. J. May and B. W. Wessels. 2005 AVS Prairie Chapter Regional Meeting, Evanston, IL. June 13, 2005.

3. "Electronic and magnetotransport properties of ferromagnetic *p*-(In,Mn)As/*n*-InAs heterojunctions." S. J. May and B. W. Wessels. Physics and Chemistry of Semiconductor Interfaces Conference, Bozeman, MT. Jan. 23-27, 2005.

2. "Electronic and magnetic properties of *p*-(In,Mn)As/*n*-InAs heterojunctions." S. J. May and B. W. Wessels. 2004 Device Research Conference, Notre Dame, IN. June 21 – 23, 2004.

1. "Electronic properties of epitaxial (In,Mn)As." S. J. May, A. J. Blattner, and B. W. Wessels. 2003 Electronic Materials Conference, Salt Lake City, UT. June 25 – 27, 2003.

PATENTS:

1. "Group III-V ferromagnetic/non-magnetic semiconductor heterojunctions and magnetodiodes," B. W. Wessels and S. J. May. Patent Number US 10,209,323 B2.

SERVICE:

Member of User Facility Committees:

- Beamtime Allocation Committee for the NIST Center for Neutron Research (2010-2019),
- Lujan Center Materials Program Advisory Committee for the Lujan Neutron Scattering Center (2011-2014)
- Center for Nanoscale Materials Users Executive Committee (2011-2015; chair 2013-2014),
- ORNL Neutron Sciences Science Review Committee for Single Crystal Diffraction (2016-2022)
- Advanced Photon Source (APS) Scattering-Condensed Matter Proposal Review Panel (2014-2018; chair 11/2015-03/2018).

Scientific Society Committees

- Secretary/Treasurer of the Executive Committee of the Division of Materials Physics within the American Physical Society (3/2020 – 3/2023).

Conference and Workshop Organization:

- Co-organized ARO-sponsored workshop, "Future Directions for Emergent Discoveries at Oxide Interfaces by Design," in Newport, RI, July 9-10, 2012.
- Co-organized and chaired an all-invited symposium (*Harnessing local atomic structure to control magnetic interactions in complex oxides*) at the 2012 American Physical Society March meeting.
- Organized CNM Plenary Session at 2013 Argonne Users Meeting.
- Co-organized Focus Topic Session at 2015 American Physical Society March meeting: "Magnetic Oxide Thin Films and Heterostructures".
- Co-organized Focus Topic Session at 2017 American Physical Society March meeting: "Magnetic Oxide Thin Films and Heterostructures".
- Member of the program committee for the 2010, 2013, 2014, and 2017 Magnetism and Magnetic Materials conferences.
- Co-organizer of the 2017 International Workshop on Oxide Electronics held September 24-27, 2017, in Chicago, IL.
- Served as a Topic Co-chair for 2018 International Conference on Magnetism.
- Served as Program Co-chair for the 2019 Joint MMM-Intermag conference.
- Member of the program committee for the Intermag 2021 conference.
- Co-organizer of "Advances in Design, Synthesis, and Characterization of Functional Heteroanionic Materials" symposium for 2022 Spring MRS conference.

Invited Workshop Participant:

- Subcommittee chair for the "Nanostructured Hard Materials" breakout group at the Neutron Measurements for Materials Design & Characterization workshop sponsored by the NIST Center for Neutron Research (Aug. 21 – 22, 2014 in Potomac, MD).
- Invited participant in the APS Upgrade Workshop on Condensed Matter Physics, May 20-21, 2015 at Argonne National Laboratory.
- Invited participant in the Second Target Station Workshop at Oak Ridge National Laboratory, October 28-29, 2015.
- Invited participant in the Department of Energy BES workshop on Basic Research Needs for Quantum Materials for Energy Relevant Technology at Gaithersburg, MD, February 8 – 10, 2016.
- Invited participant in the Materials with Long-Range Order workshop, sponsored by the National Science Foundation, part of their "Materials Laboratories of the Future" workshop series, online, November 16 – 17, 2022.
- Invited participant in the "Neutrons for the Future" workshop, sponsored by NIST, Rockville, MD, October 18 – 20, 2023.

Conference Sessions Chaired:

- *Transport in CMR oxides* at the 2008 Magnetism and Magnetic Materials conference.
- *Multiferroics: Thin films and composites*; *Multiferroics: Thin films and tunnel junctions* at the 2010 Magnetism and Magnetic Materials conference.
- *Titanate Heterostructures* at the 2012 MRS Fall conference.
- *Manganite Heterostructures* at the 2013 APS March meeting.
- *CNM Plenary Session* at the 2013 Argonne Users meeting.
- *CNM Plenary Session* at the 2014 Argonne Users meeting.
- *Advances in Complex Oxide Film Growth* at the 2016 APS March meeting.
- *Interfaces in Oxide Heterostructures* at the 2016 MRS Spring conference.
- *Manganite Films* at the 2017 APS March meeting.
- *Emergent Magnetism at Oxide Interfaces* at the 2017 APS March meeting.
- *Session 7* at the 2017 Symposium on Epitaxy of Complex Oxides (ACCGE-21).
- *Topology and Ferroics* at the 2017 International Workshop on Oxide Electronics.
- *Emerging Phenomena in Van Der Waals Magnets* at the 2018 International Conference on Magnetism.
- *Forefront Issues and New Opportunities in Magnetic Materials* at the 2019 Joint MMM-Intermag Conference.
- *Freestanding Crystalline Oxide Membranes* at the 2019 International Conference on Crystal Growth and Epitaxy.
- *Chemistry-Processing-Properties Relationships* at the 2020 MXene Conference.
- *Heteroanionic Thin Films* and *Optical Properties of Heteroanionic Materials* at the 2022 MRS Spring conference.
- *Quantum Materials* at the 2022 International Workshop on Oxide Electronics.

Reviews user proposals for the Spallation Neutron Source and High Flux Isotope Reactor at Oak Ridge National Laboratory (2009-2022), the NIST Center for Neutron Research (2010-2019), the Center for Nanoscale Materials at Argonne (2010-2021), the Advanced Light Source at Lawrence Berkeley National Laboratory (2021-present), the Lujan Neutron Scattering Center at Los Alamos National Laboratory (2011-2014), the Center for Nanophase Materials Sciences at Oak Ridge

National Laboratory (2013-2022), and the 2DCC-Materials Innovation Platform at Penn State (2018-present).

Reviewed funding proposals for the Department of Energy, National Science Foundation (DMR, CBET, CMMI, MRI), the Army Research Office, Air Force Office of Scientific Research, Petroleum Research Fund, Swiss National Science Foundation, Kentucky Science and Engineering Foundation, University of Missouri Research Board, Deutsche Forschungsgemeinschaft, Austrian Science Fund, the US-Israel Binational Science Foundation, and the National Science Center Poland.

Refereed manuscripts for *Physical Review Letters*, *Nature Materials, Nature Communications*, *Science Advances, Physical Review X*, *Physical Review B*, *Physical Review Materials*, *ACS Nano, Nano Letters, Chemistry of Materials, PNAS, Advanced Materials*, *Advanced Functional Materials*, *Advanced Energy Materials*, *Advanced Materials Interfaces, Applied Physics Letters*, *Journal of Applied Physics*, *APL Materials, Crystal Growth & Design, ACS Applied Materials & Interfaces, ACS Omega, Journal of Physics: Condensed Matter, Journal of Vacuum Science and Technology B*, *Scientific Reports, Nature Asia Materials*, *Journal of Magnetism and Magnetic Materials, MRS Communications, Journal of Materials Research, Materials Science and Engineering B, Journal of Electronic Materials, Thin Solid Films, Journal of Crystal Growth, IEEE Transactions on Magnetics, New Journal of Physics, Materials Chemistry and Physics, Journal of the Electrochemical Society, Materials Research Letters, Catalysts, Semiconductor Science and Technology, the European Journal of Inorganic Chemistry*, and *Vacuum*.

Gave tutorial at 2016 Spring MRS conference: "Oxide Molecular Beam Epitaxy and Interfacial Design of Oxide Heterostructures."

Department Head at Drexel (2020-2025). Assistant Department Head at Drexel (2017-2020). Departmental graduate advisor at Drexel (2015-2020). Chair of graduate admissions committee at Drexel (2011-2015). Faculty advisor for student chapter of MRS (2015-). Faculty advisor for undergraduate MSE student organization (Material Advantage) at Drexel (2010-2016).

Kleckner Scientist in Residence at Springside Chestnut Hill Academy high school (May 2014).

HONORS/AWARDS:

Fellow of the American Physical Society 2023

APS Outstanding Referee 2021

Awarded by the American Physical Society to recognize scientists who have been exceptionally helpful in assessing manuscripts for publication in the APS journals.

Outstanding Teaching Award 2020

Awarded by the Materials Science and Engineering Department at Drexel University.

Outstanding Service Award 2017

Awarded by the Materials Science and Engineering Department at Drexel University.

Provost's Award for Outstanding Early Career Scholarly Productivity 2017

New Journal of Physics Outstanding Reviewer (IOP Publishing) 2016

Bradley Stoughton Award for Young Teachers 2015

Awarded by ASM International for outstanding teaching/mentoring in materials science and engineering to an individual under the age of 35.

Ross Coffin Purdy Award 2014

Awarded by the American Ceramic Society for the most valuable contribution to ceramic technical literature in 2012.

Outstanding Service Award 2013
Awarded by the Materials Science and Engineering Department at Drexel University.

ARO Young Investigator Award 2012

NSF CAREER Award (DMR-Ceramics) 2012

Outstanding Research Award 2011
Awarded by the Materials Science and Engineering Department at Drexel University.

Outstanding Teaching Award 2010
Awarded by the Materials Science and Engineering Department at Drexel University.

Peter Salamon Award for Young Scientists 2009
Awarded by the Telluride Science Research Center.

Best Student Paper 2006
Awarded by the 2006 IEEE Device Research Conference.

Richter Fellowship 9/05 – 6/06
Awarded by the McCormick School of Engineering and Applied Science to students in the final years of dissertation work.

Young Scientist Award 2005
Awarded to top graduate students presenting at the Physics and Chemistry of Semiconductor Interfaces Conference.

Royal E. Cabell Fellowship 9/02 – 6/03
Awarded by the McCormick School of Engineering and Applied Science to the top engineering applicants for graduate study.

Walter P. Murphy Fellowship 9/02 – 6/03
Awarded by Northwestern University's department of Materials Science and Engineering to outstanding graduate applicants.

Graduate and Postdoctoral Advisors:

Anand Bhattacharya (Argonne National Laboratory)
Bruce W. Wessels (Northwestern University)

Graduate Students Currently Advising: Tessa Tucker (PhD student; BS West Chester Univ); Kriti Panchal (PhD student, BS/MS Indian Institute of Science Education and Research, Bhopal); Alexander Velič (PhD student, BS/MS Brno University of Technology, Czech Republic).

Previous advisees:
REU/RET participants: Neeraj Khosla (Lehigh University, REU 2011), Joy Kots (Father Judge High School, RET 2011), Alex Dagg (UC-Riverside, REU 2012), Anna Li (UC Berkeley, REU 2023), Gabriela Marrero Hernandez (Univ Puerto Rico, REU 2023).

BS thesis students: Jared Gdanski (2020, BS in physics; pursuing PhD at Ohio State).

MS students: Erwin Fernandez (MESC program, 2012; Vecor Labs), Robert Devlin (2013; CEO and co-founder of Metalenz), Yujun Xie (2014; professor at Shanghai Jiao Tong Univ.), James Devine (2015; SRI International), Andrew Cieri (2016; Evaporated Coatings, Inc.), Wren Gordon (2017; Corning, Inc.), Yizhou Yang (2018; Intel Corp.), Yuchen Hou (2018; Lam Research), Zizhao Chen (2018; pursuing PhD at Texas A&M), Cosmin Popescu (2020; pursuing PhD at MIT), Zongmin

Yang (2023), Andrew Mirea (2025, pursuing PhD at Drexel), Tarush Tandon (2025, pursuing PhD at Drexel).

PhD students:
Cole Smith (01/2010 – 12/2014; now Senior Process Engineer at imec)
Mark Scafetta (09/2010 – 06/2015; now Physical Scientist at Air Force Technical Applications Center)
Amber Choquette (09/2012 – 06/2017; now R&D Thin Films, Process Development Engineer at Micron Technology, Inc)
Alex Krick (09/2012 – 06/2017; now Principal Materials Scientist at Northrop Grumman)
Amanda Huon (09/2013 – 01/2019; now Assistant Professor of Physics at University of the Sciences, Philadelphia, PA)
Jiayi Wang (09/2015 – 06/2020; now Assistant Professor at Institute of Microelectronics, Chinese Academy of Sciences, Beijing)
Benjamin Lefler (01/2017 – 06/2022; now Staff Research Scientist at Wolfspeed)
Yizhou Yang (04/2018 – 06/2022; now Device Development Engineer at Intel Corp)
Prajwal Laxmeesha (01/2021 – 06/2025; now Staff Engineer at Western Digital)

Postdoctoral Researchers/Staff Scientists:
Rebecca Sichel-Tissot (06/2011 – 02/2014; now Principal Failure Analysis Engineer at Polar Semiconductor)
Eun Ju Moon (06/2012 – 08/2016; now Instrumentation Scientist at SUNY Buffalo)
Paul Rogge (09/2016 – 02/2020; now Engineer at the IRS)
David Ferron Bugallo (01/2022 – 10/2023; now Research Chemist at Decotek Automotive, Ireland)
Rajesh Dutta (11/2023 -)

HONORS/AWARDS RECEIVED BY ADVISEES:

Prajwal Laxmeesha	Carleone Fellowship (Drexel University)	2024
Benjamin Lefler	Patrick Dewar PhD Fellowship (Drexel University)	2019
Amanda Huon	GMAG student travel award	2017
Amanda Huon	DoE SCGSR fellowship	2016
Alex Krick	3rd prize, poster competition, Physical Electronics Conference	2015
Alex Krick	Koerner Award (Drexel University)	2015
Amber Choquette	Koerner Award (Drexel University)	2015
Yujun Xie	Outstanding Masters Student in Mathematical Sciences and Engineering, Drexel University	2014
Cole Smith	Young Member Award, ASM Delaware Valley chapter	2014
Cole Smith	Koerner Award (Drexel University)	2014
Robert Devlin	NSF-GRFP Honorable Mention	2013, 2014
Cole Smith	First Place ASM Chapter C.F. Burns Poster Contest	2013
Mark Scafetta	Koerner Award (Drexel University)	2013