

Lane W. Martin

Associate Professor, Materials Science and Engineering, University of California, Berkeley and
Faculty Scientist, Materials Sciences Division, Lawrence Berkeley National Laboratory

PROFESSIONAL PREPARATION

Carnegie Mellon University	B.S., Materials Science and Engineering	2003
University of California, Berkeley	M.S., Materials Science and Engineering	2006
University of California, Berkeley	Ph.D., Materials Science and Engineering	2008
Lawrence Berkeley National Lab.	Postdoctoral Fellow, Materials Sciences Division	2008-09

APPOINTMENTS

2014-	Associate Professor of Materials Science and Engineering, University of California, Berkeley and Faculty Scientist, Materials Sciences Division, Lawrence Berkeley National Laboratory
2009-2014	Assistant Professor of Materials Science and Engineering and Faculty Affiliate of the Materials Research Laboratory, University of Illinois, Urbana-Champaign
2008-2009	Postdoctoral Fellow, Quantum Materials Group, Materials Science Division, Lawrence Berkeley National Laboratory
2004-2008	NSF IGERT Fellow in Nanoscience and Engineering and Intel Robert Noyce Fellow in Microelectronics, Graduate Researcher, Department of Materials Science and Engineering, University of California, Berkeley

HONORS AND AWARDS

1. 2017 Excellence in Laboratory Safety Grand Prize, UC Berkeley Environmental, Health, and Safety (EHS) (Feb. 2018)
2. Robert L. Coble Award for Young Scholars, American Ceramic Society (Oct. 2016)
3. American Association for Crystal Growth (AACG) Young Author Award (Aug. 2015)
4. Presidential Early Career Award for Scientists and Engineers, President of the United States of America (Dec. 2013)
5. Dean's Award for Excellence in Research, College of Engineering, University of Illinois (Feb. 2013)
6. National Science Foundation CAREER Award (Aug. 2012)
7. Army Research Office Young Investigator Program (YIP) Award Winner (Oct. 2010)
8. Intel Robert Noyce Fellow in Microelectronics (2007–2008)
9. National Science Foundation IGERT Fellow in Nanoscience and Engineering (2004–2007)
10. Sapphire Award Winner, Graduate Excellence in Materials Science (GEMS), Materials Science and Technology Meeting (2006)
11. Berkeley Summer Institute for Preparing Future Faculty - Institute Fellow (Summer 2008)
12. Gold Medal Award Winner, Materials Research Society Graduate Student Award (2006)
13. William T. Lankford Jr. Memorial Scholarship (May 2004, Carnegie Mellon University)

PUBLICATIONS [h-index = 49; ~11,880 citations]

1. X. Lu, Z. Chen, Y. Cao, Y. Tang, R. Xu, S. Saremi, Z. Zhang, Y. Dong, S. Das, H. Zhang, L. Zheng, W. Lu, J. Li, L. Chen, H. Li, W. Cao, **L. W. Martin**, Non-local domain switching in ferroelectric thin films. in preparation Apr. 2018.
2. R. Gao, S. Pandya, Y. Dong, H. Zhao, A. Luo, L. R. Dedon, V. Thoreton, R. Xu, S. Saremi, T. Chen, A. Jain, T. Ishihara, D. R. Trinkle, N. H. Perry, **L. W. Martin**, Structural considerations in designing high-ionic-conducting perovskites. in preparation Apr. 2018.
3. S. Pandya, G. A. Velarde, R. Gao, A. Everhardt, R. Xu, J. T. Maher, J. C. Agar, **L. W. Martin**, Understanding the role of ferroelastic domains on the pyroelectric and electrocaloric effects in ferroelectric thin films. Adv. Mater. in preparation Apr. 2018.
4. J. Kim, Y. Qi, A. R. Damodaran, R. Gao, H. Takenaka, S. Pandya, M. R. McCarter, A. M. Rappe, **L. W. Martin**, Strain-dependent domain and property evolution in a relaxor ferroelectric. Phys. Rev. Lett. in preparation Apr. 2018.
5. S. Shetty, A. R. Damodaran, K. Wang, Y. Yuan, V. Gopalan, **L. W. Martin**, S. Trolier-McKinstry, Digital relaxor: exploring the origin of relaxor behavior in engineered lead magnesium niobate ($\text{PbMg}_{1/3}\text{Nb}_{2/3}\text{O}_3$) thin films. Phys. Rev. Mater. in preparation Apr. 2018.

6. S. Saremi, R. Xu, F. Allen, J. Maher, J. C. Agar, P. Hosemann, **L. W. Martin**, Local control of properties and on-demand tuning of functionalities in ferroelectric thin films via nanoscale defect engineering. *Adv. Mater.* under review Apr. 2018.
7. A. Dasgupta, S. Saremi, R. Xu, L. R. Dedon, S. Pandya, A. R. Damodaran, **L. W. Martin**, Nonstoichiometry, structure, and properties in $Ba_{1-x}TiO_{3-y}$ thin films. *J. Mater. Chem. C* under review Apr. 2018.
8. T. Angsten, **L. W. Martin**, M. Asta, Electronic and polar properties of vanadate compounds stabilized by epitaxial strain. *Chem. Mater.* under review Apr. 2018.
9. A. V. Ilevlev, C. Brown, J. C. Agar, G. A. Velarde, **L. W. Martin**, P. Maksymovych, S. V. Kalinin, O. S. Ovchinnikova, Non-trivial cation dynamics during polarization switching in ferroelectrics. *Nature Nanotechnol.* submitted Apr. 2018.
10. S. Zhang, H. Y. Xiao, S. M. Peng, G. X. Yang, Z. J. Liu, X. T. Zu, S. Li, D. J. Singh, **L. W. Martin**, L. Qiao, Band-gap reduction in $(BiCrO_3)_m/(BiFeO_3)_n$ Superlattices: Designing new low-band-gap ferroelectrics. *Phys. Rev. Appl.* under review Apr. 2018.
11. J. S. Lim, J. H. Lee, R. Gao, T. Y. Koo, **L. W. Martin**, R. Ramesh, C.-H. Yang, Visualization of collective oxygen-vacancy flow in a crystalline solid. *Proc. Nat. Acad. Sci.* under review Apr. 2018.
12. Z. Chen, Z. Chen, C.-Y. Kuo, J. Liu, L. R. Dedon, D. Chen, J. Clarkson, R. O. Cherifi, E. Arenholz, Y.-H. Chu, Z. Hu, L.-H. Tjeng, L.-W. Wang, **L. W. Martin**, Strain control of antiferromagnetic anisotropy in multiferroic $BiFeO_3$ thin films. *Nature Commun.* under review Apr. 2018.
13. **L. W. Martin**, A. M. Rappe, Functional ceramic materials. *J. Phys. D.* under review Apr. 2018. [Invited perspective, 2018 Road Map]
14. K. X. Nguyen, Y. Jiang, M. C. Cao, P. Purohit, A. K. Yadav, P. García-Fernández, Z. Hong, M. W. Tate, C. S. Chang, P. Aguado-Puente, J. Iñiguez, L.-Q. Chen, S. M. Gruner, J. Junquera, **L. W. Martin**, R. Ramesh, D. A. Muller, Orbital angular momentum and torque transfer to an electron beam from polarization vortices. *Nature* under review Apr. 2018.
15. J. Xiao, H. Zhu, Y. Wang, W. Fang, Y. Hu, A. Dasgupta, Y. Han, Y. Wang, D. A. Muller, **L. W. Martin**, P. A. Hu, X. Zhang, Dipole locking in intrinsic two-dimensional ferroelectricity. *Nature Commun.* under review Apr. 2018.
16. Z. Gu, S. Pandya, A. Samanta, A. R. Damodaran, C. J. G. Meyers, G. Xiao, S. Liu, A. Dasguta, S. Saremi, L. Wu, A. Podpirka, A. Will-Cole, C. J. Hawley, P. K. Davies, R. A. York, I. Grinberg, **L. W. Martin**, J. E. Spanier, Superdomain-engineered dielectric meta-materials. *Nature* under review Apr. 2018.
17. R. Xu, S. Liu, S. Saremi, R. Gao, H. Lu, J. J. Wang, Z. J. Hong, A. Ghosh, S. Pandya, E. Bonturim, Z. Chen, L.-Q. Chen, A. M. Rappe, **L. W. Martin**, Tunable, multi-state switching in ferroelectric thin films. *Science* under review Mar. 2018.
18. D. Meng, C. Peng, H. He, H. Zhang, F. Bai, Z. Chen, **L. W. Martin**, J. Zhai, Large spontaneous polarization in double perovskite Bi_2FeCrO_6 film with a narrow bandgap. *Appl. Phys. Lett.* under review Jan. 2018.
19. R. Xu, R. Gao, S. E. Reyes-Lillo, S. Saremi, Y. Dong, H. Lu, Z. Chen, X. Lu, Y. Qi, S.-L. Hsu, A. R. Damodaran, H. Zhou, J. B. Neaton, **L. W. Martin**, Reducing coercive-field scaling in ferroelectric thin films via orientational control. *ACS Nano* accepted Apr. 2018.
20. L. R. Dedon, Z. Chen, R. Gao, Y. Qi, E. Arenholz, **L. W. Martin**, Strain-driven phase competition near the antipolar-nonpolar phase boundary in $Bi_{0.7}La_{0.3}FeO_3$ thin films. *ACS Appl. Mater. Inter.* accepted Apr. 2018.
21. J. C. Agar, Y. Cao, B. Naul, S. Pandya, S. van der Walt, A. I. Luo, J. T. Maher, A. R. Damodaran, N. Balke, S. Jesse, S. V. Kalinin, R. K. Vasudevan, **L. W. Martin**, Machine detection of enhanced electromechanical energy conversion in $PbZr_{0.2}Ti_{0.8}O_3$ thin films. *Adv. Mater.* accepted Apr. 2018.
22. L. M. Zheng, X. R. Wang, W. M. Lu, C. J. Li, T. R. Paudel, Z. Q. Liu, Z. Huang, S. W. Zeng, K. Han, Z. H. Chen, X. Qiu, M. S. Li, S. Yang, B. Yang, M. Chisholm, **L. W. Martin**, S. Pennycook, E. Y. Tsybmal, J. M. D. Coey, W. W. Cao, Ambipolar ferromagnetism by electrostatic doping of a manganite. *Nature Commun.* accepted Mar. 2018.

23. S. Pandya, J. Wilbur, J. Kim, R. Gao, A. Dasgupta, C. Dames, **L. W. Martin**, Pyroelectric energy conversion with large energy and power density in relaxor ferroelectric thin films. *Nature Mater.* (2018), DOI: 10.1038/s41563-018-0059-8.
24. P. Shafer, P. Garcia-Fernandez, P. Aguado-Puente, A. R. Damodaran, A. J. Yadav, C. T. Nelson, S.-L. Hsu, J. C. Wojdel, J. Iniguez, **L. W. Martin**, E. Arenholz, J. Junquera, R. Ramesh, Emergent chirality in polar vortex superlattices. *Proc. Nat. Acad. Sci.* (2018), DOI: 10.1073/pnas.1711652115.
25. A. V. Ilev, C. Brown, M. J. Burch, J. C. Agar, G. A. Velarde, **L. W. Martin**, P. Maksymovych, S. V. Kalinin, O. S. Ovchinnikova, Chemical phenomena of atomic force microscopy scanning. *Anal. Chem.* **90**, 3475-3481 (2018).
26. A. V. Ilev, M. Chyashnavichyus, D. Leonard, J. C. Agar, G. A. Velarde, **L. W. Martin**, S. V. Kalinin, P. Maksymovych, O. S. Ovchinnikova, Subtractive fabrication of ferroelectric thin films with precisely controlled thickness. *Nanotechnol.* **29**, 155302 (2018).
27. S. Saremi, A. Dasgupta, R. Gao, **L. W. Martin**, New facets for the role of defects in ceramics [Invited feature, cover story]. *Am. Ceram. Soc. Bull.* **97**, 16-23 (2018).
28. S. Saremi, R. Xu, L. R. Dedon, **L. W. Martin**, Electronic transport and ferroelectric switching in ion-bombarded, defected-engineered BiFeO₃ thin films. *Adv. Mater. Inter.* **5**, 1700991 (2018).
29. A. I. Khan, M. Hoffmann, K. Chatterjee, Z. Lu, R. Xu, C. Serrao, S. Smith, **L. W. Martin**, C. C. Hu, R. Ramesh, S. Salahuddin, Differential voltage amplification induced by ferroelectric negative capacitance. *Appl. Phys. Lett.* **111**, 253501 (2017).
30. Y. Zhu, F. Chen, J. Park, K. Sasikuman, B. Hu, A. R. Damodaran, I. W. Jung, M. J. Highland, Z. Cai, I.-C. Tung, D. A. Walko, J. W. Freeland, **L. W. Martin**, S. K. R. S. Sankaranarayanan, P. G. Evans, A. M. Lindenberg, H. Wen, Structural imaging of nanoscale phonon transport in ferroelectrics excited by metamaterial-enhanced terahertz fields. *Phys. Rev. Mater.* **1**, 060601 (2017).
31. Q. Li, C. T. Nelson, S.-L. Hsu, A. R. Damodaran, A. K. Yadav, M. McCarter, **L. W. Martin**, R. Ramesh, S. V. Kalinin, Unravelling flexoelectricity in PbTiO₃/SrTiO₃ superlattice polar vortices via machine learning-informed phase-field modeling. *Nature Commun.* **8**, 1468 (2017).
32. S. Pandya, **L. W. Martin**, Epitaxy on polycrystalline substrates (Invited perspective). *Science* **358**, 587-588 (2017).
33. Z. Chen, Z. Liu, Z. Chen, M. E. Holtz, C. Li, X. R. Wang, W. Lu, L. S. Fan, L. R. Dedon, C. Federick, R. Gao, R. Xu, A. T. N'Diaye, E. Arenholz, J. A. Mundy, T. Venkatesan, D. A. Muller, L.-W. Wang, J. Liu, **L. W. Martin**, Electron accumulation and emergent magnetism in LaMnO₃/SrTiO₃ heterostructures. *Phys. Rev. Lett.* **119**, 156801 (2017).
34. A. R. Damodaran, S. Pandya, J. C. Agar, Y. Cao, R. K. Vasudevan, R. Xu, S. Saremi, Q. Li, J. Kim, M. R. McCarter, L. R. Dedon, T. Angsten, N. Balke, S. Jesse, M. Asta, S. V. Kalinin, **L. W. Martin**, Three-state ferroelectric switching and large electromechanical responses in PbTiO₃ thin films. *Adv. Mater.* **29**, 1702069 (2017).
35. A. R. Damodaran, J. Clarkson, Z. Hong, H. Liu, A. K. Yadav, C. T. Nelson, S.-L. Hsu, M. R. McCarter, K.-D. Park, V. Kravtsov, A. Farhan, Y. Dong, Z. Cai, H. Zhou, P. Aguado-Puente, P. Garcia-Fernandez, J. Iniguez, J. Junquera, A. Scholl, M. B. Raschke, L.-Q. Chen, D. D. Fong, R. Ramesh, **L. W. Martin**, Phase coexistence and electric-field control of toroidal order in oxide superlattices. *Nature Mater.* **16**, 1003-1009 (2017).
36. R. Gao, S. E. Reyes-Lillo, R. Xu, A. Dasgupta, Y. Dong, L. R. Dedon, J. Kim, S. Saremi, Z. H. Chen, C. R. Serrao, H. Zhou, J. B. Neaton, **L. W. Martin**, Ferroelectricity in Pb_{1+δ}ZrO₃ thin films. *Chem. Mater.* **29**, 6544-6551 (2017).
37. T. Angsten, **L. W. Martin**, M. Asta, Orientation-dependent properties of epitaxially strained perovskite oxide thin films: insights from first-principles calculations. *Phys. Rev. B* **95**, 174110 (2017).
38. K. T. Faber, T. Asefa, M. Backhaus-Ricoult, R. Brow, J. Y. Chan, S. Dillon, W. G. Fahrenholtz, M. W. Finnis, J. E. Garay, R. E. García, Y. Gogotsi, S. M. Haile, J. Halloran, J. Hu, L. Huang, S. D. Jacobsen, E. Lara-Curzio, J. LeBeau, W. E. Lee, C. G. Levi, I. Levin, J. A. Lewis, D. M. Lipkin, K. Lu, J. Luo, J.-P. Maria, **L. W. Martin**, S. Martin, G. Messing, A. Navrotsky, N. P. Padture, C. Randall, G. S. Rohrer, A. Rosenflanz, T. A. Schaedler, D. G. Schlom, A. Sehrioglu, A. Stevensen, T. Tani, V. Tikare, S. Trolier-McKinstry, H. Wang, B. Yildiz, The role of ceramic and glass science research in meeting

- societal challenges: report from an NSF sponsored workshop. *J. Am. Ceram. Soc.* **100**, 1777-1803 (2017).
39. A. R. Damodaran*, S. Pandya*, Y. Qi, S.-L. Hsu, S. Liu, C. T. Nelson, J. Zhang, L. Dedon, P. Ercius, C. Ophus, J. C. Agar, H. Lu, Z. Chen, A. M. Minor, I. Grinberg, A. M. Rappe, **L. W. Martin**, Temperature-stable, high-tunability dielectrics via composition and polarization gradients. *Nature Commun.* **8**, 14961 (2017).
 40. Z. Hong, A. R. Damodaran, F. Xue, S.-L. Hsu, J. Britson, A. K. Yadav, C. T. Nelson, J. Wang, J. F. Scott, **L. W. Martin**, R. Ramesh, L.-Q. Chen, Stability of polar vortex lattice in ferroelectric superlattices. *Nano Lett.* **17**, 2246-2252 (2017).
 41. S. P. Rogers, R. Xu, S. Pandya, **L. W. Martin**, M. Shim, Slow conductance relaxation in graphene-ferroelectric field-effect transistors. *J. Phys. Chem. C* **121**, 7542-7548 (2017).
 42. S. Pandya, J. D. Wilbur, B. Bhatia, A. R. Damodaran, C. Monachon, A. Dasgupta, W. P. King, C. Dames, **L. W. Martin**, Direct measurement of pyroelectric and electrocaloric effects in thin films. *Phys. Rev. Appl.* **7**, 034025 (2017).
 43. Y. Chen, F. Ke, P. Ci, C. Ko, T. Park, S. Saremi, H. Liu, Y. Lee, J. Shi, **L. W. Martin**, J. W. Ager, B. Chen, J. Wu, Pressurizing field-effect transistors of few-layer MoS₂ in a diamond anvil cell. *Nano Lett.* **17**, 194-199 (2017).
 44. B. Bhatia, H. Cho, J. Karthik, J. Choi, D. G. Cahill, **L. W. Martin**, W. P. King, High power density pyroelectric energy conversion in nanometer-thick BaTiO₃ films. *Nano. Micro. Thermophys. Eng.* **20**, 137-146 (2016).
 45. S. Saremi, R. Xu, L. R. Dedon, J. M. Mundy, S.-L. Hsu, Z. Chen, A. R. Damodaran, S. P. Chapman, J. T. Evans, **L. W. Martin**, Enhanced electrical resistivity and properties via ion bombardment of ferroelectric thin films. *Adv. Mater.* **26**, 10750-10756 (2016).
 46. F. Chen, Y. Zhu, S. Liu, Y. Qi, H. Hwang, N. C. Brandt, J. Lu, F. Quirin, H. Enquist, P. Zalden, T. Hu, J. Goodfellow, M. C. Hoffman, D. Zhu, H. Lemke, J. Glowina, M. Chollet, A. R. Damodaran, J. Park, Z. Cai, I. W. Jung, M. J. Highland, D. A. Walko, J. W. Freeland, P. G. Evans, A. Vailionis, J. Larsson, K. Nelson, A. M. Rappe, K. Sokolowski-Tinten, **L. W. Martin**, H. Wen, A. M. Lindenberg, Ultrafast terahertz-field-driven ionic response in ferroelectric BaTiO₃. *Phys. Rev. B* **94**, 180104(R) (2016).
 47. Z. Chen, X. Wang, Y. Qi, S. Yang, J. A. N. T. Soares, B. A. Apgar, R. Gao, R. Xu, Y. Lee, X. Zhang, J. Yao, **L. W. Martin**, Self-assembled, tunable metamaterials via spinodal decomposition. *ACS Nano* **10**, 10237-10244 (2016).
 48. **L. W. Martin**, A. M. Rappe, Thin-film ferroelectric materials and devices [Invited review]. *Nature Rev. Mater.* **1**, 16087 (2016).
 49. H. Lu, B. Wang, T. Li, A. Lipatov, H. Lee, A. Rajapitamahuni, R. Xu, X. Hong, B. Noheda, **L. W. Martin**, C.-B. Eom, L.-Q. Chen, A. Sinititskii, A. Gruverman, Domain engineering in ferroelectric capacitors with graphene electrodes. *Nano Lett.* **16**, 6460-6466 (2016).
 50. J. C. Agar, S. Pandya, R. Xu, A. K. Yadav, S. Saremi, T. Angsten, M. D. Asta, R. Ramesh, **L. W. Martin**, Frontiers in multifunctional ferroic materials [Invited prospective]. *MRS Commun.* **6**, 151-166 (2016).
 51. M. Brahlek, L. Zhang, H.-T. Zhang, J. Lapano, L. R. Dedon, **L. W. Martin**, R. Engel-Herbert, Mapping growth windows in quaternary perovskite oxide systems by hybrid molecular beam epitaxy. *Appl. Phys. Lett.* **109**, 101903 (2016).
 52. L. R. Dedon, A. R. Damodaran, Z. Chen, S. Saremi, R. Gao, B. A. Apgar, **L. W. Martin**, Stoichiometry control of domain structure and electronic, dielectric, and ferroelectric properties of BiFeO₃ films. *Chem. Mater.* **28**, 5952-5961 (2016).
 53. R. Gao, Y. Dong, H. Xu, H. Zhou, Y. Yuan, V. Gopalan, C. Gao, D. D. Fong, Z. H. Chen, Z. Luo, **L. W. Martin**, Interfacial octahedral rotation mismatch control of the symmetry and properties of SrRuO₃. *ACS Appl. Mater. Inter.* **8**, 14871-14878 (2016).
 54. A. Tselev, P. Yu, Y. Cao, L. R. Dedon, **L. W. Martin**, S. V. Kalinin, P. Maksymovych, Microwave a.c. conductivity of domain walls in ferroelectric thin film. *Nature Commun.* **7**, 11630 (2016).
 55. S. Pandya, A. R. Damodaran, R. Xu, S. L. Hsu, J. C. Agar, **L. W. Martin**, Strain-induced instability and surface patterning in perovskite thin films. *Sci. Rep.* **6**, 26075 (2016).

56. J. H. Hinnefeld, R. Xu, S. Rogers, M. Shim, **L. W. Martin**, N. Mason, Single gate p-n junctions in graphene-ferroelectric devices. *Appl. Phys. Lett.* **108**, 203109 (2016).
57. A. R. Damodaran, J. C. Agar, S. Pandya, Z. Chen, L. Dedon, R. Xu, B. Apgar, S. Saremi, **L. W. Martin**, New modalities of strain-control of ferroelectric thin films (Invited review). *J. Phys. Condens. Matter* **28**, 263001 (2016).
58. J. C. Agar, A. R. Damodaran, M. B. Okatan, J. Kacher, C. Gammer, R. K. Vasudevan, S. Pandya, R. V. K. Mangalam, G. A. Velarde, S. Jesse, N. Balke, A. M. Minor, S. V. Kalinin, **L. W. Martin**, Highly-mobile ferroelastic domain walls in compositionally-graded ferroelectric thin films. *Nature Mater.* **15**, 549-556 (2016).
59. M. L. Jablonski, S. Liu, C. R. Winkler, J. L. Hart, A. R. Damodaran, I. Grinberg, **L. W. Martin**, A. M. Rappe, M. L. Taheri, Asymmetric response of ferroelastic domain wall motion under applied bias. *ACS Appl. Mater. Inter.* **8**, 2935-2941 (2016).
60. A. K. Yadav, C. T. Nelson, S. L. Hsu, Z. Hong, J. Clarkson, C. Schlepuetz, A. R. Damodaran, P. Shafer, E. Arenholz, L. R. Dedon, A. Vishwanath, A. M. Minor, L. Q. Chen, J. F. Scott, **L. W. Martin**, R. Ramesh, Observation of polar vortices in oxide superlattices. *Nature* **530**, 198-201 (2016).
61. M. A. Islam, D. Saldana-Greco, Z. Gu, E. Breckenfeld, Q. Lei, F. Wang, R. Xu, C. J. Hawley, X. X. Xi, **L. W. Martin**, A. M. Rappe, J. E. Spanier, Chemically-switchable ultraviolet luminescence from interfacial two-dimensional electron gas. *Nano Lett.* **16**, 681-687 (2016).
62. J. Zhang, J. C. Agar, **L. W. Martin**, Structural phase diagram and pyroelectric properties of free-standing ferroelectric/non-ferroelectric multilayer structures. *J. Appl. Phys.* **118**, 244101 (2015).
63. F. Chen, J. Goodfellow, S. Liu, I. Grinberg, M. C. Hoffmann, A. R. Damodaran, Y. Zhu, X. Zhang, I. Takeuchi, A. Rappe, **L. W. Martin**, H. Wen, A. M. Lindenberg, Ultra-fast terahertz gating of polarization and giant nonlinear optical response in BiFeO₃ thin films. *Adv. Mater.* **27**, 6371-6375 (2015).
64. Z. Chen, J. Liu, Y. Qi, D. Chen, A. R. Damodaran, X. He, R. Xu, A. T. N'Diaye, A. Rockett, **L. W. Martin**, 180° ferroelectric stripe nanodomains in BiFeO₃ thin films. *Nano Lett.* **15**, 6506-6513 (2015).
65. J. C. Agar, A. R. Damodaran, S. Pandya, R. V. K. Mangalam, **L. W. Martin**, Complex evolution of built-in potential in compositionally-graded PbZr_{1-x}Ti_xO₃ heterostructures. *ACS Nano* **9**, 7332-7342 (2015).
66. H.-T. Zhang, L. R. Dedon, **L. W. Martin**, R. Engel-Herbert, Self-regulated growth of LaVO₃ thin films by hybrid molecular beam epitaxy. *Appl. Phys. Lett.* **106**, 233102 (2015).
67. J. A. Moyer, R. Gao, P. Schiffer, **L. W. Martin**, Epitaxial growth of highly-crystalline spinel ferrite thin films on perovskite substrates for all-oxide devices. *Sci. Rep.* **5**, 10363 (2015).
68. I. Gaponenko, P. Tuckmantel, J. Karthik, **L. W. Martin**, P. Paruch, Towards reversible control of domain wall conduction in Pb(Zr_{0.2}Ti_{0.8})O₃ thin films. *Appl. Phys. Lett.* **106**, 162902 (2015).
69. R. Xu, J. Zhang, Z. Chen, J. Karthik, **L. W. Martin**, Orientation-dependent structural phase diagrams and dielectric properties of PbZr_{1-x}Ti_xO₃ polydomain thin films. *Phys. Rev. B* **91**, 144106 (2015).
70. S. R. Spurgeon, P. V. Balachandran, D. M. Kepaptsoglou, A. R. Damodaran, J. Karthik, S. Nejati, L. Jones, H. Ambaye, V. Lauter, Q. M. Ramasse, K. K. S. Lau, **L. W. Martin**, J. M. Rondinelli, M. L. Taheri, Polarization screening-induced magnetic phase gradients at complex oxide interfaces, *Nature Commun.* **6**, 6735 (2015).
71. R. B. Wilson, B. A. Apgar, W.-P. Hsieh, **L. W. Martin**, D. G. Cahill, Thermal conductance of strongly bonded metal-oxide interfaces. *Phys. Rev. B* **91**, 115414 (2015).
72. R. Comes, S. Y. Smolin, T. C. Kaspar, R. Gao, B. A. Apgar, **L. W. Martin**, M. E. Bowden, J. B. Baxter, S. A. Chambers, Visible light carrier generation in co-doped epitaxial titanate films. *Appl. Phys. Lett.* **106**, 092901 (2015).
73. S. Lee, A. R. Damodaran, P. Gorai, N. Oh, J. Moyer, J.-H. Kwon, N. Ferdous, A. Shah, Z. Chen, E. Breckenfeld, R. V. K. Mangalam, P. V. Braun, P. Schiffer, M. Shim, J.-M. Zuo, E. Ertekin, **L. W. Martin**, Novel self-assembled, layered-phase in Ti-rich SrTiO₃ epitaxial thin films. *Adv. Mater.* **27**, 861-858 (2015).
74. J. A. Moyer, S. Lee, P. Schiffer, **L. W. Martin**, Magnetically disordered phase in epitaxial iron-deficient Fe₃O₄ thin films. *Phys. Rev. B* **91**, 064413 (2015).

75. C. Baeumer, D. Saldana-Greco, J. M. P. Martirez, A. M. Rappe, M. Shim, **L. W. Martin**, Ferroelectrically driven spatial carrier density modulation in graphene. *Nature Commun.* **6**, 6136 (2015).
76. R. Xu, S. Liu, I. Grinberg, J. Karthik, A. R. Damodaran, A. M. Rappe, **L. W. Martin**, Ferroelectric polarization reversal via successive ferroelastic transitions. *Nature Mater.* **14**, 79-86 (2015).
77. R. H. Haasch, E. Breckenfeld, **L. W. Martin**, Single crystal rare-earth scandate perovskites analyzed using X-ray photoelectron spectroscopy: 5. DyScO₃ (110). *Surf. Sci. Spectra* **21**, 165-172 (2014).
78. R. H. Haasch, E. Breckenfeld, **L. W. Martin**, Single crystal rare-earth scandate perovskites analyzed using X-ray photoelectron spectroscopy: 4. TbScO₃ (110). *Surf. Sci. Spectra* **21**, 157-164 (2014).
79. R. H. Haasch, E. Breckenfeld, **L. W. Martin**, Single crystal rare-earth scandate perovskites analyzed using X-ray photoelectron spectroscopy: 3. GdScO₃ (110). *Surf. Sci. Spectra* **21**, 149-156 (2014).
80. R. H. Haasch, E. Breckenfeld, **L. W. Martin**, Single crystal rare-earth scandate perovskites analyzed using X-ray photoelectron spectroscopy: 2. NdScO₃ (110). *Surf. Sci. Spectra* **21**, 140-148 (2014).
81. R. H. Haasch, E. Breckenfeld, **L. W. Martin**, Single crystal rare-earth scandate perovskites analyzed using X-ray photoelectron spectroscopy: 1. PrScO₃ (110). *Surf. Sci. Spectra* **21**, 131-139 (2014).
82. R. H. Haasch, E. Breckenfeld, **L. W. Martin**, Single crystal perovskites analyzed using X-ray photoelectron spectroscopy: 5. NdGaO₃ (110). *Surf. Sci. Spectra* **21**, 122-130 (2014).
83. R. H. Haasch, E. Breckenfeld, **L. W. Martin**, Single crystal perovskites analyzed using X-ray photoelectron spectroscopy: 4. (LaAlO₃)_{0.3}(Sr₂TaAlO₆)_{0.7} (001). *Surf. Sci. Spectra* **21**, 112-121 (2014).
84. R. H. Haasch, E. Breckenfeld, **L. W. Martin**, Single crystal perovskites analyzed using X-ray photoelectron spectroscopy: 3. LaAlO₃ (001). *Surf. Sci. Spectra* **21**, 103-111 (2014).
85. R. H. Haasch, E. Breckenfeld, **L. W. Martin**, Single crystal perovskites analyzed using X-ray photoelectron spectroscopy: 2. YAlO₃ (110). *Surf. Sci. Spectra* **21**, 95-102 (2014).
86. R. H. Haasch, E. Breckenfeld, **L. W. Martin**, Single crystal perovskites analyzed using X-ray photoelectron spectroscopy: 1. SrTiO₃ (001). *Surf. Sci. Spectra* **21**, 87-94 (2014).
87. R. H. Haasch, E. Breckenfeld, **L. W. Martin**, An introduction to single crystal perovskites and single crystal rare-earth scandate perovskites analyzed using X-ray photoelectron spectroscopy. *Surf. Sci. Spectra* **21**, 84-86 (2014).
88. E. Breckenfeld, Z. Chen, A. R. Damodaran, **L. W. Martin**, Effects of nonequilibrium growth, non-stoichiometry, and film orientation on the metal-to-insulator transition in NdNiO₃ thin films. *ACS Appl. Mater. Inter.* **6**, 22436-22444 (2014).
89. B. Bhatia, A. R. Damodaran, H. Cho, **L. W. Martin**, W. P. King, High-frequency thermal-electrical cycles for pyroelectric energy conversion. *J. Appl. Phys.* **116**, 194509 (2014).
90. T. Tong, J. Karthik, **L. W. Martin**, D. G. Cahill, Secondary effects in wide frequency range measurements of the pyroelectric coefficient of Ba_{0.6}Sr_{0.4}TiO₃ and PbZr_{0.2}Ti_{0.8}O₃ epitaxial layers. *Phys. Rev. B* **90**, 155423 (2014).
91. E. Breckenfeld, N. Bronn, N. Mason, **L. W. Martin**, Tunability of conduction at the LaAlO₃/SrTiO₃ heterointerface: thickness and compositional studies. *Appl. Phys. Lett.* **105**, 121610 (2014).
92. T. Tong, J. Karthik, R. V. K. Mangalam, **L. W. Martin**, D. G. Cahill, Reduction of the electrocaloric entropy change of ferroelectric PbZr_{1-x}Ti_xO₃ epitaxial layers due to an elastocaloric effect. *Phys. Rev. B* **90**, 094116 (2014).
93. A. R. Damodaran, E. Breckenfeld, Z. Chen, S. Lee, **L. W. Martin**, Enhancement of ferroelectric Curie temperature in BaTiO₃ films via strain-induced defect-dipole alignment. *Adv. Mater.* **26**, 6341-6347 (2014).
94. J. C. Agar, R. V. K. Mangalam, A. R. Damodaran, G. Velarde, J. Karthik, M. B. Okatan, Z. H. Chen, S. Jesse, N. Balke, S. V. Kalinin, **L. W. Martin**, Tuning susceptibility via misfit strain in relaxed morphotropic phase boundary PbZr_{1-x}Ti_xO₃ epitaxial thin films. *Adv. Mater. Interfaces* **1**, 1400098 (2014).
95. C. Dagdeviren, Y. Su, P. Joe, R. Yona, Y. H. Liu, Y.-S. Kim, Y.-A. Huang, A. R. Damodaran, J. Xia, **L. W. Martin**, Y. Huang, J. A. Rogers, Conformable amplified lead zirconate titanate sensors with enhanced piezoelectric response for cutaneous pressure monitoring. *Nature Commun.* **5**, 4496 (2014).

96. M. T. Kesim, J. Zhang, S. P. Alpay, **L. W. Martin**, Enhanced electrocaloric and pyroelectric response from ferroelectric multilayers. *Appl. Phys. Lett.* **105**, 052901 (2014).
97. J. Zhang, R. Xu, A. R. Damodaran, Z.-H. Chen, **L. W. Martin**, Understanding order in compositionally-graded ferroelectrics: flexoelectricity, gradient, and depolarization field effects. *Phys. Rev. B* **89**, 224101 (2014).
98. J. C. T. Lee, A. R. Damodaran, R. Ramesh, **L. W. Martin**, P. Abbamonte, X-ray diffraction studies of stripelike ferroelectric domains in thin films of BiFeO₃. *Phys. Rev. B* **89**, 214104 (2014).
99. C. R. Winkler, M. L. Jablonski, K. Ashraf, A. R. Damodaran, J. Karthik, J. L. Hart, J. G. Wen, D. Miller, **L. W. Martin**, S. Salahuddin, M. L. Taheri, Real-time observation of local strain effects on nonvolatile ferroelectric memory storage mechanisms. *Nano Lett.* **14**, 3617-3622 (2014).
100. M. Kozina, T. Hu, J. S. Wittenberg, E. Szilagy, M. Trigo, T. A. Miller, C. Uher, A. R. Damodaran, **L. W. Martin**, A. Mehta, J. Corbett, J. Safranek, D. A. Reis, A. M. Lindenberg, Measurement of transient atomic displacements in thin films with picosecond and femtometer resolution. *Struct. Dyn.* **1**, 034301 (2014).
101. Z. H. Chen, A. R. Damodaran, R. Xu, S. Lee, **L. W. Martin**, Effect of “symmetry mismatch” on the domain structure of rhombohedral BiFeO₃ thin films. *Appl. Phys. Lett.* **104**, 182908 (2014).
102. P. Brinks, B. Kuiper, E. Breckenfeld, G. Koster, **L. W. Martin**, G. Rijnders, M. Huijben, Enhanced thermoelectric power factor of Na_xCoO₂ thin films by structural engineering. *Adv. Energy Mater.* **4**, 1301927 (2014).
103. S. L. Gleason, T. Byrum, Y. Gim, A. Thaler, P. Abbamonte, G. J. MacDougall, **L. W. Martin**, H. D. Zhou, S. L. Cooper, Magnon spectra and strong spin-lattice coupling in magnetically frustrated MnB₂O₄ (B = Mn, V): Inelastic light scattering studies. *Phys. Rev. B.* **89**, 134402 (2014).
104. B. Apgar, **L. W. Martin**, Understanding the competition between epitaxial strain and thermodynamics in TiO₂: structural, morphological, and property evolution. *Cryst. Growth Des.* **14**, 1981-1988 (2014).
105. S. R. Spurgeon, J. D. Sloppey, C. R. Winkler, M. Jablonski, D. Kepaptsoglou, P. Balachandran, S. Nejati, J. Karthik, A. R. Damodaran, C. L. Johnson, H. Ambaye, R. Goyette, V. Lauter, Q. Ramasse, J. C. Idrobo, K. S. Lau, S. E. Lofland, J. Rondinelli, **L. W. Martin**, M. L. Taheri. Thickness-dependent crossover from charge- to strain-mediated magnetoelectric coupling in ferromagnetic/piezoelectric oxide heterostructures. *ACS Nano* **8**, 894-903 (2014).
106. R. Xu, J. Karthik, A. R. Damodaran, **L. W. Martin**, Stationary domain wall contributions to enhanced ferroelectric susceptibilities. *Nature Commun.* **5**, 3120 (2014).
107. R. V. K. Mangalam, J. C. Agar, A. R. Damodaran, J. Karthik, **L. W. Martin**, Improved pyroelectric figures of merit in compositionally graded PbZr_{1-x}Ti_xO₃ thin films. *ACS Appl. Mater. Interfaces* **5**, 13235-13241 (2013).
108. J. Rondinelli, N. A. Benedek, D. E. Freedman, A. Kavner, E. E. Rodriguez, E. S. Toberer, **L. W. Martin**, Accelerating functional materials discovery: insights from geological sciences, data-driven approaches, and computational advances. *Amer. Ceram. Soc. Bulletin* **92**, 14-22 (2013)
109. B. A. Apgar, S. Lee, L. Schroeder, **L. W. Martin**, Enhanced photoelectrochemical activity in all-oxide heterojunction devices based on correlated “metallic” oxides. *Adv. Mater.* **25**, 6201-6206 (2013).
110. E. Breckenfeld, A. B. Shah, **L. W. Martin**, Strain evolution in non-stoichiometric heteroepitaxial thin-film perovskites. *J. Mater. Chem. C* **1**, 8052-8059 (2013).
111. M. Huijben, P. Yu, **L. W. Martin**, H. J. A. Molegraaf, Y.-H. Chu, M. B. Holcomb, N. Balke, R. Ramesh, G. Rijnders, Ultrathin limit of exchange bias coupling at oxide multiferroic/ferromagnetic interfaces. *Adv. Mater.* **25**, 4739-4745 (2013).
112. E. Breckenfeld, R. Wilson, **L. W. Martin**, Effect of growth-induced (non)stoichiometry on the thermal conductivity, permittivity, and dielectric loss of LaAlO₃ films. *Appl. Phys. Lett.* **103**, 082901 (2013).
113. S. Lee, B. Apgar, **L. W. Martin**, Strong visible-light absorption and hot-carrier injection in TiO₂/SrRuO₃ heterostructures. *Adv. Energy Mater.* **3**, 1084-1090 (2013).
114. P. C. Fletcher, V. K. R. Mangalam, **L. W. Martin**, W. P. King, Pyroelectric electron emission from nanometer-thick films of PbZr_xTi_{1-x}O₃. *Appl. Phys. Lett.* **102**, 193908 (2013).

115. E. Breckenfeld, N. Bronn, J. Karthik, A. R. Damodaran, S. Lee, N. Mason, **L. W. Martin**, Effect of growth induced (non)stoichiometry on the structure and interfacial conductivity of LaAlO₃/SrTiO₃. *Phys. Rev. Lett.* **110**, 196804 (2013).
116. C. Baeumer, S. P. Rogers, R. Xu, **L. W. Martin**, M. Shim, Tunable carrier type and density in graphene/PbZr_{0.2}Ti_{0.8}O₃ hybrid structures through ferroelectric switching. *Nano Lett.* **13**, 1693-1698 (2013).
117. P. C. Fletcher, V. K. R. Mangalam, **L. W. Martin**, W. P. King, Field emission from nanometer-scale tips of crystalline PbZr_xTi_{1-x}O₃. *J. Vac. Sci. Technol. B* **31**, 021805 (2013).
118. R. V. K. Mangalam, J. Karthik, A. R. Damodaran, J. C. Agar, **L. W. Martin**, Unexpected crystal and domain structure and properties in compositionally graded PbZr_{1-x}Ti_xO₃ thin films. *Adv. Mater.* **25**, 1761-1767 (2013).
119. J. Karthik, R. V. K. Mangalam, J. C. Agar, **L. W. Martin**, Large built-in electric fields due to flexoelectricity in compositionally graded ferroelectric thin films. *Phys. Rev. B* **87**, 024111 (2013).
120. J. Karthik, J. C. Agar, A. R. Damodaran, **L. W. Martin**, Effect of 90° domain walls and thermal expansion mismatch on the pyroelectric properties of epitaxial PbZr_{0.2}Ti_{0.8}O₃ thin films. *Phys. Rev. Lett.* **109**, 257602 (2012).
121. R. B. Wilson, B. A. Apgar, **L. W. Martin**, D. G. Cahill, Thermoreflectance of metal transducers for optical pump-probe studies of thermal properties. *Optics Express* **20**, 28829-28838 (2012).
122. B. Bhatia, J. Karthik, T. Trong, D. G. Cahill, **L. W. Martin**, W. P. King, Pyroelectric current measurements on PbZr_{0.2}Ti_{0.8}O₃ epitaxial layers. *J. Appl. Phys.* **112**, 104106 (2012).
123. **L. W. Martin**, D. G. Schlom, Advanced synthesis techniques and routes to new multiferroics [Invited review]. *Curr. Opin. Sol. Stat. Mater. Sci.* **16**, 199-215 (2012).
124. C. R. Winkler, A. R. Damodaran, J. Karthik, M. Jablonski, **L. W. Martin**, M. L. Taheri, Accessing intermediate ferroelectric switching regimes with time-resolved TEM. *J. Appl. Phys.* **112**, 052013 (2012).
125. C. R. Winkler, A. R. Damodaran, J. Karthik, **L. W. Martin**, M. L. Taheri, Direct observation of ferroelectric domain switching in varying electric field regimes using in situ TEM. *Micron* **43**, 1121-1126 (2012).
126. R. Jackson, P. C. Fletcher, J. Karthik, A. R. Damodaran, J. N. Emmerich, H. Teng, W. P. King, **L. W. Martin**, Y. Wu, Electrical and thermal characterization of a ferroelectric thin film with an electro-thermal scanning probe. *Rev. Sci. Instru.* **83**, 076105 (2012).
127. P. Yu, W. Luo, J. X. Zhang, M. D. Rossell, C.-H. Yang, S. Y. Yang, Q. He, Q. M. Ramasse, R. Erni, **L. W. Martin**, Y. H. Chu, S. T. Pantelides, S. J. Pennycook, R. Ramesh, Interface control of bulk ferroelectric polarization. *Proc. Nat. Acad. Sci.* **109**, 9710-9715 (2012).
128. S. Polisetty, J. Zhou, J. Karthik, A. R. Damodaran, D. Chen, A. Scholl, **L. W. Martin**, M. Holcomb, Linear dichroism dependence on ferroelectric polarization. *J. Phys. Condens. Matter* **24**, 245902 (2012).
129. J. Karthik, A. R. Damodaran, **L.W. Martin**, Effect of 90° domain walls on the low-field permittivity of PbZr_{0.2}Ti_{0.8}O₃ thin films. *Phys. Rev. Lett.* **108**, 167601 (2012).
130. J. Karthik, A. R. Damodaran, **L. W. Martin**, Epitaxial ferroelectric heterostructures fabricated by selective area epitaxy of SrRuO₃ using an MgO mask. *Adv. Mater.* **24**, 1610-1615 (2012).
131. **L. W. Martin**, R. Ramesh, Multiferroic and magnetoelectric heterostructures [Invited review]. *Acta Mater.* **60**, 2449-2470 (2012).
132. A. R. Damodaran, E. Breckenfeld, A. K. Choquette, **L. W. Martin**, Stabilization of mixed-phase structure in highly-strained BiFeO₃ thin films via chemical-alloying. *Appl. Phys. Lett.* **100**, 082904 (2012).
133. Q. He, C.-H. Yeh, J.-C. Yang, G. Singh-Bhalla, C.-W. Liang, P.-W. Chiu, G. Catalan, **L. W. Martin**, Y.-H. Chu, J. F. Scott, R. Ramesh, Magnetotransport at domain walls in BiFeO₃. *Phys. Rev. Lett.* **108**, 067203 (2012).
134. E. Breckenfeld, R. Wilson, J. Karthik, A. R. Damodaran, D. G. Cahill, **L. W. Martin**, Effect of growth induced (non)stoichiometry on the structure, dielectric response, and thermal conductivity of SrTiO₃ thin films. *Chem. Mater.* **24**, 331-337 (2012).

135. A. R. Damodaran, S. Lee, J. Karthik, S. MacLaren, **L. W. Martin**, Temperature and thickness evolution and epitaxial breakdown in highly strained BiFeO₃ thin films. *Phys. Rev. B* **85**, 024113 (2012).
136. B. Bhatia, J. Karthik, D. G. Cahill, L. W. Martin, W. P. King, High-temperature piezoresponse force microscopy. *Appl. Phys. Lett.* **99**, 173103 (2011).
137. M. Chi, J. P. Bradley, N. D. Browning, T. Mizoguchi, **L. W. Martin**, R. Ramesh, H. Ikeno, I. Tanaka, Atomic and electronic structures of SrVO₃-LaAlO₃ interface. *J. Appl. Phys.* **110**, 046104 (2011).
138. J. Karthik, **L. W. Martin**, Effect of domain walls on the electrocaloric properties of Pb(Zr_{1-x},Ti_x)O₃ thin films. *Appl. Phys. Lett.* **99**, 032904 (2011).
139. A. R. Damodaran, C.-W. Liang, Q. He, C.-Y. Peng, L. Chang, Y.-H. Chu, **L. W. Martin**, Nanoscale structure and mechanism for enhanced electromechanical response of highly-strained BiFeO₃ thin film. *Adv. Mater.* **23**, 3170-3175 (2011).
140. **L. W. Martin**, Exciting new insight into the prototype complex oxide heterointerface: LaAlO₃ / SrTiO₃ (Invited perspective). *Surf. Sci.* **605**, 1388-1389 (2011).
141. J. Karthik, **L. W. Martin**, Evolution of pyroelectric properties in polydomain Pb(Zr_{1-x},Ti_x)O₃ thin films. *Phys. Rev. B* **84**, 024102 (2011).
142. D.-W. Oh, J. Ravichandran, C.-W. Liang, W. Siemons, B. Jalan, C. M. Brooks, M. Huijben, D. G. Schlom, S. Stemmer, **L. W. Martin**, A. Majumdar, R. Ramesh, D. G. Cahill, Thermal conductivity as a metric for the crystalline quality of SrTiO₃ epitaxial layers. *Appl. Phys. Lett.* **98**, 221904 (2011).
143. S. Lee, C.-W. Liang, **L. W. Martin**, Epitaxial control of Cu₂O nanostructures via pulsed laser deposition. *ACS Nano*. **5**, 3736-3743 (2011).
144. S. C. Kehr, Y. Liu, **L. W. Martin**, P. Yu, M. Gajek, M. T. Wenzel, R. Jacob, H.-G. von Ribbeck, L. M. Eng, M. Helm, X. Zhang, R. Ramesh, Near-field examination of perovskite-based superlenses and superlens-enhanced probe-object coupling. *Nature Commun.* **2**, 249 (2011).
145. J. X. Zhang, B. Xiang, J. Seidel, R. J. Zeches, P. Yu, S. Y. Yang, C. H. Wang, Y.-H. Chu, **L. W. Martin**, A. Minor, R. Ramesh. Large field-induced strains in a lead-free piezoelectric material, *Nature Nanotechnol.* **6**, 98-102 (2011).
146. **L. W. Martin**, Engineering functionality in multiferroic BiFeO₃ – controlling chemistry to enable advanced applications (Invited perspective). *Dalton Trans.* **39**, 10813-10826 (2010).
147. N. Balke, M. Gajek, A. K. Tagantsev, **L. W. Martin**, Y.-H. Chu, R. Ramesh, S. V. Kalinin, Direct observation of capacitor switching using planar electrodes. *Adv. Funct. Mater.* **20**, 3466-3475 (2010).
148. M. C. Langner, C. L. S. Kantner, Y.-H. Chu, **L. W. Martin**, P. Yu, R. Ramesh, J. Orenstein, Effective thermal boundary resistance from thermal decoupling of magnons and phonons in SrRuO₃ thin films. *Phys. Rev. B* **82**, 054425 (2010).
149. P. Yu, J.-S. Lee, S. Okamoto, M. D. Rossell, M. Huijben, C.-H. Yang, Q. He, J.-X. Zhang, S. Y. Yang, M. J. Lee, Q. M. Ramasse, R. Erni, Y.-H. Chu, D. A. Arena, C.-C. Kao, **L. W. Martin**, R. Ramesh, Interface ferromagnetism and orbital reconstruction in BiFeO₃-La_{0.7}Sr_{0.3}MnO₃ heterostructures. *Phys. Rev. Lett.* **105**, 027201 (2010).
150. **L. W. Martin**, Y.-H. Chu, R. Ramesh, Advances in the growth and characterization of magnetic, ferroelectric, and multiferroic oxide thin films (Invited review). *Mater. Sci. Eng. R* **68**, 89-133 (2010).
151. D. Pantel, Y.-H. Chu, **L. W. Martin**, R. Ramesh, D. Hesse, M. Alexe, Switching kinetics in epitaxial BiFeO₃ thin films. *J. Appl. Phys.* **107**, 084111 (2010).
152. M. B. Holcomb, **L.W. Martin**, A. Scholl, Q. He, P. Yu, C.-H. Yang, S. Y. Yang, P.-A. Glans, M. Valdivares, M. Huijben, J. B. Kortright, J. Guo, Y.-H. Chu, R. Ramesh, Probing the evolution of antiferromagnetism in multiferroics. *Phys. Rev. B* **81**, 134406 (2010).
153. S. Y. Yang, J. Seidel, S. J. Byrnes, P. Shafer, C.-H. Yang, M. D. Rossell, J. W. Ager III, **L. W. Martin**, R. Ramesh, Above-bandgap voltages from ferroelectric photovoltaic devices. *Nature Nanotechnol.* **5**, 143-147 (2010).
154. R. J. Zeches, M. D. Rossell, J. X. Zhang, A. J. Hatt, Q. He, C. H. Yang, A. Kumar, C. H. Wang, A. Melville, Y.-H. Chu, J. F. Ihlefeld, R. Erni, C. Ederer, V. Gopalan, L. Q. Chen, D. G. Schlom, N. A. Spaldin, **L. W. Martin**, R. Ramesh, A strain-driven morphotropic phase boundary in BiFeO₃. *Science* **326**, 977-980 (2009).

155. S.-Y. Yang, **L. W. Martin**, S. J. Byrnes, T. E. Conry, S. R. Basu, D. Paran, L. Reichertz, J. F. Ihlefeld, C. Adamo, A. Melville, Y.-H. Chu, C.-H. Yang, J. L. Musfeldt, D. G. Schlom, J. W. Ager III, R. Ramesh, Photovoltaic effects in BiFeO₃ thin films. *Appl. Phys. Lett.*, **95**, 062909 (2009).
156. J. Zhang, M. Rutkowski, **L. W. Martin**, T. Conry, R. Ramesh, J. F. Ihlefeld, A. Melville, D. G. Schlom, L. J. Brillson, Surface, bulk, and interface electronic states of epitaxial BiFeO₃ films. *J. Vac. Sci. Technol. B* **27**, 2012-2014 (2009).
157. M. O. Ramirez, A. Kumar, S. A. Denev, N. J. Podraza, X. S. Xu, R. C. Rai, Y.-H. Chu, J. Seidel, **L. W. Martin**, S. Y. Yang, E. Saiz, J. F. Ihlefeld, S. Lee, J. Klug, S. W. Cheong, M. J. Bedzyk, O. Auciello, D. G. Schlom, R. Ramesh, J. Orenstein, J. L. Musfeldt, V. Gopalan, Magnon sidebands and spin-charge coupling in bismuth ferrite probed by nonlinear optical spectroscopy. *Phys. Rev. B* **79**, 224106 (2009).
158. G. L. Yuan, **L. W. Martin**, R. Ramesh, A. Uedono, The dependence of oxygen vacancy distributions in BiFeO₃ films on oxygen pressure and substrate. *Appl. Phys. Lett.* **95**, 012904 (2009).
159. L. Pintilie, C. Dragoi, Y.-H. Chu, **L. W. Martin**, R. Ramesh, M. Alexe, Orientation-dependent potential barriers in the case of epitaxial Pt-BiFeO₃-SrRuO₃ capacitors. *Appl. Phys. Lett.* **94**, 232902 (2009).
160. C.-H. Yang, J. Seidel, S.-Y. Kim, P. Rossen, P. Yu, M. Gajek, Y.-H. Chu, **L. W. Martin**, M. B. Holcomb, Q. He, P. Maksymovych, N. Balke, S. V. Kalinin, A. P. Baddorf, S. R. Basu, M. L. Scullin, R. Ramesh, Electric modulation of conduction in multiferroic Ca-doped BiFeO₃ films. *Nature Mater.* **8**, 485-493 (2009).
161. M. C. Langner, C. L. S. Kantner, Y.-H. Chu, **L. W. Martin**, P. Yu, J. Seidel, R. Ramesh, J. Orenstein, Observation of ferromagnetic resonance in SrRuO₃ by the time-resolved magneto-optical Kerr effect. *Phys. Rev. Lett.* **102**, 177601 (2009).
162. X. S. Xu, T. V. Brinzari, S. Lee, Y.-H. Chu, **L. W. Martin**, A. Kumar, S. McGill, R. C. Rai, R. Ramesh, V. Gopalan, S. W. Cheong, J. L. Musfeldt, Optical properties and magnetochromism in multiferroic BiFeO₃. *Phys. Rev. B* **79**, 134425 (2009).
163. M. O. Ramirez, A. Kumar, S. A. Denev, Y.-H. Chu, J. Seidel, **L. W. Martin**, S. Y. Yang, R. C. Rai, X. S. Xue, J. F. Ihlefeld, N. J. Podraza, E. Saiz, S. Lee, J. Klug, S. W. Cheong, M. J. Bedzyk, O. Auciello, D. G. Schlom, J. Orenstein, R. Ramesh, J. L. Musfeldt, A. P. Litvinchuk, V. Gopalan, Spin-charge-lattice coupling through resonant multimagnon excitations in multiferroic BiFeO₃. *Appl. Phys. Lett.* **94**, 161905 (2009).
164. Y.-H. Chu, Q. He, C.-H. Yang, P. Yu, **L. W. Martin**, P. Shafer, R. Ramesh, Nanoscale control of domain architectures in BiFeO₃ thin films. *Nano Lett.* **9**, 1726-1730 (2009).
165. J. Seidel*, **L.W. Martin***, Q. He, Q. Zhan, Y.-H. Chu, A. Rother, M. E. Hawkrige, P. Maksymovych, P. Yu, M. Gajek, N. Balke, S. V. Kalinin, S. Gemming, F. Wang, G. Catalan, J. F. Scott, N. A. Spaldin, J. Orenstein, R. Ramesh, Conducting ferroelectric domain walls in oxide multiferroics. *Nature Mater.* **8**, 229-234 (2009).
166. **L. W. Martin**, S. P. Crane, Y.-H. Chu, M. B. Holcomb, M. Gajek, M. Huijben, C.-H. Yang, N. Balke, R. Ramesh, Multiferroics: Thin films and nanostructures (Invited review). *J. Phys. Condens. Matter* **20**, 434220 (2008).
167. M. Huijben, **L.W. Martin**, Y.-H. Chu, M. B. Holcomb, P. Yu, G. Rijnders, D. H. A. Blank, R. Ramesh, Critical thickness and orbital ordering in ultrathin La_{0.7}Sr_{0.3}MnO₃ films. *Phys. Rev. B* **78**, 094413 (2008).
168. **L. W. Martin**, Y.-H. Chu, M. B. Holcomb, M. Huijben, P. Yu, S. J. Han, D. Lee, S. X. Wang, R. Ramesh, Nanoscale control of exchange bias with BiFeO₃ thin films. *Nano Lett.* **8**, 2050-2055 (2008).
169. A. Kumar, N.J. Podraza, S. Denev, J. Li, **L.W. Martin**, Y.-H. Chu, R. Ramesh, R. W. Collins, V. Gopalan, Linear and nonlinear optical properties of multifunctional PbVO₃ thin films. *Appl. Phys. Lett.* **92**, 231915 (2008).
170. Y.-H. Chu*, **L.W. Martin***, M. B. Holcomb, M. Gajek, S. J. Han, Q. He, N. Balke, C.-H. Yang, D. Lee, W. Hu, Q. Zhan, P.-L. Yang, A. Fraile-Rodriguez, A. Scholl, S. X. Wang, R. Ramesh, Electric-field control of local ferromagnetism using a magnetoelectric multiferroic. *Nature Mater.* **7**, 478-482 (2008).
171. A. Kumar, R. C. Rai, N. Podraza, S. Denev, M. Ramirez, Y.-H. Chu, **L.W. Martin**, J. F. Ihlefeld, T. Heeg, J. Schubert, D. G. Schlom, J. Orenstein, R. Ramesh, R. W. Collins, J. L. Musfeldt, V. Gopalan, Linear and Nonlinear Optical Properties of BiFeO₃. *Appl. Phys. Lett.* **92**, 121915 (2008).

172. Y.-H. Chu, Q. Zhan, C.-H. Yang, M. Cruz, **L.W. Martin**, T. Zhao, P. Yu, R. Ramesh, P. T. Joseph, I. N. Lin, W. Tian, D. G. Schlom, Low voltage performance of epitaxial BiFeO₃ films on Si substrates through lanthanum-substitution. *Appl. Phys. Lett.* **92**, 102909 (2008).
173. S. R. Basu, **L.W. Martin**, Y.-H. Chu, M. Gajek, R. Ramesh, R. C. Rai, X. Xu, J. L. Musfeldt, Photoconductivity in BiFeO₃ thin films. *Appl. Phys. Lett.* **92**, 091905 (2008).
174. **L. W. Martin**, Y.-H. Chu, Q. Zhan, R. Ramesh, S. J. Han, S. X. Wang, M. Warusawithana, D. G. Schlom, Room temperature exchange bias and spin valves based on BiFeO₃/SrRuO₃/SrTiO₃/Si(001) heterostructures. *Appl. Phys. Lett.* **91**, 172513 (2007).
175. Y.-H. Chu, M.P. Cruz, C.-H. Yang, **L.W. Martin**, P.-L. Yang, J. X. Zhang, K. Lee, P. Yu, L.-Q. Chen, R. Ramesh, Domain control in multiferroic BiFeO₃ through substrate vicinality. *Adv. Mater.* **19**, 2662-2666 (2007).
176. Y.-H. Chu, **L. W. Martin**, M. B. Holcomb, R. Ramesh, Controlling magnetism with multiferroics (Invited review). *Mater. Today* **10**, 16-23 (2007).
177. Y.-H. Chu, **L.W. Martin**, Q. Zhan, P.-L. Yang, M. P. Cruz, K. Lee, M. Barry, S. Y. Yang, R. Ramesh, Epitaxial multiferroic BiFeO₃ thin films: progress and future directions (Invited review). *Ferroelectrics* **354**, 167-177 (2007).
178. J. F. Ihlefeld, A. Kumar, **L.W. Martin**, Y.-H. Chu, Y. B. Chen, T. Heeg, J. Schubert, X. Ke, J. Orenstein, V. Gopalan, X. Q. Pan, P. Schiffer, R. Ramesh, D. G. Schlom, Adsorption-controlled molecular-beam epitaxial growth of BiFeO₃. *Appl. Phys. Lett.* **91**, 071922 (2007).
179. Y.-H. Chu, T. Zhao, M.P. Cruz, Q. Zhan, P.L. Yang, **L.W. Martin**, M. Huijben, C.-H. Yang, F. Zavaliche, H. Zheng, R. Ramesh, Ferroelectric size effects in multiferroic BiFeO₃ thin films. *Appl. Phys. Lett.* **90**, 252906 (2007).
180. R. Ramesh, F. Zavaliche, Y.-H. Chu, **L.W. Martin**, S. Y. Yang, M. Barry, K. Lee, P. Yang, Q. Zhan, Magnetoelectric complex-oxide heterostructures (Invited review). *Phil. Mag. Lett.* **87**, 155-164 (2007).
181. A. Kumar, **L.W. Martin**, S. Denev, J. B. Kortright, Y. Suzuki, R. Ramesh, V. Gopalan, Polar and magnetic properties of PbVO₃ thin films. *Phys. Rev. B* **75**, 060101(R) (2007).
182. G. W. Pabst, **L.W. Martin**, Y.-H. Chu, R. Ramesh, Leakage mechanisms in BiFeO₃ thin films. *Appl. Phys. Lett.* **90**, 072902 (2007).
183. **L. W. Martin**, Q. Zhan, Y. Suzuki, R. Ramesh, M. F. Chi, N. Browning, T. Mizoguchi, J. Kreisel, Growth and structure of PbVO₃ thin films. *Appl. Phys. Lett.* **90**, 062903 (2007).
184. Y.-H. Chu, Q. Zhan, **L.W. Martin**, M. P. Cruz, P.-L. Yang, G. W. Pabst, F. Zavaliche, S. Y. Yang, J. X. Zhang, L.-Q. Chen, D. G. Schlom, I. N. Lin, T. B. Wu, R. Ramesh, Nanoscale domain control in multiferroic BiFeO₃ thin films. *Adv. Mater.* **18**, 2307-2311 (2006).

EDITORIAL FUNCTIONS, BOOKS, AND BOOK CHAPTERS

1. R. V. K. Mangalam, J. Moyer, **L. W. Martin**, Epitaxial Growth of Magnetic Oxide Thin Films, in *Epitaxial Growth of Complex Metal Oxides*, Eds. G. Koster and G. Rijnders, Woodhead: New York (2015).
2. **L.W. Martin**, Y.-H. Chu, R. Ramesh, Emerging Multiferroic Memories, in *Emerging Nonvolatile Memories*, Eds. S. Hong, O. Auciello, and D. Wouters, Springer: New York (2014).
3. **L. W. Martin** (Ed.), Multiferroics in *Curr. Opin. Solid Stat. Mater. Sci.* **16**, 199-268 (2012).
4. **L.W. Martin**, Multiferroics, Invited chapter, McGraw-Hill 2009 Yearbook of Science and Technology, McGraw-Hill: Columbus (2009).

PATENTS

1. Zongquan Gu, Jonathan E. Spanier, **Lane W. Martin**, Christopher R. Elsass, Alessia Polemi, Anoop Damodaran, Engineered Dielectric Meta-Materials, U.S. Patent Application No. 62/485,297 (Filed Apr. 13, 2017).
2. William P. King, **Lane W. Martin**, Patrick C. Fletcher, Electron Emission Device, US Patent No. 9,685,295 B2 (Awarded June 20, 2017).
3. Robert J. Zeches, **Lane W. Martin**, Ramamoorthy Ramesh, Thin film bismuth iron oxides useful for piezoelectric devices, US Patent No. US 9,356,224 B2 (Awarded May 31, 2016).

4. **Lane W. Martin**, Sungki Lee, Brent Apgar, Light Absorbing Oxide Materials for Advanced Photovoltaic and Photocatalytic Applications and Devices, U.S. Patent Application No. US20140060643 (Filed Sept. 4, 2013).
5. Jan Seidel, Ramamoorthy Ramesh, **Lane W. Martin**, Seung-Yeul Yang, Ferroic Materials Having Domain Walls and Related Devices, US Patent Application US 20110308580 (Dec. 22, 2011). [not pursued to final patent]

INVITED TALKS

1. L. W. Martin, TBD, European Materials Research Society (EMRS) (Sept. 2018, Warsaw, Poland).
2. J. C. Agar, L. W. Martin, Nanoscale Susceptibilities in Ferroelectric Thin Films: Insights from Multidimensional Spectroscopy and Machine Learning, International Conferences on Modern Materials and Technologies (CIMTEC) 2018 (June 2018, Perugia, Italy).
3. L. W. Martin, Relaxor Ferroelectric Thin Films – Strain, Size, and Chemistry Effects and Potential for Novel Applications, IEEE ISAF-FMA-AMF-AMEC-PFM Joint Conference (IFAAP 2018) (May 2018, Hiroshima, Japan).
4. L. W. Martin, Emergent Phenomena in Ferroic Complex Oxide Thin Films, Department of Physics Seminar, University of Electronic Science and Technology (UESTC) (May 2018, Chengdu, China).
5. L. W. Martin, Emergent Phenomena in Ferroic Complex Oxide Thin Films, University of Texas, El Paso/University of California, Santa Barbara NSF Partnership in Research, Education, and Materials (PREM) Seminar (Apr. 2018, El Paso, TX).
6. L. W. Martin, Emergent Phenomena in Ferroic Complex Oxide Thin Films, Department of Materials Science and Engineering Seminar, Norwegian National Technical University (NTNU) (Mar. 2018, Trondheim, Norway).
7. L. W. Martin, Polarization Gradients, Built-in Potentials, Exotic Domain Structures, and Temperature-Stable Responses: Compositionally-graded Ferroelectric Thin Films, Fundamental Physics of Ferroelectrics and Related Materials 2018 (Jan. 2018, Washington, DC).
8. L. W. Martin, The Good, The Bad, and the Ugly – Redefining the Role of Defects Complex-Oxide Thin Films, 2018 Conference on Electronic and Advanced Materials (Jan. 2018, Orlando, FL).
9. L. W. Martin, Emergent and Tunable Toroidal Order and Phase Coexistence in Ferroic Superlattices, 2018 Conference on Electronic and Advanced Materials (Jan. 2018, Orlando, FL).
10. L. W. Martin, Emergent Structures and Properties in Ferroelectric Superlattices, International Symposium on Integrated Functionalities (ISIF) 2017 (Dec. 2017, Delhi, India).
11. L. W. Martin, Defect-based Routes to Control of Order and Properties in Ferroelectric Thin Films, Materials Research Society Fall 2017 Meeting (Nov. 2017, Boston, MA).
12. L. W. Martin, Strain, Defects, and Alloying in BiFeO₃ Thin Films – Towards Structure, Transport, and Magnetism Control, Materials Research Society Fall 2017 Meeting (Nov. 2017, Boston, MA).
13. L. W. Martin, Toroidal Order, Phase Coexistence, Electric-Field Control, and Emergent Phenomena in Oxide Superlattices, IUMRS-ICA 2017 (Nov. 2017, Taipei, Taiwan). [**Keynote**]
14. L. W. Martin, Emergent Structures and Properties in Ferroelectric Thin Films, Materials Science and Technology (MS&T) 2017 (Oct. 2017, Pittsburgh, PA).
15. L. W. Martin, Emergent Phenomena in Ferroic Complex Oxide Thin Films, Department of Materials Science and Engineering Seminar, University of California, Berkeley (Sept. 2017, Berkeley, CA).
16. L. W. Martin, Enabling Emergent Ferroic Order in Functional Complex Oxide Thin Films – Beyond Epitaxial Constraint, 3rd Functional Oxide Thin Films for Advanced Energy and Information Technology (July 2017, Rome, Italy).
17. L. W. Martin, Emergent Structures and Properties in Epitaxial Ferroelectric Thin Films, 8th International Conference on Electroceramics (ICE) 2017 (May 2017, Nagoya, Japan).
18. L. W. Martin, Controlling Emergent Structures and Properties in Epitaxial Ferroelectric Films, 2017 Joint ISAF-ISIF-PFM Conference (May 2017, Atlanta, GA).
19. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films and Nanostructures – Designing Next-Generation, High-Performance Materials, Department of Materials Science and Engineering Colloquium, Case Western Reserve University (Apr. 2017, Cleveland, OH).

20. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films and Nanostructures – Designing Next-Generation, High-Performance Materials, Department of Materials Science and Engineering Colloquium, University of Connecticut (Mar. 2017, Storrs, CT).
21. L. W. Martin, Emergent Phenomena in Functional Complex Oxide Thin Films and Nanostructures, Advanced Light Source Seminar (Mar. 2017, Berkeley, CA).
22. L. W. Martin, Emergent Structures and Properties in Ferroic Thin Films - Unlocking New States of Matter, SLAC THz-UED Science Workshop (Mar. 2017, Palo Alto, CA).
23. L. W. Martin, Emergent Phenomena at Oxide Interfaces: Electronic Reconstruction Induced Ferromagnetism in a Polar Antiferromagnetic Insulator, ACerS Electronic Materials and Applications 2017 (Jan. 2017, Orlando, FL).
24. L. W. Martin, Understanding and Controlling Emergent Ferroic Order in Functional Complex Oxide Thin Films and Nanostructures – Designing Next-Generation, High-Performance Materials, TBSI Materials Symposium (Jan. 2017, Shenzhen, China).
25. L. W. Martin, Controlling Polarization Profiles, Mesostructures, and Field-Driven Response in Ferroelectric Thin Films, 13th International Symposium on Ferroic Domains and Micro- to Nano-scopic Structures (ISFD-13) (Oct. 2016, Vancouver, British Columbia, Canada).
26. L. W. Martin, The Limits of Perfection in Functional Materials, Emerging Research Opportunities in Ceramics Workshop, National Science Foundation (Sept. 2016, Washington D.C.).
27. L. W. Martin, Complex Phase Evolution and Coexistence in Polar Vortex Structures, International Workshop on Topological Structures in Ferroic Materials 2016 (Aug. 2016, Dresden, Germany).
28. L. W. Martin, Domain Walls and Magnetism in BiFeO₃ – Redux, International Conferences on Modern Materials and Technologies (CIMTEC) 2016 (June 2016, Perugia, Italy).
29. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films and Nanostructures – Designing Next-Generation, High-Performance Materials, Condensed Matter Seminar, Department of Physics, University of California, Santa Cruz (June 2016, Santa Cruz, CA).
30. L. W. Martin, Exotic Phenomena in Inhomogeneously-Strained Ferroelectric Films, Triennial Review for Center for Nanophase Materials Sciences, Oak Ridge National Laboratory (April 2016, Oak Ridge, TN).
31. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films and Nanostructures – Designing Next-Generation, High-Performance Materials, Energy Storage and Distributed Resources Division (ESDR) Seminar, Lawrence Berkeley National Laboratory (April 2016, Berkeley, CA).
32. L. W. Martin, Domain Structure and Properties in Inhomogeneously-Strained Ferroelectric Thin Films, American Physical Society (APS) 2016 March Meeting (March 2016, Baltimore, MD).
33. L. W. Martin, Beyond Conventional Lattice Mismatch Epitaxy: Routes to Enhanced Functionality via Inhomogeneous Strain in Films, 2016 Lawrence Symposium on Epitaxy (Feb. 2016, Scottsdale, AZ).
34. L. W. Martin, Pyroelectric and Electrocaloric Effects in Epitaxial Oxide Thin Films, Taking the Temperature of Phase Transitions in Cool Materials, The Royal Society, London (Feb. 2016, London).
35. L. W. Martin, Functional Complex Oxide Thin Films and Nanostructures – Designing Next-Generation, High-Performance Materials, Berkeley Nanosciences and Nanoengineering Institute Seminar Series, University of California, Berkeley (Jan. 2016, Berkeley, CA).
36. L. W. Martin, Designing Novel Functionalities in Dielectric and Ferroelectric Materials – Compositionally-Graded Thin Film Heterostructures, ACerS Electronic Materials and Applications 2016 (Jan. 2016, Orlando, FL).
37. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films: Designing Next-Generation, High-Performance Materials, National Renewable Energy Laboratory (Dec. 2015, Golden, CO).
38. L. W. Martin, Domain Walls and Magnetism in BiFeO₃ – Redux, Materials Research Society 2015 Fall Meeting (Dec. 2015, Boston, MA).
39. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films: Designing Next-Generation, High-Performance Materials, Department of Physics and Astronomy, Shanghai Jiao Tong University (Oct. 2015, Shanghai, China).

40. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films: Designing Next-Generation, High-Performance Materials, Department of Physics, Fudan University (Oct. 2015, Shanghai, China).
41. L. W. Martin, New Horizons in Complex Oxide Thin-Film Growth: Designing Next-Generation, High-Performance Materials, AVS Topical Conference, 2015 Shanghai Thin Film Conference (Oct. 2015, Shanghai, China). [**Keynote**]
42. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films: Designing Next-Generation, High-Performance Materials, Department of Physics, Shanghai University (Oct. 2015, Shanghai, China).
43. L. W. Martin, Controlling Next-Generation Ferroic Materials: Domains, Domain Walls, and Ferroic Order in Complex Oxide Thin Films, Advanced Light Source 2015 User Meeting (Oct. 2015, Berkeley, CA).
44. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films: Designing Next-Generation, High-Performance Materials, Department of Materials Science and Engineering, Carnegie Mellon University (Oct. 2015, Pittsburgh, PA).
45. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films – Designing Next-Generation, High Performance Materials, Advanced Light Source Seminar (Sept. 2015, Berkeley, CA)
46. L. W. Martin, New Horizons in Complex Oxide Thin-Film Growth: Designing Next-Generation, High-Performance Materials, 20th American Conference on Crystal growth and Epitaxy (ACCGE-20) (Aug. 2015, Big Sky, MT). [**Plenary**]
47. L. W. Martin, Designing Next-Generation, High-Performance Functional Oxides for Advanced Devices, SanDisk Corporation (July 2015, Milpitas, CA).
48. L. W. Martin, Advanced Thermal-to-Electrical Pyroelectric Energy Conversion, 2015 Modern Topics in Energy and Power Technical Meeting (July 2015, Army Research Laboratory, Adelphi, MD).
49. L. W. Martin, Advanced Piezoelectric, Pyroelectric, and Ferroelectric Materials for Powering Smart Systems, Body Sensors Network Conference – Intelligent Energy Management for Wearable System (June 2015, Boston, MA).
50. L. W. Martin, Nano- and Macro-Scale Probes of Strain Gradient and Flexoelectric Effects on the Crystal and Domain Structure and Properties of Ferroelectric Thin Films, 2015 Joint ISAF-ISIF-PFM Conference (May 2015, Singapore).
51. L. W. Martin, Professor Hans Schmid – Guide to a Renaissance in Multiferroics and Magnetoelectrics, 2015 Joint ISAF-ISIF-PFM Conference (May 2015, Singapore).
52. L. W. Martin, Understanding Domain Wall Contributions in Ferroic Systems – Exploring Novel Phenomena in both the Low- and High-Field Regimes, International Workshop on Topological Structures in Ferroic Materials (May 2015, Sydney, Australia).
53. L. W. Martin, Designing Next-Generation, High-Performance Materials and Devices – Functional Complex Oxides, Solid State Technology and Devices Seminar, Department of Electrical Engineering and Computer Science, University of California, Berkeley (April 2015, Berkeley, CA).
54. L. W. Martin, Enabling New Functionality: Challenges and Opportunities for Integrating Complex Oxides on Silicon, Workshop on Next Generation Electronics on Silicon – Role of an Academic Silicon Fab (Feb. 2015, Singapore)
55. L. W. Martin, New Horizons for Strain Control of Ferroelectrics: Manipulating Chemistry and Domain Structures for New Phenomena, ACerS Electronic Materials and Applications 2015 (Jan. 2015, Orlando, FL).
56. L. W. Martin, Controlling Advanced Functional Materials – Separating Intrinsic and Extrinsic Effects in Complex Oxides, AVS 61st International Symposium and Exhibition (Nov. 2014, Baltimore, MD).
57. L. W. Martin, Understanding Domain Wall Contributions to Electric Field and Thermal Response in Ferroelectrics, 12th International Symposium on Ferroic Domains and Micro- to Nanoscopic Structures (ISFD-12) (Nov. 2014, Nanjing, China).
58. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films: Designing Next-Generation, High-Performance Materials, Department of Materials Science and Engineering, University of Science and Technology, Beijing (Oct. 2014, Beijing, China).

59. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films: Designing Next-Generation, High-Performance Materials, Institute of Physics, Chinese Academy of Science (Oct. 2014, Beijing, China).
60. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films: Designing Next-Generation, High-Performance Materials, Department of Physics Colloquium, Tsinghua University (Oct. 2014, Beijing, China).
61. L. W. Martin, Controlling Complex Oxide Chemistry to Enable Advanced Dielectric, Ferroelectric, and Electronic Applications, The International Union of Materials Research Societies International Conference of Young Researchers on Advanced Materials (IUMRS-ICYRAM) (Oct. 2014, Haikou, China).
62. L. W. Martin, Epitaxial Routes to Control Domain Structures and Properties of Ferroelectric Materials – New Horizons for Strain Control, XXIII International Materials Research Congress 2014 (Aug. 2014, Cancun, Mexico).
63. L. W. Martin, New Modalities for and Understanding of Strain Control of Properties in Ferroelectric Thin Films, Materials Research Society 2014 Spring Meeting (Apr. 2014, San Francisco, CA).
64. L. W. Martin, Effect of Growth Induced (Non)Stoichiometry on Interfacial Conductance in $\text{LaAlO}_3/\text{SrTiO}_3$, American Physical Society March Meeting 2014 (March 2014, Denver, CO).
65. L. W. Martin, *Light-Absorption, Photovoltaic Effects, and Photocatalytic Activity in “Metallic” Oxide Heterostructures*, International Conference on Hydrogen Production 2014 (Feb. 2014, Fukuoka, Japan).
66. L. W. Martin, Towards Artificial Photosynthesis: The Role of Complex Oxide Materials Science in the Harnessing the Power of the Sun, Kyushu University, Hydrogen Production Division Seminar (Jan. 2014, Fukuoka, Japan).
67. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films, Department of Physics Colloquium, Indiana University (Jan. 2014, Bloomington, IN).
68. L. W. Martin, Next Generation Energy Materials: Challenges in Controlling Complex Oxides for Advanced Applications, International Conference on Processing and Manufacturing of Advanced Materials, THERMEC’ 2013 (Dec. 2013, Las Vegas).
69. L. W. Martin, Epitaxial Strain in Functional Oxide Thin Films Version 2.0: Engineering Strain Gradients, Materials Research Society 2013 Fall Meeting (Dec. 2013, Boston, MA).
70. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films, School of Applied and Engineering Sciences Colloquium, Harvard University (Oct. 2013, Cambridge, MA).
71. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films, Department of Physics, University of Nebraska, Lincoln (Oct. 2013, Lincoln, NE)
72. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films, Department of Materials Science and Engineering Seminar, Drexel University (Aug. 2013, Philadelphia, PA).
73. L. W. Martin, The Science and Engineering of Functional Complex Oxide Thin Films, Department of Materials Science and Engineering Colloquium, University of Illinois, Urbana-Champaign (Aug. 2013).
74. L. W. Martin, The Science and Engineering of Magneto-Electro-Thermal Responses of Materials, International Conference & Exhibition on Advanced & Nano Materials (ICANM 2013), NSF Professional Development Workshop (Aug. 2013, Quebec, Canada).
75. L. W. Martin, Flexoelectric Effects in Compositionally Graded Ferroelectric Thin Films – Towards Strain 2.0, IEEE International Symposium on Applications of Ferroelectrics Meeting (July 2013, Prague, Czech Republic).
76. L. W. Martin, Surfaces and Interfaces in Complex Oxide Electronics, Physical Electronics Conference 2013 (June 2013, Raleigh, NC).
77. L. W. Martin, Probing and Controlling Thermal-Electrical Responses in Exotic Ferroelectric Thin Films, Department of Physics Colloquium, West Virginia University (April 2013, Morgantown, WV).
78. L. W. Martin, Fundamentals of Complex Oxide Thin-Film Growth and Characterization, Invited Tutorial, American Physical Society March Meeting 2013 (March 2013, Baltimore, MD).

79. L. W. Martin, Domain Structures and Switching in Ferroelectric Thin Films, 12th International Workshop on Piezoresponse Force Microscopy and Nanoscale Electromechanics: Theory, Techniques, and Applications, Oak Ridge National Laboratory (March 2013, Oak Ridge, TN).
80. L. W. Martin, *"Mining" Existing Materials for Useful Functionalities – A Material Maker's Perspective*, National Science Foundation, Materials By Design II Workshop (Feb. 2013, Arlington, VA).
81. L. W. Martin, The Science and Engineering of Thermal-Electrical Responses of Materials, Department of Materials Science and Engineering Colloquium, University of California, Berkeley (Feb. 2013, Berkeley, CA).
82. L. W. Martin, Enhanced Photocatalysis from Anomalous Light Absorption in the Correlated Oxide Metal SrRuO₃, Materials Research Society 2012 Fall Meeting (Dec. 2012, Boston, MA).
83. L. W. Martin, Unraveling Chemical Complexity at Complex Oxide Heterointerfaces – A Case Study of LaAlO₃/SrTiO₃, 8th Annual Minnesota Nanotechnology Workshop (Nov. 2012, Minneapolis, MN).
84. L. W. Martin, Understanding the Evolution of Complex Phase Structures in Highly-Strained BiFeO₃ Thin Films, Royal Society of London, Kavli Center Meeting on Magnetoelectrics (Sept. 2012, Milton Keynes, England).
85. L. W. Martin, Next Generation Energy Materials: Challenges in Controlling Complex Oxides for Advanced Applications, AVS Prairie Chapter, Materials for Energy Meeting (Sept. 2012, Urbana, IL) [**Plenary**].
86. L. W. Martin, Engineering New Phenomena and Functionality in Complex Oxide Thin Film Heterostructures, SPIE Nanoscience + Engineering, Nanoepitaxy: Materials and Devices (Aug. 2012, San Diego, CA).
87. L. W. Martin, Unraveling the Complex Phase Evolution in Highly-Strained BiFeO₃ Thin Films: Thickness, Temperature, and Chemical-Alloying Evolution, Villa Conference on Complex Oxide Heterostructures (April 2012, Orlando, FL).
88. L. W. Martin and William P. King, Nano-scale Pyro-Electro-Mechanical Electron Source, Extensible X-Ray Systems and Algorithms for Computed Tomography (EXACT), DARPA/MTO Workshop (April 2012, San Deigo, CA).
89. L. W. Martin, Enhanced Thermal-Electrical Responses in Ferroelectric Thin Films, Département de Physique de la Matière Condensée Colloquium, Université de Genève (March 2012, Geneva, Switzerland).
90. L. W. Martin, Engineering Thermal-Electrical Responses in Complex Oxides: Enhanced Dielectric and Pyroelectric Response in Epitaxially Strained Ferroelectric Thin Films, Department of Materials Science and Engineering Colloquium, University of Michigan (Jan. 2012, Ann Arbor, MI).
91. L. W. Martin, Engineering Functional Composites: Large Electromechanical Responses in Highly-Strained BiFeO₃ Thin Films, Composites at Lake Louise (Oct. 2011, Lake Louise, Alberta, Canada).
92. L. W. Martin, Engineering New Functionalities in Materials: Large Electromechanical Responses in Highly-Strained BiFeO₃ Thin Films, Materials Science and Technology 2011 (Oct. 2011, Columbus, OH).
93. L. W. Martin, Engineering Thermal Properties and Response of Epitaxial Oxide Thin Films for Advanced Devices, Workshop on Oxide Electronics (Sept. 2011, Napa, CA).
94. L. W. Martin, Understanding and Manipulating Defects in Complex Oxide Materials – Implications for Properties and Devices, HP Labs Colloquium (Sept. 2011, Palo Alto, CA).
95. L. W. Martin, Engineering Thermal-Electrical Responses in Complex Oxides: Enhanced Dielectric and Pyroelectric Response in Epitaxially Strained Ferroelectric Thin Films, Department of Materials Science and Engineering Colloquium, University of California, Berkeley (Sept. 2011, Berkeley, CA).
96. L. W. Martin, Engineering New Functionalities in Materials: Complex Oxide Thin Films and Nanostructures for Next Generation Devices, CNST Annual Nanotechnology and nPEAP Workshop (May 2011, Urbana, IL).
97. L. W. Martin, William King, and David G. Cahill, Oxide Thin Films for Pyroelectric Energy Conversion, DoD Interagency Advanced Power Group Meeting (May 2011, Washington, D.C.).
98. L. W. Martin, Pathway for Enhanced Electromechanical Response via Strain Engineering in Multiferroic BiFeO₃ Thin Films, Villa Conference on Complex Oxide Heterostructures (April 2011, Las Vegas, NV).

L. W. Martin

99. L. W. Martin, Engineering New Functionalities in Materials: Complex Oxides for Multiferroics, Energy, and Beyond, Department of Materials Science and Engineering Colloquium, North Carolina State University (Feb. 2011, Raleigh, NC).
100. L. W. Martin, Engineering New Functionalities in Materials: Complex Oxides for Multiferroics, Energy, and Beyond, Frederick Seitz Materials Research Laboratory Colloquium Series (Feb. 2011, Urbana, IL).
101. L. W. Martin, Functional Complex Oxide Heterostructures for Energy Conversion, Electronic Materials and Applications 2011, American Ceramic Society (Jan. 2011, Orlando, FL).
102. L. W. Martin, Engineering New Functionalities in Materials: Complex Oxides for Multiferroics, Energy, and Beyond, Department of Materials Science and Engineering Colloquium, Stanford University (Nov. 2010, Palo Alto, CA).
103. L. W. Martin, Multiferroic Heterostructures for Novel Functionalities, Materials Science and Technology 2010 (Oct. 2010, Houston, TX).
104. L. W. Martin, Oxide Materials for Energy Applications, 2010 Gordon Conference in Solid State Studies in Ceramics (Aug. 2010, New London, NH).
105. L. W. Martin, Understanding and Controlling Defects in BiFeO₃, Argonne National Laboratory Workshop on the Analysis and Control of Defects in Complex Oxides (July 2010, Argonne, IL).
106. L. W. Martin, Multifunctional Composites – Engineering New Functionalities with Multiferroics, Composites at Lake Louise (Oct. 2009, Lake Louise, Alberta, Canada) **[Plenary]**.
107. L. W. Martin, Intrinsic and Extrinsic Interfaces in Oxides – Towards Next Generation Nanoelectronics, Center for Integrated Nanotechnologies User's Conference, (Sept. 2009, Santa Fe, NM).
108. L. W. Martin, Multifunctional Oxide Thin Films: Engineering Functionality in Materials, Department of Materials Science and Engineering Seminar, Pennsylvania State University (Feb. 2009, State College, PA).
109. L. W. Martin, Multifunctional Oxide Thin Films: Engineering Functionality in Materials, Department of Materials Science and Engineering Seminar, University of Pennsylvania (Feb. 2009, Philadelphia, PA).
110. L. W. Martin, Multifunctional Oxide Thin Films: Engineering Functionality in Materials, Helios Seminar, Helios Solar Energy Research Center, Lawrence Berkeley National Laboratory (Jan. 2009, Berkeley, CA).
111. L. W. Martin, Multifunctional Oxide Thin Films: Engineering Functionality in Materials, Department of Materials Science and Engineering Seminar, Drexel University, (Jan. 2009, Philadelphia, PA).
112. L. W. Martin, Multifunctional Oxide Thin Films: Engineering Functionality in Materials, Department of Materials Science and Engineering Seminar, University of Illinois, Urbana-Champaign (Jan. 2009, Urbana, IL).
113. L. W. Martin, Multiferroic Physics: Engineering New Functionalities in Materials, Emerging Research Materials for Spin Logic Workshop hosted by International Technology Roadmap for Semiconductors (Nov. 2008, Austin, TX).
114. L. W. Martin, Engineering New Functionalities with Multiferroics: Electrical Control of Magnetism, Materials Science and Technology 2008 (Oct. 2008, Pittsburgh, PA).
115. L. W. Martin, New Functionality with Multiferroic Materials: Electrically Tunable Magnetism. Materials Research Society 2007 Fall Meeting (Dec. 2007, Boston, MA).
116. L. W. Martin, Electric Field Control of Magnetism Using Multiferroics. SSRL/LCLS User's Meeting and Workshop (Oct. 2007, Menlo Park, CA).
117. L. W. Martin, Electrically Tunable Magnetism: Functionality with Multiferroics. 14th Semiconducting and Insulating Materials Conference (May 2007, Fayetteville, AR).
118. L. W. Martin, Investigations of Multiferroic Complex Oxides, Materials Science and Technology (Oct. 2006, Cincinnati, OH).
119. L. W. Martin, Growth and Properties of a New Perovskite Thin Film – PbVO₃. Materials Research Society Spring 2006 Meeting Graduate Student Award Session (April 2006, San Francisco, CA) (Gold Medal Award Winning Talk).

DEPARTMENTAL ACTIVITIES

Teaching

UC Berkeley (July 2014 – Present)

1. MSE 45 (formerly ENG 45) and MSE 45L (formerly ENG 45L) – Properties of Materials (Fall 2015, Fall 2016, Fall 2017)
2. MSE 296A/B (Fall 2017, Spring 2018)
3. MSE 117/217 – Properties of Dielectric and Magnetic Materials (Spring 2017)
4. MSE 104 – Materials Characterization (Spring 2015, Spring 2016)

UIUC (Aug. 2009 – July 2014)

5. MSE 280 – Engineering Materials (Spring 2010, 2011, Fall 2011)
6. MSE 422 – Electrical Ceramics (Fall 2010, Spring 2012, Spring 2013, Spring 2014)
7. MSE 423 – Ceramics Processing Laboratory (Fall 2013)
8. MSE 529 – Hard Materials Seminar (Created course and taught jointly with J. Zuo Fall 2011)
9. MSE 595 – Department Colloquium (Spring 2011, Fall 2011)

Committees and Services

Department

UC Berkeley (July 2014 – Present)

1. Graduate Admissions and Fellowships (Chair - AY2014-2015, AY2015-2016, AY2016-2017)
2. Undergraduate Recruiting Committee (AY2016-2017, AY2017-2018)
3. Preliminary Examination Committee (Phase Diagrams – Jan. 2015, Aug. 2017; Characterization – Aug. 2015, Elect./Mag./Opt. Props. – Jan. 2016, Jan. 201)
4. Undergraduate Curriculum Committee (AY2015-2016, AY2016-2017, AY2017-2018)
5. Academic Affairs and Graduate Curriculum Committee (AY2015-2016, AY2016-2017)
6. 5th Year B.S./M.S. Major Field Advisor (AY2017-2018)

LBNL (July 2014 – Present)

7. Materials Science Division LDRD Review and Selection Committee (Spring 2016, 2017)

UIUC (Aug. 2009 – July 2014)

8. Colloquium Series (Spring 2011, Fall 2011)
9. Curriculum Committee (AY 2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014)
10. Engineering Open House (AY 2009-2010, 2010-2011)
11. Safety Committee (AY 2009-2010)
12. Undergraduate Recruitment (AY 2009-2010, 2010-2011; Head of Committee 2011-2012, 2012-2013, 2013-2014)
13. Graduate Recruitment (AY 2009-2010, 2010-2011)

College

UC Berkeley (July 2014 – Present)

14. Undergraduate Studies Committee (UC Berkeley) (AY 2014-2015, AY2015-2016, AY2016-2017)

UIUC (Aug. 2009 – July 2014)

15. Materials Research Laboratory Facilities Committee (UIUC) (AY 2010-2011, 2011-2012, 2012-2013, 2013-2014)
16. Materials Research Laboratory Safety Committee (UIUC) (Faculty Lead AY 2012-2013, 2013-2014)
17. Materials Research Laboratory Director Five Year Review Committee (UIUC) (Spring 2012)
18. Search Committee, Coordinator of Undergraduate Research (UIUC) (F2013-S2014)

University

UC Berkeley (July 2014 – Present)

19. Non-Ionizing Radiation Safety Committee (UC Berkeley) (S2015-present)
20. GSI Advisory Committee (Graduate Division) (F2017-present)

UIUC (Aug. 2009 – July 2014)

21. Envisioning Future Excellence Workshop (2012)
22. Envisioning Future Excellence, Information and Technology Workshop (2013)
23. University of Illinois, Office of Technology Management Advisory Board (2012-present)

PROFESSIONAL ACTIVITIES

1. Frequent reviewer for ACS Applied Materials and Interfaces, ACS Nano, Acta Materialia, Advanced Functional Materials, Advanced Materials, Applied Physics A, Applied Physics Letters, APL Materials, Applied Surface Science, Chemistry of Materials, Crystal Growth and Design, CrystEngComm, Current Opinions in Solid State and Materials Science, Europhysics Letters, IEEE Journal of Photovoltaics, IEEE Transactions on Magnetics, Journal of Alloys and Compounds, Journal of the American Ceramics Society, Journal of Applied Physics, Journal of Electroceramics, Journal of Materials Chemistry C, Journal of Nanomaterials, Journal of Physical Chemistry, Journal of Physics D – Applied Physics, MRS Proceedings, Materials Chemistry and Physics, Materials Science and Engineering B, Nano Letters, Nanotechnology, Nature, Nature Communications, Nature Materials, NPG Asia Materials, Philosophical Magazine Letters, Physica A and B, Physica Status Solidi A, Physical Chemistry Chemical Physics, RSC Advances, Science, Scientific Reports, Smart Materials and Structures, Solid State Sciences, Surfaces and Coating Technology, Thin Solid Films, and more.
2. Chair, User Executive Committee and Ex Officio Member of Scientific Advisory Board, Center for Nanophase Materials Science (CNMS), Oak Ridge National Laboratory (ORNL) (Jan. 2017 – Jan. 2018)
3. Vice-Chair, User Executive Committee, Center for Nanophase Materials Science (CNMS), Oak Ridge National Laboratory (ORNL) (Jan. 2016 – Jan. 2017)
4. International Advisory Board, International Workshop on Topological Structures in Ferroic Materials (Feb. 2017 – Present).
5. Symposium and Meeting Organizer
 - a. Symposium Organizer, Domain Engineering in Ferroic Systems: From fundamental sciences to novel applications, XIX International Materials Research Congress, August 2010, Cancun, Mexico.
 - b. Focus Topic Organizer, Magnetic Oxide Thin Films Focus Topic, 2011 March Meeting of the American Physical Society, Dallas, TX.
 - c. Symposium Organizer, Multiferroics and Ferroelectrics, 2011 Fall Meeting of the Materials Research Society, Nov. 2011, Boston, MA.
 - d. Symposium Organizer, Nanocomposites, Nanostructures, and Heterostructures of Correlated Oxide Systems, 2012 Spring Meeting of the Materials Research Society, April 2012, San Francisco, CA (co-organized with Japan Society of Applied Physics).
 - e. Symposium Organizer, Domain Engineering in Ferroic Systems, XXI International Materials Research Congress, August 2012, Cancun, Mexico.
 - f. Conference Organizer, Workshop on Oxide Electronics XXI, Sept. 2014, Lake George, NY.
 - g. Conference Organizer, 7th International Conference on Electroceramics, ICE2015, Conference Organizer, May 2015, State College, PA.
 - h. Conference Organizer, CNMS Users Meeting, Aug. 2016, Oak Ridge, TN.
 - i. Symposium Organizer, Epitaxy of Complex Oxides, 21st American Conference on Crystal Growth and Epitaxy (ACCGE-21), July-Aug. 2017, Santa Fe, NM.
 - j. Conference Organizer (Lead), Joint CNMS/SNS User Meeting, Aug. 2017, Oak Ridge, TN.
 - k. Conference Organizer, Workshop on Oxide Electronics XXIV, Sept. 2017, Chicago, IL.
 - l. Program Committee, 2018 Lawrence Symposium on Epitaxy, Feb. 2018, Scottsdale, AZ.
6. Programmatic reviewer for:
 - a. AAAS (INDO-US Science and Technology Forum)
 - b. Academy of Finland
 - c. Army Research Office
 - d. ARPA-E
 - e. Chilean Comisión Nacional de Investigación Científica y Tecnológica (CONICYT)
 - f. Deutsche Forschungsgemeinschaft (German Research Foundation)
 - g. Environmental Molecular Science Laboratory Capability Development Program, Pacific Northwest National Laboratory
 - h. King Abdulaziz University
 - i. Maryland Industrial Partnerships Program (MIPS), Technical Program Review
 - j. National Science Foundation (Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program; Division of Materials Research, Condensed Matter Physics; DMREFs; Office of International Science and Engineering, International Research Fellowship Program; Directorate for Engineering, Civil, Mechanical, and Manufacturing Innovation, Advanced

L. W. Martin

- Manufacturing, Materials Processing and Manufacturing; Directorate for Engineering, Civil, Mechanical, and Manufacturing Innovation, Materials and Surface Engineering; Office of International Science and Engineering; Division of Materials Research, Electronic and Photonic Materials)
- k. Stanford Synchrotron Radiation Lightsource
 - l. Swiss National Science Foundation
 - m. U.S. Department of Energy (Basic Energy Sciences; Early Career Award; Solar Energy Technologies Program, SunShot Initiative; US-India Clean Energy Research and Development Centers; Graduate Student Fellowship Program)
7. Member of the Center for Nanoscale Materials (CNM) at Argonne National Laboratory Proposal Evaluation Board (March 2010 – Aug. 2012)
 8. Member of the Center for Nanoscale Materials (CNM) at Argonne National Laboratory Proposal Evaluation Board (March 2010 – Aug. 2012)
 9. Member of the Center for Nanophase Materials Science (CNMS) at Oak Ridge National Laboratory (ORNL) Review Committee (April 2014 – Present)
 10. Committee Member, Materials Research Society's Discovering Breakthroughs Inside Science (DBIS) Committee (May 2006 – May 2009).
 11. Member, Strategic Programing Planning Subcommittee (SPPS), Materials Research Society (Nov. 2010 – 2011)

GRADUATE AND POSTDOCTORAL ADVISEES

Current Graduate Advisees: Arvind Dasgupta, Abel Fernandez, Ran Gao, Jieun Kim, Eduardo Lupi, Shishir Pandya, Sahar Saremi, Gabriel Velarde, Ruijuan Xu

Current Postdoctoral Advisees: Joshua C. Agar, Zuhuang Chen, Anirban Ghosh, Lei Zhang

Former Students and Postdocs: Joshua C. Agar (Ph.D., 2015), Brent A. Apgar, Christoph Baeumer (M.S., 2013), Eric Breckenfeld (Ph.D., 2014), Anoop R. Damodaran (Ph.D., 2014), Liv Dedon (M.S., 2014), Karthik Jambunathan (Ph.D., 2013), Sungki Lee (Ph.D., 2014), Chen-Wei Liang (PD), Vengadesh Mangalam (PD), Jarrett Moyer (PD), Ruijuan Xu (M.S., 2014) Jialan Zhang (PD) [12 M.S./Ph.D. total; 6 postdoc total in last 5 years]