

Dustin A. Gilbert

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Education

Ph.D., Physics, August 2014, University of California, Davis, California
M.S., Physics, December 2010, University of California, Davis, California
B.S., Physics, June 2008, University of California, Santa Cruz, California; honors thesis, honors in Physics

Experience

Postdoctoral Research Fellow	2014-2016	NIST Center for Neutron Research with Dr. Julie Borchers and Brian Maranville, funded by the NRC Research Associateship Program
Graduate Student Researcher	2009-2014	U.C. Davis Physics Department, with Prof. Kai Liu
Research Intern	2010	Seagate Technology, with Dr. Jan-Ulrich Thiele
Teaching Assistant	2008-09	U.C. Davis Physics Department
Research Assistant	2008-11	Naval Postgraduate School, with Prof. William Maier
Summer Intern	2008	Naval Postgraduate School, organized by California Homeland Security Consortium
Learning Assistant	2007-08	U.C. Santa Cruz Academic Resource Center
Outreach Staff	2005-06, 10-12	U.C. Santa Cruz Physics Department
Technical Assistant	2005	CUBIC Defense Applications

Honors and Awards

- National Research Council Research Associateship Program Postdoctoral Fellowship (2014)
- IEEE Magnetic Society Travel Grant (\$1000) For Intermag 2014 - May 2014
- U. of Maryland NCNR Travel Grant (\$500) - March 2014
- UC Davis Graduate Student Travel Award – December 2013
- 1st Prize Margaret Burbidge Award for Best Experimental Research by a Graduate Student (\$200) – APS Far West Section Meeting, Sonoma, CA November 2013
- Selected Participant of IEEE Summer School on Magnetism – Chennai, India Summer 2012
- UC Davis Graduate Program Fellowship – Winter 2012, Summer 2012
- UC Davis Summer Graduate Student Researcher Award – Summer 2011
- NSF Graduate Student Fellowship Program “Honorable Mention” – 2010
- Academic honors in Physics from UC Santa Cruz - 2008
- Honors Thesis “Design, Modeling, Construction and Testing of a One Meter Parallel Rail Accelerator” - 2008

Research Interests

Properties of nanostructured materials and nanoscale phenomena. Interactions and reversal behavior in hysteretic systems. Topics include structural, magnetic, electrical and thermal properties of nanostructured systems including nanoparticles, wires, continuous and patterned thin-films, e-beam and photolithography defined features, patterned substrates, and nanocomposite materials. Examples include high anisotropy $L1_0$ FePt, magnetic vortices, perpendicular anisotropy, exchange bias, patterned nanomagnet arrays and heterostructured magnetic nanoparticles.

Technical Skills

Fabrication: DC and RF magnetron sputtering, evaporation, electrodeposition (films and template-assisted growth of nanowires). Nanopatterning by e-beam and photolithography, stepper photolithography, direct-write laser photomask writer and design, RIE, and ion milling. Post deposition annealing and RTA. Synthesis of anodized aluminum oxide (AAO) templates.

Characterization: Polarized Neutron Reflectometry (PNR), (polarized) Small Angle Neutron Scattering (SANS), Scanning electron microscopy (SEM), atomic/magnetic force microscopy (AFM/MFM), and x-ray magnetic circular dichroism (XMCD) contrasted transmission microscopy. X-ray diffraction on polycrystalline, oriented and single crystal samples, x-ray reflectivity, and pole figures. Energy dispersive x-ray spectroscopy (EDS). Magnetometry by vibrating sample magnetometer (VSM), alternating gradient magnetometer (AGM), longitudinal, transverse and polar magneto-optical Kerr effect (MOKE) magnetometer, B-H looper, superconducting quantum interference device (SQUID) magnetometer. Magnetization reversal study using the first-order reversal curve (FORC) technique and ΔM measurements. Electrical and spin transport by 4-probe measurements. Experience with neutron scattering

Other: Cryogen (helium and nitrogen) and high temperature furnace experience. Quartz tube-working. Gas absorption/desorption isotherms. Extensive experience with vacuum system maintenance, repair, refurbishment. Simulation and data processing code in OOMMF, C++ and Mathematica. Machine control with Labview. Metal working (machine shop technology) experience. I also am responsible for writing and maintaining the SOPs, training documents and safety records for our lab.

Professional Activity

Member APS, IEEE

Refereed 9 articles for Journal of Applied Physics, and IEEE Transactions on Magnetics

Refereed Journal Publications

1. **D.A. Gilbert**, Li Ye, A. Varea, S. Agramunt-Puig, N. Del-Valle, C. Navau, A. Sanchez, J. F. Lopez-Barbera, K. S. Buchanan, A. Hoffmann, J. Sort, J. Nogues, and Kai Liu "New Reversal Mode in Exchange Coupled Antiferromagnetic/Ferromagnetic Disks", *Submitted*
2. R. K. Dumas, P. K. Greene, **D.A. Gilbert**, Li Ye, C. Zha, J. Åkerman, and Kai Liu "First order reversal curve analysis of magnetization and magnetoresistance", [Phys. Rev. B, 90, 104410 \(2014\)](#)
3. **D. A. Gilbert**, J. W. Liao, L. W. Wang, J. W. Lau, T. J. Klemmer, J. U. Thiele, C. H. Lai, and Kai Liu, "Probing the $A1$ to $L1_0$ Transformation in FeCuPt Using the First Order Reversal Curve Method", [APL. Mater. 2, 086106 \(2014\)](#)
4. L. Ma, **D. A. Gilbert**, V. Neu, R. Schafer, J. G. Zheng, X. Q. Yan, Z. Shi, Kai Liu, and S. M. Zhou, "Magnetization reversal in perpendicularly magnetized $L1_0$ FePd/FePt heterostructures", [J. Appl. Phys. 116, 033922 \(2014\)](#).

5. **D.A. Gilbert**, G.T. Zimanyi, R.K. Dumas, M. Winklhofer, A. Gomez, N. Eibagi, J.L. Vincent, and Kai Liu, "Quantitative Decoding of Interactions in Tunable Nanomagnet Arrays Using First Order Reversal Curves", [Sci. Rep. 4, 4204 \(2014\)](#).
6. J.E. Davies, **D.A. Gilbert**, M. Mohseni, R.K. Dumas, J. Akerman, and Kai Liu, "Reversal mode instability and magnetoresistance in perpendicular (Co/Pd)/Cu/(Co/Ni) pseudo-spin-valves", [Appl. Phys. Lett., 103, 022409 \(2013\)](#).
7. A. Gomez, E. M. Gonzalez, **D. A. Gilbert**, M. V. Milosevic, Kai Liu and J. L. Vicent, "Probing the dynamic response of antivortex, interstitial and trapped vortex lattices on magnetic periodic pinning potentials", [Supercond. Sci. Technol. 26, 085018 \(2013\)](#).
8. **Dustin A. Gilbert**, Liang-Wei Wang, Chih-Huang Lai, Timothy Klemmer, Jan-Ulrich Thiele, Kai Liu, "Tuning magnetic anisotropy in (001) oriented L1₀ (Fe_{1-x}Cu_x)₅₅Pt₄₅ films", [Appl. Phys Lett 102, 132406 \(2013\)](#).

Featured in APL 'Research Highlights', 'Top Stories', and [top 15 most accessed articles in APL, 2013](#). Carried by over 16 popular science news outlets including Eureka Alert, Phys.org, R&D Magazine, and Science Daily.
9. A. Gomez, **D. A. Gilbert**, E. M. Gonzalez, Kai Liu and J. L. Vicent, "Control of dissipation in superconducting films by magnetic stray fields", [Appl. Phys Lett, 102, 052601 \(2013\)](#).
10. R. Brandt, R. Ruckriem, **D. A. Gilbert**, F. Ganss, T. Senn, Kai Liu, M. Albrecht, and H. Schmidt, "Size dependence of the switching characteristics and spin wave modes of single FePt nanocaps", [J. Appl. Phys. 113, 203910 \(2013\)](#).
11. Jeong C. Park, **Dustin A. Gilbert**, Kai Liu, Angelique Y. Louie, "Microwave enhanced silica encapsulation of magnetic nanoparticles", [J. Mater. Chem., 22, 8449 \(2012\)](#).
12. Ray M. Wong, **Dustin Gilbert**, Kai Liu, Angelique Y. Louie, "Rapid Size-Controlled Synthesis of Dextran-Coated, Copper-Doped Iron Oxide Nanoparticles", [ACS Nano, 6, 3461 \(2012\)](#).
13. Elizabeth A Osborne, Tonya Atkins, **Dustin Gilbert**, Susan Kauzlarich, Kai Liu, and Angelique Y Louie "Rapid microwave-assisted synthesis of dextran-coated iron oxide nanoparticles for magnetic resonance imaging", [Nanotechnology 23, 215602 \(2012\)](#).
14. B.F. Valcu, **D.A. Gilbert**, K. Liu, "Fingerprinting Inhomogeneities in Magnetic Recording Media using the First Order Reversal Curve Method", [IEEE Trans. Magn. 47, 2988 \(2011\)](#).
15. R.K. Dumas, **D.A. Gilbert**, N. Eibagi, K. Liu, "Chirality control and vortex manipulation in asymmetric Co dots" [Phys. Rev. B \(Rapid Communications\) 83, 060415\(R\) \(2011\)](#).
16. **D.A. Gilbert**, E. Burks, P. Abellan, R. K. Dumas, Ilke Arslan, T. Felter, and Kai Liu "Low-Density, Highly Porous Pd Nanowire Foams", In Preparation.
17. **D.A. Gilbert**, J. Olamit, R.K. Dumas, Elke Arenholz, Kai Liu, "Multiple Phased Gd_xFe_{1-x}/NiCoO Thin Films with Field-Tunable Exchange Bias", In Preparation.

18. *Bingqing Li, Xuzhao Chai, Sina Moeendarbari, Yaowu Hao, **Dustin A. Gilbert**, Kai Liu, Di Zhang, Gang Feng, Ping Han, X. M. Cheng*, "First order reversal curve study of the dipolar interaction in Ni three-dimensional antidot arrays" In Preparation.
19. Dustin A. Gilbert, J. G. Ramirez, S. Wang, I. K. Schuller, J. de la Venta, Kai Liu "Magnetic reversal in Ni/V₂O₃ bilayer films with strain induced lateral uniaxial anisotropy" In Preparation.
20. Dustin A. Gilbert, Jung-Wei Liao, Brian J. Kirby, Michael Winklhofer, Chih-Huang Lai, Kai Liu "Magnetic Yoking and Enhanced Interactions in Perpendicularly Coupled Hard/Soft Bilayer Films" In Preparation.
21. Dustin A. Gilbert, Brian B. Maranville, Andrew L. Balk, Brian J. Kirby, Peter Fischer, Daniel T. Pierce, John Unguris, Julie A. Borchers, and Kai Liu "Experimental Realization of Artificially Skyrmion Lattices" In Preparation.
22. Dustin A. Gilbert, Thomas Schrefl, Kai Liu, Gergely Zimanyi "Identifying Multidomain Reversal Behavior Using First Order Reversal Curves" In Preparation.
23. "Experimental Investigations of reversibility in the FORC distribution"

Other Publications

1. **D. A. Gilbert** *G.T. Zimanyi, R.K. Dumas, M. Winklhofer, A. Gomez, N. Eibagi, J.L. Vincent, and Kai Liu*, "Distinguishing Nearest Neighbor and Mean Field Interactions in Nanomagnet Arrays Using the FORC Technique", 2014 IEEE International Magnetism Conference Digest, FH-05 (2014)
2. **D. A. Gilbert**, *Jung-Wei Liao, Liang-Wei Wang, Chih-Huang Lai, Timothy Klemmer, Jan-Ulrich Thiele, Kai Liu*, "Probing the A1 to L10 Transformation in FeCuPt Using the First Order Reversal Curve Method", 2014 IEEE International Magnetism Conference Digest, BB-11 (2014)
3. *Jung-Wei Liao, Unai Atxitia, **Dustin Gilbert**, Richard Evans, Brian Kirby, Kai Liu, Roy Chantrell, Chih-Huang Lai*, "Magnetization reversal modes in L10 FePt based exchange spring magnets with magnetically soft layers of varied Curie temperature", 2014 IEEE International Magnetism Conference Digest, ES-08 (2014)
4. **D. A. Gilbert and Kai Liu**, "Probing magnetic configurations and interactions in embedded multilayered Co/Pd nanowires", 2011 IEEE International Magnetism Conference Digest, FB-03 (2011).
5. *Jeffrey Colvin, Supakit Charnvanichborikarn, Tom Felter, Chad Flores, Kevin Fournier, **Dustin Gilbert**, Sergei Kucheyev, Kai Liu*, "On Optimizing K-Shell X-ray Conversion Efficiencies with New Nano-structured Laser Targets", Bulletin of the American Physical Society, **56**, 259 (2011)

Invited talks

1. "Traversing the Minor-Loop Landscape with the FORC Technique" **Dustin A. Gilbert**, NIST Center for Neutron Research, Gaithersburg, MD, February 6, 2014.
2. "Tuning magnetic anisotropy in (001) oriented $L1_0$ ($Fe_{1-x}Cu_x$)₅₅Pt₄₅ films" **Dustin A. Gilbert**, Liang-Wei Wang, Timothy Klemmer, Jan-Ulrich Thiele, Chih-Huang Lai, Kai Liu, IEEE Santa Clara Valley Magnetism Society Monthly Meeting, Santa Clara, CA, November 19, 2013.

Contributed Presentations

1. "Tunable Positive/Negative Exchange Bias in $Gd_xFe_{1-x}/NiCoO$ Thin Films" **Dustin Gilbert**, Justin Olamit, Brian J. Kirby, Randy K. Dumas, Elke Arenholz, Kai Liu, American Physical Society March Meeting, San Antonio, TX, March 2-6, 2015
2. "Experimental Realization of Artificial Skyrmion Lattices" **Dustin Gilbert**, Brian Maranville, Andrew L. Balk, Brian J. Kirby, Peter Fischer, Daniel T. Pierce, John Unguris, Julie A. Borchers, Kai Liu, American Physical Society March Meeting, San Antonio, TX, March 2-6, 2015
3. "Magnetic Yoking and Enhanced Interactions in Perpendicular $L1_0$ -FePt based Hard/Soft Bilayers" **D. A. Gilbert**, Jung-Wei Liao, Michael Winklhofer, Chih-Huang Lai, Kai Liu MMM 2014, Honolulu, Hawaii, November 5, 2014
4. "Experimental Realization of Artificial Skyrmion Lattices" **D. A. Gilbert**, Brian Maranville, Brian Kirby, Andrew Balk, John Unguris, Peter Fischer, Julie Borchers, Kai Liu MMM 2014, Honolulu, Hawaii, November 8, 2014
5. "Distinguishing Nearest Neighbor and Mean Field Interactions in Nanomagnet Arrays Using the FORC Technique" **D. A. Gilbert**, G.T. Zimanyi, R.K. Dumas, M. Winklhofer, A. Gomez, N. Eibagi, J.L. Vincent, and Kai Liu, 2014 IEEE International Magnetism Conference, Intermag, Dresden, Germany May 7, 2014.
6. "Probing the $A1$ to $L1_0$ Transformation in FeCuPt Using the First Order Reversal Curve Method" **D. A. Gilbert**, Jung-Wei Liao, Liang-Wei Wang, Chih-Huang Lai, Timothy Klemmer, Jan-Ulrich Thiele, Kai Liu, 2014 IEEE International Magnetism Conference, Intermag, Dresden, Germany May 5, 2014.
7. "Quantitative Decoding of Interactions in Tunable Nanomagnet Arrays Using First Order Reversal Curves" **D.A. Gilbert**, G.T. Zimanyi, R.K. Dumas, M. Winklhofer, A. Gomez, N. Eibagi, J.L. Vincent, and Kai Liu, MMM 2013, Denver, CO, November 8, 2013.
8. "Multiple Phased $Gd_xFe_{1-x}/NiCoO$ Thin Films with Field-Tunable Exchange Bias", **Dustin A. Gilbert**, Justin Olamit, Randy K. Dumas, Elke Arenholz, Kai Liu, MMM 2013, Denver, CO, November 5, 2013.
9. "Tilted vortex and mixed reversal modes in exchange biased nano-dots and nano-ellipses" **Dustin A. Gilbert**, Li Ye, Kai Liu, A. Varea, S. Agramunt-Puig, N. del Valle, C. Navau, A.

Sánchez, J.F. Lopez-Barbera, Kristen S. Buchanan, Axel Hoffmann, Jordi Sort, Josep Nogues
MMM 2013, Denver, CO, November 7, 2013.

10. "Tuning magnetic anisotropy in (001) oriented L10 (Fe_{1-x}Cu_x)₅₅Pt₄₅ films" **Dustin Gilbert**,*
Liang-Wei Wang, Timothy Klemmer, Jan-Ulrich Thiele, Chih-Huang Lai, Kai Liu, American
Physical Society Far West Section Meeting, Sonoma, CA, November 2, 2013.

***Received Margaret Burbidge award for Best Experimental Research by a Graduate Student.**

11. "Tailoring anisotropy in (001) oriented (Fe_{1-x}Cu_x)₅₅Pt₄₅ films" **Dustin Gilbert**, Liang-Wei
Wang, Timothy Klemmer, Jan-Ulrich Thiele, Chih-Huang Lai, Kai Liu, American Physical
Society March Meeting 2013, Baltimore, MD, March 19, 2013.
12. "Magnetization Reversal in Graded Anisotropy Co/Pd Nanodots" **Dustin A. Gilbert**, Greene,
Peter K., Lai, Chih-Huang, Liu, Kai, MMM 2011, Scottsdale, AZ, November 2, 2013.
13. "Probing magnetic configurations and interactions in embedded multilayered Co/Pd nanowires"
D.A. Gilbert, K. Liu, INTERMAG 2011, in Taipei, Taiwan, April, 28, 2011.
14. "Fingerprinting Inhomogeneities in Magnetic Recording Media using the First Order Reversal
Curve Method" B.F. Valcu, **D.A. Gilbert**, K. Liu, INTERMAG 2011, in Taipei, Taiwan, April,
27, 2011.
15. "Quantitative evaluation of magnetic interactions in arrays of elliptical nanomagnets" **D.A.
Gilbert**, R.K. Dumas, Michael Winklhofer, N. Eibagi, K. Liu, 55th Annual Magnetism and
Magnetic Materials (MMM) conference, 2010, Atlanta, GA, November 17, 2010.
16. "Chirality control via double-vortex nucleation and coalescence in asymmetric Co dots" **D.A.
Gilbert**, R.K. Dumas, N. Eibagi, K. Liu, 55th Annual Magnetism and Magnetic Materials
(MMM) conference, 2010, Atlanta, GA, November 17, 2010.
17. "Design, Modeling, Construction and Testing of a One Meter Parallel Rail Accelerator", **Dustin
Gilbert**, Dave Belanger, Poster Presentation, Jack Baskin Undergraduate Research Poster
Symposium, University of California at Santa Cruz, Santa Cruz, CA, June 05, 2008.
18. "Design, Modeling, Construction and Testing of a One Meter Parallel Rail Accelerator", **Dustin
Gilbert**, Dave Belanger, Society of Physics Students Regional Zone (18) Meeting – CA, NV, HI
- University of California at Santa Cruz, Santa Cruz, CA, May 03, 2008.

Presentations given by others

1. "Magnetometry-based order parameter to probe the A1 to L10 transformation in HAMR media"
Invited, **Dustin A. Gilbert**, *Kai Liu*, INTERMAG, Beijing, China, 2015
2. "(001) Oriented L10 FeCuPt for Heat-Assisted Magnetic Recording" Invited, *Kai Liu*, American
Physical Society March Meeting, San Antonio, TX, March 2-6, 2015

3. "FORC Evidence for Splitting of the Magnetostructural Transition in Fe_{1+y}Te " *Miles Frampton*, John Crocker, **Dustin Gilbert**, Kai Liu, Rena Zieve, Genda Gu, American Physical Society March Meeting, San Antonio, TX, March 2-6, 2015
4. "(001) Oriented $L1_0$ FeCuPt for Heat-Assisted Magnetic Recording", Invited, **Dustin A. Gilbert**, *Kai Liu*, Chinese Physical Society Fall Meeting, Harbin, China, September 14, 2014.
5. "Comparing conventional and transport FORC: a $L1_0$ FeCuPt case study" June W. Lau, **Dustin A. Gilbert**, Virgil Provenzano, Kyle B. Strich, Jung-Wei Liao, Chih-Huang Lai, Kai Liu, MMM 2014, Honolulu, Hawaii, November 4, 2014
6. "Temperature-dependent domain-wall assisted reversal in $L1_0$ FePt based exchange spring magnets with soft magnetic layers of varied Curie temperature" Jung-Wei Liao, Unai Atxitia, **Dustin A. Gilbert**, Brian J. Kirby, Richard F. Evans, Sheng-Chieh Liao, Kai Liu, Roy W. Chantrell, Chih-Huang Lai, MMM 2014, Honolulu, Hawaii, November 4, 2014
7. "FORC Theory of Permanent Magnets" Gergely Zimanyi, **Dustin A. Gilbert**, Kai Liu, Michael Winklhofer, MMM 2014, Honolulu, Hawaii, November 7, 2014
8. "(001) Oriented $L1_0$ FeCuPt for Heat-Assisted Magnetic Recording" Invited, **Dustin A. Gilbert**, Jung-Wei Liao, Liang-Wei Wang, June Lau, Timothy J Klemmer, Jan-Ulrich Thiele, Chih-Huang Lai, *Kai Liu*, Seagate University Conclave, Fremont, CA, Aug. 14, 2014
9. "Artificial skyrmion lattice: magnetic structure with neutrons" *B. B. Maranville*, **D. A. Gilbert**, B. J. Kirby, J. A. Borchers, Kai Liu, American Conference on Neutron Scattering, Knoxville, TN, June 1-5, 2014
10. "Magnetization reversal modes in $L1_0$ FePt based exchange spring magnets with magnetically soft layers of varied Curie temperature", *Jung-Wei Liao*, Unai Atxitia, **Dustin Gilbert**, Richard Evans, Brian Kirby, Kai Liu, Roy Chantrell, Chih-Huang Lai, 2014 IEEE International Magnetism Conference, Intermag, Dresden, Germany May 5, 2014
11. "First order reversal curve study of the dipolar interaction in Ni three-dimensional antidot arrays" *Bingqing Li*, Xuzhao Chai, Sina Moeendarbari, Yaowu Hao, **Dustin A. Gilbert**, Kai Liu, Di Zhang, Gang Feng, Ping Han, X. M. Cheng, March Meeting, Denver, CO, March 3, 2014
12. "Tuning magnetic anisotropy in (001) oriented $L1_0$ $(\text{Fe}_{1-x}\text{Cu}_x)_{55}\text{Pt}_{45}$ films", Invited, **D. A. Gilbert**, L. W. Wang, T. J. Klemmer, Jan-Ulrich Thiele, Chih-Huang Lai, and *Kai Liu*, Annual Conference on Magnetism and Magnetic Materials, Denver, CO, November 5, 2013.
13. "Anisotropic behavior in CaFe_2As_2 under uniaxial pressure" *Miles Frampton*, Adam Dioguardi, **Dustin Gilbert**, Rena Zieve, APS Western Regional Meeting 2013, Sonoma, CA, November 1, 2013.
14. "Reversal mode instability and magnetoresistance in perpendicular (Co/Pd)/Cu/(Co/Ni) pseudo-spin-valves", Invited, J.E. Davies, **D.A. Gilbert**, M. Mohseni, R.K. Dumas, J. Akerman, and *Kai Liu*, ALS Users Meeting 2013, Berkeley, CA, October 9, 2013.

15. "Synthesis of Low Density Metallic Nanowire Network" *Edward Burks*, Chad Flores, **Dustin Gilbert**, Kai Liu, Thomas Felter, Supakit Charnvanichborikarn, Sergei Kucheyev, Jeffery Colvin, APS March Meeting 2013, Baltimore, MD, March 21, 2013.
16. "Low temperature across-spacer coupling in [Co/Pd]/Cu/[Co/Ni] spin valves with perpendicular magnetic anisotropy" *Joseph E. Davies*, **Dustin Gilbert**, Majid Mohseni, Randy K. Dumas, Johan Åkerman, Kai Liu, Joint Intermag-MMM meeting, 2013, Chicago, IL, November 18, 2013.
17. "Magnetic Vortices: Chirality Control and Interplay with Exchange Bias", **Invited**, *Kai Liu*, R. K. Dumas, **D. A. Gilbert**, N. Eibagi, C.P. Li, I. V. Roshchin, T. Gredig, and I. K. Schuller, 60th Spring Meeting of the Japanese Society of Applied Physics, Atsugi, Kanagawa, Japan, March 29, 2013.
18. "Probing Graded Perpendicular Anisotropy with Polarized Neutron Reflectometry", **Invited**, P. K. Greene, **D. A. Gilbert**, B. J. Kirby, J. A. Borchers, J. W. Lau, R. D. Shull, Chih-Huang Lai, J. Osten, J. Fassbender, J. E. Davies, M. R. Fitzsimmons, G. T. Zimanyi, and *Kai Liu*, American Conference on Neutron Scattering, Washington, DC, June 25, 2012.
19. "Magnetization Reversal in Nanostructures with Graded Perpendicular Anisotropy", **Invited**, P. K. Greene, **D. A. Gilbert**, B. J. Kirby, J. A. Borchers, J. W. Lau, Chih-Huang Lai, J. Osten, J. Fassbender, J. E. Davies, M. R. Fitzsimmons, and Kai Liu, NordicSpin'12, 3rd Nordic Workshop on Spintronics and Nanomagnetism, Varberg Kurort, Sweden, April 25, 2012.
20. "Magnetization Reversal in Nanostructures with Graded Perpendicular Anisotropy", **Invited**, P. K. Greene, **D. A. Gilbert**, B. J. Kirby, J. A. Borchers, J. W. Lau, Chih-Huang Lai, J. Osten, J. Fassbender, J. E. Davies, M. R. Fitzsimmons, and Kai Liu, Materials Research Society Spring Meeting, San Francisco, California, April 10, 2012.
21. "Exchange-coupled Fe/FePt network" *Ju-Cheng Hsiao*, Yen-Chun Huang, Liang-Wei Wang, **Dustin Gilbert**, and Kai Liu, Chih-Huang Lai, MMM 2011, Scottsdale, AZ, November 3, 2013.
22. "Magnetic reversal characteristics of L1₀-FePt dots" *Jung-Wei Liao*, Ju-Cheng Hsiao, **Dustin Gilbert**, Yen-Chun Huang, Hao-Cheng Hou, Liang-Wei Wang, I-Yun Liu, Kai Liu, and Chih-Huang Lai, MMM 2011, Scottsdale, AZ, November 1, 2013.
23. "Shape dependent magnetization dynamics in single FePt nanomagnets" *Rebekah Brandt*, Christoph Brombacher, **Dustin Gilbert**, Philipp Krone, Fabian Ganss, Tobias Senn, Kai Liu, Manfred Albrecht, Holger Schmidt, MMM 2011, Scottsdale, AZ, October 31, 2013.
24. "Chirality control and vortex manipulation in nanomagnets", **Invited**, Randy K. Dumas, **Dustin A. Gilbert**, Nasim Eibagi, Thomas Gredig, Chang-Peng Li, Ivan K. Schuller, and *Kai Liu*, Physics at the Nanoscale, Madrid, Spain, October 19, 2011.
25. "On Optimizing K-Shell X-ray Conversion Efficiencies with New Nano-structured Laser Targets" *Jeffery Colvin*, Supakit Charnvanichborikarn, Thomas Felter, Chad Flores, Kevin Fournier, **Dustin Gilbert**, Sergei Kucheyev, Kai Liu, APS/DPP11, Salt Lake City, UT, November 16, 2011.

26. Chirality control and vortex manipulation in nanomagnets”, **Invited**, *Kai Liu*, Randy K. Dumas, **Dustin A. Gilbert**, and Nasim Eibagi’ The Nineteenth Annual International Conference on COMPOSITES/NANO ENGINEERING (*ICCE - 19*), Shanghai, China, July 26, 2011.
27. “Chirality control and vortex manipulation in asymmetric Co dots”, **Invited**, R. K. Dumas, **D. A. Gilbert**, N. Eibagi, T. Gredig, Chang-Peng Li, I. K. Schuller, and *Kai Liu*, American Physical Society March Meeting, Dallas, Texas, March 22, 2011.
28. “Chirality control and vortex manipulation in asymmetric Co dots”, *R.K. Dumas*, **D.A. Gilbert**, N. Eibagi, K. Liu, MMM-INTERMAG, Washington D.C., Jan 20 2010.
29. “Easily Built Augmented Railgun: Design and tests”, **Dustin Gilbert**, Kathryn Brookshier and *William B. Maier II*, DOD Innovative S&T ERMG Workshop, San Antonio, TX, September 8-10, 2009.