

Katherine Aidala

Director of the Fimbel Maker & Innovation Lab

Professor of Physics

Mount Holyoke College

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Appointments

2021 - present Kennedy-Shelkunoff Professor of Physics
2017 - present Founding Director of the Fimbel Maker & Innovation Lab
2012 - 2019 Chair of Physics Department
2017 - present Professor of Physics, Mount Holyoke College
2012 - present Adjunct Professor of Physics, University of Massachusetts, Amherst
2012 - 2017 Associate Professor of Physics, Mount Holyoke College
2009 - 2010 Visiting Scientist, Massachusetts Institute of Technology
2006 - 2012 Clare Boothe Luce Assistant Prof. of Physics, Mount Holyoke College

Education

Harvard University *Cambridge, MA*
Ph.D. in Applied Physics, 2006
Advisor: Robert M. Westervelt

Yale University *New Haven, CT*
B.S. in Applied Physics and Psychology (double major), 2001
Advisor: Robert Schoelkopf (applied physics)

Awards

Fellow of the American Physical Society (2020)
American Physical Society Prize for a Faculty Member for Research in an Undergraduate Institution (2020)
Meribeth E. Cameron Faculty Award for Scholarship from Mount Holyoke College (2016)
40 under 40: Professors who Inspire, from Nerdwallet (2015)
Presidential Early Career Award for Scientists and Engineers (PECASE) (2010)
National Science Foundation CAREER Award (2010)
Cottrell Scholar Award from the Research Corporation for Science Advancement (2009)

P-C Shen, Y. Lin¹, C. McGahan, C. Su, A-Y Lu, X. Ji, X. Wang, H. Wang, N. Mao, Y. Guo, J-H Park, Y. Wang, J Li, X. Ling, K.E. Aidala, T. Palacios, and J. Kong, "Healing of donor defect states in monolayer molybdenum disulfide transistors," *Nature Electronics*, 5(1), 28-36 (2022).

Y. Lin, P.-C. Shen, C. Su, A.-S. Chou, T. Wu, C.-C. Cheng, J.-H. Park, M.-H. Chiu, A.-Y. Lu, H.-L. Tang, M. M. Tavakoli, G. Pitner, X. Ji, C. McGahan, X. Wang, Z. Cai, N. Mao, J. Wang, Y. Wang, W. Tisdale, X. Ling, K. E. Aidala, V. Tung, J. Li, A. Zettl, C.-I. Wu, Jing Guo, H. Wang, J. Bokor, T. Palacios, L.-J. Li, J. Kong, "Contact Engineering for High-Performance N-Type 2D Semiconductor Transistors," *Proceedings of the IEEE International Electron Devices Meeting (IEDM)*, 2021.

W-M Ju, J. Bickel, N. Pradhan, K.E. Aidala, M.T. Tuominen, "Reversing the circulation of ferromagnetic nanodisks with a local circular field," *Nanotechnology*, 31 115205 (2020)

J.E. Bickel⁺, K.E. Aidala, "Phase Diagram of 360-degree Domain Walls in Magnetic Rings," *IEEE Transactions on Magnetics*, 55:7, 2301006 (2019).

J.P. Moscatello, C.V. Castaneda*, A. Zaidi*, M. Cao*, O. Usluer, A.L. Briseno, K.E. Aidala, "Time-resolved Klevin probe microscopy to study population and depopulation of traps in electron or hole majority organic semiconductors," *Organic Electronics*, **41**, 26 (2017).

F.I. Kaya*, A. Sarella, D. Wang, M. Tuominen, K.E. Aidala, "Nucleation and interactions of 360 degree domain walls on planar ferromagnetic nanowires using circular magnetic fields." *AIP Advances*, **6**, 055025 (2016).

F.I. Kaya*, A. Sarella, D. Wang, M. Tuominen, K.E. Aidala, "Packing 360 degree domain walls of identical circulation on planar ferromagnetic nanowires with notches using circular magnetic fields." *AIP Advances*, **6**, 056408 (2016).

N. Pradhan, M.T. Tuominen, K.E. Aidala, "Polarization dependent switching of asymmetric nanorings with a circular field." *AIP Advances*, **6**(1) 015302 (2016).

J.E. Bickel, M. Khan*, K.E. Aidala, "A multi-level single-bit storage device." *Journal of Applied Physics*, **115**(17), 17D511 (2014)

J.E. Bickel, S.A. Smith, K.E. Aidala, "The creation of 360 degree domain walls in ferromagnetic nanorings by circular applied magnetic fields," *Journal of Applied Physics*, **115**(17), 17D135 (2014)

H. Xu*, A.E. Murdaugh, W. Chen, K.E. Aidala, M.A. Ferguson, E.M. Spain, M.E. Nunez. "Characterizing Pilus-Mediated Adhesion of Biofilm-Forming *E. coli* to Chemically Diverse Surfaces Using Atomic Force Microscopy." *Langmuir*, **29**(9) 3000 (2013).

S. Paydavosi, K.E. Aidala, P. Brown, G. Supran, P. Hashemi, J.L. Hoyt, V. Bulović. "Detection of charge storage on molecular thin films of Tris(8-hydroxyquinoline) Aluminum (Alq_3) by Kelvin force microscopy: A candidate system for high storage capacity memory cells." *Nano Letters*, **12**(3) 1260 (2012).

A. Goldman*, A.S. Licht*, Y. Sun*, Y. Li*, N.R. Pradhan, T. Yang, M.T. Tuominen, K.E. Aidala, "Multiple 360° domain wall switching in thin ferromagnetic nanorings in a circular magnetic field." *Journal of Applied Physics*, **111**(7), 7D113 (2012)

- M.J. Panzer, K.E. Aidala, V. Bulović. “Contact printing of colloidal nanocrystal thin films for hybrid organic/quantum dot optoelectronic devices.” *Nano Reviews*, **3**, 16144 (2012).
- N.R. Pradhan, A.S. Licht*, Y.Li*, Y. Sun*, M.T. Tuominen, K.E. Aidala. “Switching of $\pm 360^\circ$ domain wall states in a nanoring by an azimuthal Oersted field.” *Nanotechnology* **22** (2011) 485705
- T. Yang, N.R. Pradhan, A. Goldman*, A.S. Licht*, Y.Li*, M. Kemei*, M.T. Tuominen, K.E. Aidala. “Manipulation of magnetization states of ferromagnetic nanorings by an applied azimuthal Oersted field.” *Applied Physics Letters*, **98**, 242505 (2011).
- C.E. Packard, K.E. Aidala, S. Ramanan, V. Bulović, “Patterned removal of molecular organic films by diffusion.” *Langmuir*, **27**(15), 9073 (2011).
- K.E. Aidala, M.J. Panzer, P.O. Anikeeva, J.E. Halpert, M.G. Bawendi, V. Bulović. “Morphology of contact printed colloidal quantum dots in organic semiconductor films: Implication for QD-LEDs.” *Physica Status Solidi C*, **8**(1), 120 (2011).
- M.J. Panzer, K.E. Aidala, P.O. Anikeeva, J.E. Halpert, M.G. Bawendi, V. Bulović. “Nanoscale morphology revealed at the interface between colloidal quantum dots and organic semiconductor films.” *Nano Letters*, **10**(7), 2421 (2010).
- C.B. Volle, M.A. Ferguson, K.E. Aidala, E.M. Spain, M.E. Núñez. “Spring constants and adhesive properties of native bacterial biofilm cells measured by atomic force microscopy.” *Colloids and Surfaces B: Biointerfaces*, **67**, 32-40 (2008).
- C.B. Volle, M.A. Ferguson, K.E. Aidala, E.M. Spain, M.E. Núñez. “Quantitative changes in the elasticity and adhesive properties of *E. coli* ZK1056 prey cells during predation by *Bdellovibrio bacteriovorus* 109J.” *Langmuir*, **24**(15), 8102 (2008).
- K.E. Aidala, R.E. Parrott, T. Kramer, E.J. Heller, R.M. Westervelt, M.P. Hanson, A.C. Gossard. “Imaging coherent magnetic focusing.” *Nature Physics*, **3**, 464 (2007).
- K.E. Aidala, R.E. Parrott, E.J. Heller, R.M. Westervelt. “Imaging electrons in a magnetic field.” *Physica E*, **34**, 409 (2006).
- E.J. Heller, K.E. Aidala, B.J. LeRoy, A.C. Bleszynski, A. Kalben, R.M. Westervelt, K.D. Maranowski, and A.C. Gossard. “Thermal averages in a quantum point contact with a single coherent wave packet.” *Nano Letters*, **5**(7), 1285 (2005).
- B.J. LeRoy, A.C. Bleszynski, K.E. Aidala, R.M. Westervelt, A. Kalben, E.J. Heller, S.E.J. Shaw, K.D. Maranowski, A.C. Gossard. “Imaging electron interferometer”, *Physical Review Letters*, **94**, 126801 (2005).
- A. Bleszynski, K. Aidala, B. LeRoy, R. Westervelt, E. Heller, K. Maranowski, A. Gossard. “Imaging electron interferometer.” *Physics of Semiconductors: 27th International Conference on the Physics of Semiconductors*, July 2004, AIP Conference Proceedings **772**, 1461 (2005).

Publications

R.M. Westervelt, M.A. Topinka, B.J. LeRoy, A.C. Bleszynski, K. Aidala, S.E.J. Shaw, E.J. Heller, K.D. Maranowski, A.C. Gossard. "Imaging electron waves." *Physica E*, **24**, 63 (2004).

T.R. Stevenson, F.A. Pellerano, C.M. Stahle, K. Aidala, R.J. Schoelkopf. "Multiplexing of radio-frequency single electron transistors." *Applied Physics Letters*, **80**(16), 3012 (2002).

T.R. Stevenson, F.A. Pellerano, C.M. Stahle, K. Aidala, R.J. Schoelkopf. "Wavelength division multiplexing scheme for radio-frequency single electron transistors." *AIP Conference Proceedings*, **605**(1), 289 (2002).

Education and Diversity Articles

K.E. Aidala, N. Baker, R. Feldman, P. Klemperer, S. Mensing, A. St. John. "Empowering the Liberal Arts Student: Tech for All," *International Journal of Academic Makerspaces and Making* (2021).

K.E. Aidala, S. Mensing, K. Camp. "From Conception to Construction: Designing an Inclusive Liberal Arts Makerspace," *Proc. of International Symposium on Academic Makerspaces (ISAM 2019)* (2019).

K.E. Aidala, S. Mensing, B. Rotundo, A. St. John. "Makerspace Student Worker Training Course for Inclusive Mentoring," *Proc. of International Symposium on Academic Makerspaces (ISAM 2019)* (2019).

K.E. Aidala, "Making and Maker Culture in the Liberal Arts and Sciences," in K. Dharamsi and J. Zimmer *Liberal Education and the Idea of the University: Arguments and Reflections on Theory and Practice* (2018).

K.E. Aidala, N. Baker, R. Feldman, P. Klemperer, S. Mensing, A. St. John. "Empowering the Liberal Arts Student: Tech for All," *Proc. of International Symposium on Academic Makerspaces (ISAM 2017)* (2017).

K. Aidala, "Short in Academe," *Inside Higher Ed*, December 18 (2014). <https://www.insidehighered.com/views/2014/12/18/essay-being-short-person-academe>

Grants “RUI: Time-Resolved Point Kelvin Probe Force Microscopy for Non-Traditional Semiconductors”
Source: National Science Foundation
Amount: \$368,817 Award Period: September 2017 - August 2020
Subaward from the Center for Integrated Quantum Materials at Harvard
Source: National Science Foundation
Amount: \$291,810 Award Period: October 2013 - September 2023
“Increased capacity for mentoring Mount Holyoke undergraduates with a post doctoral research associate”
Subaward from the Center for Integrated Quantum Materials at Harvard
Source: National Science Foundation
Amount: \$173,797 Award Period: Oct 1 2020 - Sept 30 2021
“The next generation AFM for the next generation of undergraduate students at Mount Holyoke College”
Subaward from the Center for Integrated Quantum Materials at Harvard
Source: National Science Foundation
Amount: \$150,000 Award Period: July 1 2020 - June 30 2021
“MRI: Acquisition of a multi chamber hybrid organic/inorganic thin film deposition system
Source: NSF ECCS-1229028
Amount: \$374,617 Award Period: October 2012 - September 2014
“Collaborative Proposal: Physics of Ferromagnetic Nanostructures in a Circular Field”
Source: National Science Foundation
Amount: \$310,000 Award Period: September 2012 - August 2015
“CAREER: Local Charge, Polarization, and Transport of Nanocrystal Quantum Dot Solid State Structures using Scanning Probe Microscopy”
Source: National Science Foundation
Amount: \$400,000 Award Period: May 2010 - April 2015
“Collaborative Proposal: Physics of Ferromagnetic Nanorings in an External Azimuthal Field”
Source: National Science Foundation
Amount: \$300,000 Award Period: September 2009 - August 2012
Subaward from the Materials Research Science and Engineering Center on Polymers at the University of Massachusetts, Amherst
Source: NSF MRSEC (DMR-0820506)
Amount: \$125,664 Award Period: September 2008 - August 2014
Subaward from the Center for Hierarchical Manufacturing at the University of Massachusetts, Amherst
Source: NSF NSEC (CMMI-1025020)
Amount: \$150,000 Award Period: April 2011 - March 2016
“Imaging and Manipulation of Magnetic Nanostructures for Functional Nanosystems”
Source: NSF NSEC (CMMI-0531171) at the University of Massachusetts
Amount: \$85,000 Award Period: April 2008 - March 2011
“Investigation and Control of Magnetic Nanorings using a Scanning Probe Microscope”
Source: Research Corporation
Amount: \$45,000 Award Period: Dec 2008 - Nov 2010

Within Mount Holyoke:

- **Founding Director of the Fimbel Maker & Innovation Lab.** In 2015, oversaw the transformation of the media lab to a makerspace. Led the development of programming, coursework, and outreach on campus that led to a \$3.5M renovation of an 8,000 sq feet facility that opened in January 2019. Led interdisciplinary group and interfaced with the architects to design the facility. Continuing to purchase equipment, develop policies, and increase the programming and reach of Fimbel Lab.
- Planning and Budget Committee (2017 - 2021); Financial Review Group (2020-21)
- Academic Priorities Committee (2010 - 2014, Chair for two years)
Major Accomplishment: new graduation requirements for the college
- Engineering Committee (2008 - present, chair since 2011)

Beyond Mount Holyoke:

- Founded **SciTech Café** in September, 2012. <http://www.scitechcafe.org>. We bring scientists into an informal setting to talk with the public, holding monthly meetings at a local restaurant. Typical attendance is about 100 people.
- Guest on WHMP's *The Bill Newman Show*, discussing science and promoting SciTech Café's next event.
- Serve on external departmental review committees and as promotion reviewer
- Regular **panelist and guest for women in physics** and women in science organizations and general career workshops
- Attended the 2012 Project Kaleidoscope Summer Leadership Institute for STEM faculty (July 2012); Attended the RCSA Cottrell Scholar Collaborative Academic Leadership Training (2019)
- **Committee of Visitors** for Division of Materials Research, NSF (2011)
- Attended the **Workshop for New Physics and Astronomy Faculty** in College Park, MD (2006).

Standard Physics Curriculum

Physics 110: Force, Motion and Energy

First semester of the introductory sequence to physics, with calculus. Uses “think-pair-share” methodology with in-class concept questions.

Physics 201: Electromagnetism and Circuits

Second semester of the introductory sequence to physics, with calculus. Uses “think-pair-share” methodology with in-class concept questions.

Physics 308: Analog Electronics

Laboratory focused electronics course. Implemented new curriculum that uses pre-class assignments to motivate discussion at the beginning of each three hour meeting. The rest of the class time is spent on lab work.

Physics 336: Advanced Quantum Mechanics

Second semester of undergraduate quantum mechanics

Physics 326: Statistical Mechanics and Thermodynamics

Co-taught with the chemistry department’s thermodynamics course

Physics 290/390: Advanced Laboratory Practicum

Brings together students pursuing independent research, covering topics like how to do a literature search, read journal articles, write an abstract, and give a presentation.

Physics 295/395: Independent Study

I regularly supervise undergraduates doing independent work in my research lab, mentoring 2 - 10 students each semester. Mentored 58 undergraduates.

Additional Courses

First Year Seminar: Women and Gender in Science

Seeks to answer, “Why are women under-represented in science?” by exploring relevant literature taken mostly from social science articles and reviews.

First Year Seminar: Science in the Media

A current events look at present day scientific research and other newsworthy science and technology stories. We discuss the process of science (e.g. peer review, conferences) and bring in many guests to talk about news within their own expertise. Presentation skills are emphasized.

Fundamentals of Maker Culture

Students are asked to reflect on their own learning processes as they work through a curriculum that teaches how to be an inclusive mentor. Biweekly projects using tools and supplies in the Fimbel Maker & Innovation Lab provide hands-on experiences that encourage students to think about their own mindsets and emotional responses to learning new and potentially intimidating tools and techniques.

*Research
Talks*

- “Studying charge trapping in organic semiconductors using time resolved Kelvin Probe Force Microscopy,” Katherine Aidala, Physics Department Seminar (invited), Williams College, Williamstown, MA, September 16, 2022. *invited*
- “Time-resolved Kelvin probe force microscopy to study population and depopulation of traps in organic semiconductors” Northumbria University, Newcastle, UK (2022) *invited*
- “Time-resolved Kelvin probe force microscopy to study population and depopulation of traps in organic semiconductors” Durham University, Durham, UK (2022) *invited*
- Katherine Aidala, J.P. Moscatello, C.V. Castaneda, A. Zaidi, M. Cao, O. Usluer, A.L. Briseno, “Time-resolved Kelvin probe microscopy to study population and depopulation of traps,” Gordon Research Conference on Electronic Processes in Organic Materials, Barga, Italy (2022), contributed poster presentation
- “Scanning Probe Microscopy: A versatile tool for nanoscale science”, Center for Integrated Quantum Materials Summer School, Cambridge, MA (2022)
- “Prize for a Faculty Member for Research in an Undergraduate Institution,” American Physical Society’s March Meeting (2021) (virtual) *invited*
- “Scanning Probe Microscopy: A versatile tool for electrical, mechanical, and magnetic measurements,” University of Puget Sound, Seattle, WA (2020) *invited*
- “Scanning Probe Microscopy: A versatile tool for electrical, mechanical, and magnetic measurements,” Bowdoin College, ME (2020) *invited*
- “Observing real time charge motion with time resolved point Kelvin probe microscopy,” Asylum Research Atomic Force Microscopy Workshop, University of Massachusetts Amherst, September, 2019. *invited*
- “Using the atomic force microscope to probe electron behavior beneath the surface,” New England Society for Microscopy Fall Symposium, University of Massachusetts, Amherst, November 2019 *invited*
- “Atomic Force Microscopy: A versatile tool in nanoscience.” K. Aidala. Summer Student Seminar, Amherst College (2016). *invited*
- “Electrical, Mechanical, and Magnetic measurements using Scanning Probe Microscopy.” K. Aidala. New England Society for Microscopy Fall Meeting, Northboro, MA (2015). *invited*
- “Atomic Force Microscopy: A versatile tool in nanoscience.” K. Aidala, Summer research student seminar at Amherst College, (2016). *invited*
- “Scanning Probe Microscopy: A versatile tool for electrical, mechanical and magnetic measurements,” Colorado School of Mines Materials Science Department, February 5, 2015. *invited*
- “Ferromagnetic Nanostructures in a Local Circular Field,” University of Michigan Condensed Matter Physics Seminar, November 25, 2014. *invited*
- “Imaging charge motion in non-traditional semiconductors,” Smith College Physics Seminar, April 17, 2015. *invited*
- “Manipulating Magnetic States in Nanorings: The future of Data Storage?” Physics Department Seminar, Wellesley College, October 2013. *invited*
- “Manipulating Magnetic States with a Local Circular Magnetic Field.” Tohoku-Harvard Joint Workshop, Sendai, Japan, January 2013. *invited*
- “Introduction to Scanning Probe Microscopy,” a series of three talks. Japan Women’s University, Tokyo, Japan, January, 2013. *invited*

*Research
Talks*

“Probing charge and current in nanocrystal quantum dots with atomic force microscopy.” 244th American Chemical Society National Meeting, Philadelphia, PA August 2012. *invited*

“Atomic Force Microscopy: A versatile tool in nanoscale science.” Physics Department Seminar, Ithaca College, Ithaca, NY (2012). *invited*

“Ferromagnetic Nanostructures in a Local Circular Field.” Solid State Seminar, Yale University, New Haven, CT (2012). *invited*

“Characterization of thin films and nanostructures with scanning probe microscopy.” U.S. China Grantees Meeting and Young Researchers Collaboration Workshop, San Francisco, CA (2011). *invited*

“Measuring and manipulating magnetic nanorings with the atomic force microscope.” Physics Seminar, Denison University, Granville, OH (2011). *invited*

“Scanning probe microscopy of electromagnetic fields: Magnetic nanorings and PbS quantum dot arrays.” Physics Colloquium, Clark University, Worcester, MA (2010). *invited*

“Sticky, Squishy Cells.” Physics Seminar, Wellesley College, Wellesley, MA (2009). *invited*

“Elasticity and Adhesion of Native Bacterial Biofilm Cells using AFM.” Squishy Physics Seminar, Harvard University, Cambridge, MA (2009). *invited*

“The Scanning Probe Microscope: A versatile tool for nanoscience.” Physics seminar, Kenyon College, Gambier, OH (2008). *invited*

“Scanning Probe Microscopy: From living cells to quantum electrons.” Physics Colloquium, Wake Forest University, Winston-Salem, NC (2007). *invited*

“Imaging Electron Motion in a Two-Dimensional Electron Gas with Scanning Probe Microscopy.” Physics seminar, Amherst College, Amherst, MA (2007). *invited*

“Imaging electrons in a two-dimensional electron gas in a magnetic field.” Frontiers of Nanoscale Science and Technology, Tokyo, Japan (2007) *invited*

“Imaging electron focusing.” American Physical Society March Meeting, Baltimore, MD (2006), *invited*

“The scanning probe microscope in nanoscience.” Physics seminar, Mount Holyoke College, South Hadley, MA (2006). *invited*

“Imaging electron flow and interference in a two-dimensional electron gas.” Physics seminar, Boston University, Boston, MA (2005). *invited*

“Imaging electron motion with scanning probe microscopy.” Applied physics seminar, BBN Technologies, Cambridge, MA (2005). *invited*

“Imaging Electron Flow in a Two-Dimensional Electron Gas.” With A. Bleszynski. UC Santa Barbara, Applied Physics Colloquium (2003). *invited*

“Designing a makerspace for liberal arts students: programming, staffing, and the physical space” AAC&U Transforming STEM Education, Arlington, VA, (November, 2022) (poster)

“Designing a makerspace for liberal arts students: programming, staffing, and the physical space” STEM Education Institute, University of Massachusetts, Amherst September, 2022 (invited)

American Physical Society Annual Leadership Meeting, Invited Panelist on Broadening Our Community, Jan 27 2022

“Why Aren’t More Women in Science?” University of Puget Sound, Seattle, WA (2020)

“Why Aren’t More Women in Science?” Bowdoin College, ME (2020)

Diversity and Inclusion Panel, International Symposium on Academic Makerspaces, New Haven, CT (2019) invited panelist

K. Aidala, S. Mensing, B. Rotundo, and A. St. John, “Makerspace Student Worker Training Course for Inclusive Mentoring,” International Symposium on Academic Makerspaces, New Haven, CT (2019)

K. Aidala, K. Camp, S. Mensing, “From conception to construction: Design of an inclusive liberal arts makerspace,” International Symposium on Academic Makerspaces, New Haven, CT (2019)

K.E. Aidala, N. Baker, R. Feldman, P. Klemperer, S. Mensing, A. St. John. “Empowering the Liberal Arts Student: Tech for All,” Proc. of International Symposium on Academic Makerspaces (ISAM 2017), 2017.

“Gender Bias and Leadership,” MHC Shakti Program, Mumbai, India, 2017. *invited* Conference for Undergraduate Women in Physics, Rochester Institute of Technology, January 2018, *plenary speaker*.

“The Inclusive Liberal Arts,” Liberal Education Conference, Mount Royal University, Calgary, Canada (2017). *keynote address*

Panelist and breakout session leader at the Conference for Undergraduate Women in Physics at the Ohio State University in January, 2016. *invited*

“A physics educator at a women’s college,” The Center for Education Integrating Science, Mathematics, and Computing, Georgia Institute of Technology, April 10, 2015. *invited*

“Why Aren’t More Women in Science, and is Physics Different?” American Association of Physics Teachers Summer Meeting, Minneapolis, MN, July 29, 2014. *invited*

“Why aren’t more women in science?” National Renewable Energy Lab, February 4, 2015. *invited*

“Why aren’t more women in science?” Smith College She is a Scientist series, October 20, 2014. *invited*

“Why aren’t more women in science?” Japan Women’s University, Tokyo, Japan, January 2013. *invited*

“Why aren’t more women in science?” Hayden Planetarium, New York, NY, August 2012. *invited*

- Public Talks* “Probing Materials at the Nanoscale,” MHC Alumnae Club of Britain, September 23, 2014, London, UK. *invited*
- “Why aren’t more women in science?” SciTech Café, March 23, 2015, Amherst Brewing Company. *invited*
- “How to wear pink when you’re short,” Amherst Live Winter Show, January 17, 2015, Kirby Theater, Amherst College. (An 18 minute prepared monologue addressing being a short, woman physicist.) *invited*
- “Science on Screen”: Introduction to the movie, “Fantastic Voyage,” addressing medical applications of nanoscience, May 2014, Amherst Cinema, Amherst, MA. *invited*
- “Bits & Bytes: The Future of Data Storage.” SciTech Café, February 24, 2014, Amherst Brewing Company. *invited*
- “Seeing at the Nanoscale.” SciTech Café, Amherst Brewing Company, June 2013. *invited*

C. Bogh⁺, A. Osgood*, K. Smith*, X. Zhu*, B. Zank, D. Venkataraman, R. Mackenzie, K. Aidala, A. Arango, "A circuit model approach for donor acceptor solar cells exhibiting disorder" APS March Meeting, Las Vegas, NV (2023)

X. Zhu*, C. McGahan⁺, A. Arango, K. Aidala, "Evidence for an accumulation layer at the donor-acceptor interface in organic solar cells," American Physical Society's March Meeting (2020)

C. McGahan⁺, P. Shen^{#,4}, Y. Lin^{#,4}, A. Cavanagh*, T. Palacios⁴, J. Kong⁴, K. Aidala, "Comparative KPFM measurements on doped monolayer *MoS₂*" American Physical Society's March Meeting (2020)

J.E. Bickel⁺, K.E. Aidala, "Phase Diagram of 360-degree Domain Walls in Magnetic Rings," Joint MMM-Intermag Conference, Washington, DC (2019)

K.E. Aidala, N. Baker, R. Feldman, P. Klemperer, S. Mensing, A. St. John. "Empowering the Liberal Arts Student: Tech for All," International Symposium on Academic Makerspaces, Cleveland, OH (2017).

M. Cao*, J. Moscatello⁺, C. Castaneda*, B. Xue*, O. Uslue^{2#}, A. Briseno², K. Aidala, "Bias stress in PDI-CN2 and P3HT studied with Kelvin Probe Force Microscopy," APS March Meeting, New Orleans, LA (2017).

C. Castaneda*, A. Zaidi*, J. Moscatello⁺, K.E. Aidala, "Real-time charge carrier motion in P3HT studied with Kelvin Probe Microscopy," APS March Meeting, Baltimore, MD (2016).

L. Hoang*, P. Williams*, J. Moscatello⁺, K. Aidala, "The effect of oxidation on charge carrier motion in PbS quantum dot thin films studied with Kelvin Probe Microscopy," APS March Meeting, Baltimore, MD (2016).

A. Sarella⁺, F. I. Kaya*, K. E. Aidala, "Exploring 360 domain walls in ferromagnetic nanostructures using circular magnetic fields," APS March Meeting, Baltimore, MD (2016).

F.I. Kaya*, A. Sarella⁺, D. Wang^{2#}, M. Tuominen², K.E. Aidala, "Packing 360 degree domain walls of identical circulation on planar ferromagnetic nanowires with notches using circular magnetic fields," 13th Joint MMM-Intermag Conference, San Diego, CA (2016).

J. Moscatello⁺, C. Castaneda*, Katherine Aidala, "Charge motion in Poly(3-hexylthiophene-2,5-diyl) studied with scanning probe microscopy," APS March Meeting, San Antonio, TX (2015).

F. Kaya*, A. Sarella⁺, K.E. Aidala, "Nucleation of 360 degree domain walls in a wire using a local circular field," APS March Meeting, San Antonio, TX (2015).

J.E. Bickel⁺, F. Kaya*, K.E. Aidala, "The effect of curvature on domain wall energy in ferromagnetic nanostructures," Magnetism and Magnetic Materials, Honolulu, HI (2014).

M. Shortt*, J. Bickel⁺, M. Khan*, M. Tuominen², K. Aidala, "Single domain wall manipulation in curved nanowires using a mobile, local, circular field," APS March Meeting, Denver, CO (2014).

J.E. Bickel⁺, S. A. Smith, K.E. Aidala. "The creation of 360 degrees domain walls in ferromagnetic nanorings by circular applied magnetic fields.," APS March Meeting, Denver, CO (2014).

- T. Le*, K. Aidala, R. Hayward², “Mechanical Characterization of Photo-crosslinked, Thermoresponsive Hydrogel Thin Films via AFM Nanoindentation,” APS March Meeting, Denver, CO (2014).
- F. Kaya*, J. Bickel⁺, K. Aidala, “Effect of curvature on domain wall motion in elliptical nanorings,” APS March Meeting, Denver, CO (2014).
- J.P. Moscatello⁺, M. Patterson*, A. Davis²⁺, K.R. Carter², K.E. Aidala. “Characterization of charge motion in Poly(3-hexylthiophene) field effect transistors with Scanning Probe Microscopy,” APS March Meeting, Denver, CO (2014).
- J. P. Moscatello⁺, P. Shrestha*, Q. Wang*, K. Aidala, “Scanning probe microscopy measurements of charge in PbS quantum dot (sub)monolayers,” APS March Meeting, Baltimore, MD (2013).
- W. Ju^{2#}, M. Shortt*, M. Khan*, J. Bicke⁺, K. Aidala, M. Tuominen², “Magnetization manipulation in ferromagnetic nanoscale disks,” APS March Meeting, Baltimore, MD (2013).
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