

Colleen Countryman, Ph.D.

Associate Professor of Physics & Astronomy
Ithaca College

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Education

- 2015 Ph.D. **Physics**, specializing in Physics Education Research.
North Carolina State University.

Dissertation: *The Educational Impact of Smartphone Implementation on Introductory Mechanics Laboratory Classes*.

Advisors: Robert Beichner, Ph.D. and Michael A. Paesler, Ph.D.
Available at <https://bit.ly/46MWDUe>
- 2010 M.S. **Mathematics**, specializing in Applied Mathematics.
Virginia Polytechnic Institute.
Master's Thesis: *The Use of Schwarz-Christoffel Transformations in Determining Acoustic Resonances*.
Advisor: Robert C. Rogers, Ph.D.
Available at <http://hdl.handle.net/10919/33933>
- 2008 B.S. **Physics** (*Magna cum Laude* with Honors).
Canisius College (now, Canisius University), Buffalo, NY.
Liberal Arts Honors Thesis: *The Extent to Which Historical Context Affects the Accomplishments of Scientists and Mathematicians after World War II*.
Advisors: H. David Sheets, Ph.D. (Physics) and Tanya Loughead, Ph.D. (Philosophy).
- 2008 B.A. **Mathematics** (*Magna cum Laude* with Honors).
Canisius College (now, Canisius University), Buffalo, NY.

Awards, Recognition, and Scholarships

- Tenure granted at Ithaca College 2025
- Ithaca College Faculty Excellence Award in Teaching 2023
- Best Undergraduate Research Presentation Award received by advisee Mburu, T. for a poster titled “Developing a Simulator and a Game to Aid in Student Understanding of Electric Fields.” (March 15, 2022). American Physical Society (APS) March Meeting in Chicago, IL. 2022
- *Campus Technology* Teaching and Learning Impact Award for MyTech app 2017
- “Thank a Teacher” recipient, honoring NC State faculty who have made a difference in students’ lives (North Carolina State University) 2016
- Outstanding teacher in Physics with “exceptionally high marks” on class evaluations (North Carolina State University) 2016
- Best of *The Physics Teacher*, 2014–2015 (North Carolina State University) 2015
- Best Graduate Student Paper Award at Spring 2015 North Carolina Section American Association of Physics Teachers for “The Educational Impact of Smartphones in Physics Labs” (North Carolina State University) 2015
- The inaugural Outstanding Teaching Assistant Award endowed by Dr. Russell Philbrick (North Carolina State University) 2013
- Best Graduate Student Paper Award at Fall 2012 North Carolina Section American Association of Physics Teachers for “MyTech: Measurements using everyday TECHNOLOGIES” (North Carolina State University) 2012
- University Favorite Faculty Award (Virginia Tech) 2010
- Dr. Robert F. Tidd Award for Distinction in Mathematics (Canisius) 2008
- Most Accomplished Graduating Senior Award in the Physics Department (Canisius) 2008
- Dean’s Scholarship (Canisius) 2004

Research Interests

- Current research interests: physics, physics education research, educational technology, active learning and SCALE-UP learning environments, curricular development, mobile devices, instructional YouTube videos, online instructional tools, classroom uses of generative AI, learning management systems (like Canvas), student response systems (like iClicker), instructional physics labs, gender studies in the sciences, science identities (specifically as they relate to gender and racial identities), introductory physics for life sciences, science education, mathematics education, media literacy education.
- Additional research experiences: numerical analysis, acoustic resonances, applied partial differential equations, optimal control, single-molecule biophysics, fluorescence resonance energy transfer (FRET) techniques, conformal maps, paleontology, biodiversity estimates, stratigraphic correlations, traveling salesman problem, applied mathematics, metrics of binary trees

Professional Memberships

- American Association of Physics Teachers
- Sigma Pi Sigma (Physics) Honor Society
- Pi Mu Epsilon (Mathematics) Honor Society
- Phi Sigma Tau (Philosophy) Honor Society
- American Physical Society
- National Society of Black Physicists
- Society of Physics Students

Teaching Experience

- Associate Professor of Physics & Astronomy (Ithaca College) 2025-present
 - Teach physics classes in active learning formats such as courses in introductory and intermediate physics, such as Introduction to Physics I & II; Classical Fields: Gravity, Electricity, & Magnetism; Classical Mechanics; Thermodynamics.
 - Develop and teach classes of students across all majors-- such as Physics of Music, Science in the Media (an Ithaca College first-year seminar), Foundations of Physics, Physics & Astronomy Learning Assistant Practicum, and a summer “deep dive” course for Songwriter-Singers
 - Mentor research students in Physics Education Research
- Assistant Professor of Physics & Astronomy (Ithaca College) 2017-2025
- Teaching Assistant Professor of Physics (North Carolina State University) 2015-2017
 - Coordinated and managed approximately 15 sections of (calculus-based) Engineering Physics I and II, serving approximately 2,000+ students per year
 - Taught two sections of the course per semester
 - Developed instructional resources for other faculty members teaching these classes
 - Taught “Introduction to Physics Teaching,” a pedagogy course required by undergraduate Learning Assistants (LAs) in the PhysTEC program and all first-year graduate Teaching Assistants (TAs)
 - Coordinated recitation sessions for Engineering Physics I, which utilizes LAs and TAs
 - Mentored undergraduate and graduate students interested in pursuing projects in Physics Education Research
- Private tutor for mathematics and physics 2005-2017
- Ph.D. Candidate, Teaching Assistant, and Physics Education Research Assistant (North Carolina State University) 2010-2015
 - Developed inquiry-based introductory mechanics laboratory experiments, making use of students’ smartphones as data collection devices
 - Instructor of Engineering Physics II: Electricity and Magnetism

- Teaching Assistant for a variety of introductory physics classes including active learning (SCALE-UP) implementations of Engineering Physics I with Professor Robert Beichner and Conceptual Physics for Future Elementary School Teachers
- Substitute lecturer for a variety of introductory physics courses
- Lab manager and WebAssign programmer for three sections of Engineering Physics I labs that were studied in the Physics Education Group's Qualitative Education Research Lab
- Editor of Engineering Physics II Laboratory Manual
- Lead Teaching Assistant for Engineering Physics II and Algebra-Based Electricity and Magnetism Labs
- Instructor for "Physics of Energy," a course in the Duke Talent Identification Program for high school students (Duke University) 2013
- Ph.D. Candidate, Teaching Assistant, and Research Assistant (Virginia Tech) 2008-2010
 - Instructor of Vector Geometry, Differential Calculus, Multivariable Calculus
 - Assisted students with Elementary Calculus with Trigonometry (Precalculus), Linear Algebra, Elementary Calculus with Matrices, Geometry and the Mathematics of Design in the Math Emporium
- Teaching Assistant (Canisius College) 2005-2008
 - Assisted students in Technology in Education, Finite Mathematics, and General Physics Labs
 - Graded assessments in Single Variable Calculus
 - Tutored in the Math Tutoring Center
- Private piano instructor 2002-2008

Research Experience

- Initiated and led a research lab for Physics Education Research at Ithaca College in the development and assessment of mobile apps, educational simulations, and supplementary instructional videos. (Ithaca College) 2019-present

Computational Modeling:

- Analyzing the effectiveness of AI-assisted code for instructional physics simulations (Gianna Marin and Lillian Schick, 2026)
- Creation of 3D models for use in XR environments (Suryash Malviya, 2025-2026; Samuel Smith, 2025)
- Modeling physics phenomena (quantum tunneling and the double-slit experiment) in GeoGebra (Sherzod Ravshanov, 2024-2025)
- Development of an electric field game, an electric field simulation, a YouTube learning-to-code series, and a simulation exploring centrifugal and Coriolis forces; (Ted Mburu, 2019 – 2024, who received Excellence in Research Award from the Physics & Astronomy Department, 2023)
- Development of a simulation exploring orbital mechanics (Mikolaj Konieczny, 2023)
- Development of a simulation exploring centrifugal forces and Coriolis forces (Antara Sen, 2021 – 2022)
- Development of a gravitational field simulation (Eli Robinson, 2020 – 2022)

Supplementary Instructional Videos:

- Production of supplementary instructional “homework help” videos for introductory physics courses (Keely Higgins, 2025-2026; Noah Rosenzweig, 2023)
- Production of astrophysics videos for social media (Liv Puppò, 2024)
- Design of introductory physics “homework help” website (Matthew Weil, 2021 – 2022)

Analysis of PER Initiatives:

- Analysis of standards-based assessments in physics (Emily Leach, 2023)
- Analysis of effectiveness of supplementary instructional videos (Raymond Rogers, 2020 – 2021, who received Outstanding Senior Project Award from the Physics & Astronomy Department, 2021)
- Analysis of effectiveness of electric field simulation and game (Liana Rodelli, 2017 – 2021)

Curricular Development for Music Technology:

- Creating a delay pedal for clarinet performance (Kaitlin Barron, 2025)
 - Creating a 3D-printed flute for a particular keyed performance (Corey Stark, 2025)
- Recipient of an Ithaca College Artificial Intelligence Mini-Grant for Course Integration for “Lessons in the Creation and Ethics of AI-Generated Music” 2025
 - Reviewer for *Physical Review Special Topics: Physics Education Research*, *American Journal of Physics*, and *The Physics Teacher* (Ithaca College, NC State) 2013-present
 - Recipient of Center for Faculty Excellence Summer Grant for Scholarly Work and led research group for Ithaca College’s School of H&S Summer Scholars Program (Ithaca College) Summer 2020-Summer 2023
 - Coordinated and led two undergraduate physics research students to publish a gamified mobile app, an instructional laptop simulation, and a “homework help” website which hosted supplementary instructional videos
 - Guided the assessment of previous iterations of apps with a graduate education research student
 - Led the development of instructional simulations as a recipient of American Physical Society’s Forum on Education Mini-Grant (Ithaca College) Fall 2020
 - Served as an advisory member of an NSF-supported project on “Mapping Fields in Augmented Reality with Personal Mobile Devices” (Ithaca College) 2019-2020
 - Collaborated with faculty in the School of Health Science and Human Performance on a studying “Using 360-Degree Videos for Skill- 2018

Based Learning at Ithaca College,” funded by the Ithaca College President’s Grant (Ithaca College)

- Oversaw the assessment of “Education and Research Laboratory (EaRL) in the Classroom” mini-laboratory experiments for advanced physics majors’ courses (NC State) 2015-2017
- Studied the educational impact of “mathcasts,” brief YouTube videos connecting math and physics concepts (NC State) 2014-2017
- Studied the impact of utilizing students’ smartphones and video analysis software as data collection devices in instructional mechanics labs (NC State and Meredith College) 2013-2017
- Studied educational technologies in physics classes as a research assistant in the Robert Beichner’s Physics Education Research and Design Group (NC State) 2012-2017
- Conducted a study on the impact of pre-class reading quizzes on students in introductory mechanics classes (NC State) 2015
- Studied single-molecule biophysics as a research assistant in Keith Weninger’s laboratory, focusing on an American Cancer Society-funded fluorescence resonance energy transfer project (NC State) 2011-2012
- Research assistant in the computational modeling of acoustic resonances with Robert C. Rogers, Ph.D. (VT) 2008-2010
- Studied biodiversity estimates as a research assistant for an NSF-funded paleontology project with H. David Sheets, Ph.D. (Canisius) 2005-2008

Publications

- Mburu, T. (advised by Countryman, C. L.) “Developing an Interactive Simulation for Non-Inertial Reference Frames.” (2023). *Journal of Undergraduate Reports in Physics*. 2023
<https://pubs.aip.org/aip/jurp/issue/33/1>
- Countryman, C. L. and Mburu, T. “Teaching Electric Fields with a Simulation and Game.” (2023). *The Physics Teacher*. 2023
 Screenshot from the simulation was used for [the cover](#) and it was featured as one of the most read articles of that year.
<https://doi.org/10.1119/5.0072538>
- Rodelli, L., Mburu, T., and Countryman, C. L. “Assessing the Efficacy of a New Online Game and Simulation to Teach Electric Fields.” (2022). *PERC Proceedings*. 2022
<https://www.per-central.org/items/detail.cfm?ID=16264>
- A panel of ten higher education experts, including Countryman, C. L. invited by Perkins-Eastman Associates. *The Learning Futures Project—Imagining Higher Education in 2025*. (2020). 2020
 A [white paper](#) discussing the future of higher education in light of the changes brought about by the global pandemic.
- Countryman, C. L. *Physics Labs for Scientists and Engineers – Mechanics*. (2016). Laboratory curriculum that utilizes students’ personal electronic devices for data collection. Published by WebAssign. 2016
- Countryman, C. L. “The Educational Impact of Smartphone Implementation in Introductory Mechanics Laboratories.” (2015). *PERC 2015 Proceedings*. 2015
<https://doi.org/10.1119/perc.2015.pr.019>
- Countryman, C. L. “Using Mathcasts to Facilitate Student Comprehension of Physical Applications of Math Concepts.” (2015). 2015
ArXiv.
<https://doi.org/10.48550/arXiv.1809.09720>
- Lanz, C. “The Educational Impact of Smartphone Implementation in Introductory Mechanics Laboratory Classes.” (2015). *Electronic Theses and Dissertations at North Carolina State University*. Available at 2015
<http://repository.lib.ncsu.edu/ir/handle/1840.16/10230>
- Countryman, C. L. “Familiarizing Students with the Basics of a Smartphone’s Internal Sensors.” (2014). *The Physics Teacher*. December 2014. 2014
<https://doi.org/10.1119/1.4902204>

- Lanz, C. “The Use of Schwarz-Christoffel Transformations in Determining Acoustic Resonances” (2010). *Electronic Theses and Dissertations at Virginia Tech*. etd-07082010-083729.
<http://hdl.handle.net/10919/33933> 2010
- Lanz, C. (2007). *The Extent to Which Historical Context Affects the Accomplishments of Scientists and Mathematicians after World War II*. Honors Thesis at Canisius College. 2008

Programs, Simulations, Mobile Apps, and Video Tutorials

- Malviya, S. and Countryman, C. “Cyclotron Demo,” “Cross-Product,” “Bar Magnet,” and “Physics Sandbox: Spring Chaos” <https://play.unity.com/en/user/7d78d800-1b68-4cb4-a123-7b555417b0ae> 2026
- Higgins, K. and Countryman, C. “Physics of Music” video tutorial series with problem-solving and introductions to wave phenomena. 2025-2026
https://www.youtube.com/playlist?list=PLgXb6SOLqVGU5IVk_jvTzJ6QLKgQ8Kjp
- Rosenzweig, N. and Countryman, C. “Homework Helpers: PHYS 101 and PHYS 102” video tutorial series for algebra-based introductory physics. 2024
<https://www.youtube.com/playlist?list=PLgXb6SOLqVGV0yZPJzZsWu1L4vcL2XwhC>
and
<https://www.youtube.com/playlist?list=PLgXb6SOLqVGXuGaeNGyFZi6bM6Za3mAQ2>
- Konieczny, M. and Countryman, C. “Orbital Maneuvers Simulation” emphasizing orbital mechanics concepts 2023
<https://icphysweb.z13.web.core.windows.net/OrbitSimulation/src/index2.html>
- Mburu, T., and Countryman, C., “Electric Field Simulation and Game” accepted for publication on Compadre’s Partnership for Integration of Computation into Undergraduate Physics (PICUP). 2022
<https://www.compadre.org/picup/exercises/exercise.cfm?A=EFieldSimGame>
- Mburu, T. and Countryman, C., “Creating an E Field Simulation” video tutorial series. 2022
<https://www.youtube.com/playlist?list=PLgXb6SOLqVGUfTRzqac0xShgAmqjSbynv>
- Mburu, T., Barr, J., and Countryman, C., “Dynamic Electric Field Interactive (DEFI)” electric field game 2021
<https://icphysweb.z13.web.core.windows.net/site/game.html>
- Mburu, T., Barr, J., Turnbull, D., and Countryman, C. “E-Field Simulator” laptop simulation <https://icphysweb.z13.web.core.windows.net/simulation.html> 2020
- Afolabi, Y., Rodelli, L., Barr, J., and Countryman C. “Dynamic Electric Field Interactive” mobile app available in Expo Client App Store. 2019
- Christian, W., Esquembre, F., and Countryman, C. “Mass and Spring Simple Harmonic Oscillator Model” <http://www.compadre.org/portal/items/detail.cfm?ID=14063> 2016
- Christian, W., Countryman, C., and Esquembre, F. “Block Sliding on an Incline Plane Model” <http://www.compadre.org/portal/items/detail.cfm?ID=14054> 2016
- Tredwell, D. and Countryman, C. L. “NCSU MyTech.” (2015). Mobile app available on the iTunes App Store and Google Play Store. 2015
<https://apps.apple.com/jp/app/ncsu-mytech/id1022359361?l=en>

Professional Impact

- Clauhs, M., Abrahams, D., Abrahams, F., “Applications of AI in Higher Education Music Teaching” Submitted for peer-reviewed publication in January, 2026, including a summary and parts of an interview about my AI mini-grant on the creation and ethics of AI-generated music in my Physics of Music class. 2026
- Catalano, Jim. “Meet a Musician: Colleen Countryman” (2026). *Ithaca + CNY Music News*. jimcat.substack.com/p/meet-a-musician-colleen-countryman. Promotes a “Science & Suds: Science of Music” presentation. 2026
- Wunner, K. “Dear Grad... to Bella Scolaro '25 from Colleen Countryman” (2025). *IC News*. <https://www.ithaca.edu/news/dear-grad> 2025
- Barnett, J. “A Triumphant Return: Education Technology Day Is Back at Ithaca College” (2024). *IC News*. <https://www.ithaca.edu/news/triumphant-return> 2024
- Alena, W. “Inspiring Mathematical Exploration: Community Math Day a hit at IC” (2024). *IC News*. <https://www.ithaca.edu/news/inspiring-mathematical-exploration> 2024
- McDermott, L. “Student Research Analyzes Impact of Pilot Foundational Physics Course” (2023). *The Ithacan*. <https://theithacan.org/50525/news/student-research-analyzes-impact-of-pilot-foundational-physics-course/> 2023
- Davis, J. “Two IC Students Win Award at Physics Research Conference” (2023). *The Ithacan*. <https://theithacan.org/47030/news/ic-physics-students-honored-at-physics-research-conference/> 2023
- Collins, G. “Accelerating the Power of Women in Physics: 2023 Conference for Undergraduate Women in Physics co-hosted by Ithaca College and Cornell University” (2023). *IC News*. <https://www.ithaca.edu/news/accelerating-power-women-physics> 2023
- Will, K. “Professors Make Music Together with Local Artist” (2022). *The Ithacan*. <https://theithacan.org/45233/life-culture/ic-features/professors-make-music-together-with-local-artist/> 2022
- Roger, R. “Physics Fun at Home: Professor creates labs that can be completed with common household items” (2020). *IC News*. <https://www.ithaca.edu/news/physics-fun-home> 2020
- Fernandez, M. “Professor Creates App to Make Physics More Accessible to Students” (2017). *The Ithacan*. 2017

- <https://theithacan.org/news/professor-creates-apps-to-make-physics-more-accessible-to-students/>
- O’Neal, S. “Physics App Wins Campus Technology Impact Award” (2017). *NC State DELTA News*. 2017
<https://news.ncsu.edu/2017/08/physics-app-wins-campus-technology-impact-award/>
 - Raths, D. “Bring-Your-Own-Device Transforms Physics Lab” (2017). 2017
Campus Technology.
<https://campustechnology.com/articles/2017/10/25/bring-your-own-device-transforms-physics-lab.aspx>
 - Crabtree, K. “New App is a Game-Changer for NC State Physics Department” (2017). *The Technician*. 2017
http://www.technicianonline.com/arts_entertainment/article_7ff87a78-c815-11e7-87b4-734e7c8d3255.html
 - Lorenzo, G. “The Six Advances in Higher Ed that Are Preparing Students for the Future of Work” (2016). *Fast Company*. MyTech app is featured in an article on “Bringing Your Own Device (BYOD).” 2016
<https://www.fastcompany.com/3057576/the-six-tech-advances-in-higher-ed-that-are-preparing-students-for-the-fu>
 - Thompson, S. “Labs Get Smart” (2016). *NCSU College of Sciences Magazine* and *NCSU College of Sciences Year in Review*. Article features the use of Colleen Countryman’s MyTech app in physics labs. 2016
<https://sciences.ncsu.edu/news/labs-get-smart/>
 - Becker, G. “iPhysics at NC State University” (2016). *Comtorial Blog: Instructional Design and Learning Technologies*. Article features Colleen Countryman’s development and use of several educational technologies. 2016
 - Johnson, L., Adams, B. S., Estrada, V., & Freeman, A. (2016). *2016 NMC Higher Education Horizon Report*. New Media Consortium. 2016
 The *NMC Horizon Report* mentioned Colleen Countryman’s MyTech app in a section on “Bring Your Own Device” (p. 37).
<https://library.educause.edu/resources/2016/2/2016-horizon-report>
 - Oldham, L. C. “MyTech: Taking Physics Beyond the Classroom” regarding Colleen Countryman’s instructional smartphone app development and research (2015). *DELTAwire*. December 9 2015. 2015
<https://delta.ncsu.edu/news/2015/12/09/mytech-taking-physics-beyond-classroom/>
 - Maciel, T. “Smartphones in the Classroom Help Students See Inside the Black Box” regarding, in part, Colleen Countryman’s instructional smartphone app research (2015). *American Physical Society News*. March 2015

2015.

<https://www.aps.org/publications/apsnews/201503/smartphones.cfm>

Keynotes and Invited Talks

- Countryman, C. “Helping Students Become Critical and Ethical Users of Generative AI in Physics” (April 18, 2026). Invited talk at the New York State Sectional American Physical Society Conference (University at Albany, Albany, NY). 2026
- Countryman, C. “Science of Music: The Hidden Physics Behind the Songs We Love” (January 15, 2026). Invited public science talk as part of the “Science & Suds” series at Hopshire Farm and Brewery (Dryden, NY) in collaboration with the Lime Hollow Nature Center. 2026
- Countryman, C. “Lessons in the Creation and Ethics of AI-Generated Music” (May 28, 2025). Invited talk at the Ithaca College AI Mini-Grant Colloquium. 2025
- Countryman, C. L. “Insights from a Woman in Physics: From Writing My First Code to Becoming an Ed Tech Researcher” (March 18, 2025). Invited talk at the Ithaca College Girls Who Code Club meeting. 2025
- Countryman, C. L. “Navigating the Path to Success: Insights from an Assistant Professor at a Primarily Undergraduate Institution” (March 5, 2024). Invited talk at the American Physical Society March Meeting 2024 in Minneapolis, MN. 2024
- Countryman, C. L. “Going the Distance: Mobile Activities in the Time of COVID” (October 28, 2021). Invited talk for Ithaca College’s Provost’s Colloquium: Celebrating Faculty Innovation during the Pandemic 2021
- Countryman, C. L. “The Development and Assessment of Instructional Mobile Apps for Physics Students” (April 1, 2020). Invited talk for the National Society of Physics Students as part of their Virtual Speakers Series. 2020
Archive: <https://www.youtube.com/watch?v=6Kxh-Qifmx4>
- Countryman, C. L. “Developing and Assessing Educational Technologies” (September 24, 2019). Invited colloquium speaker at Colgate University in Hamilton, NY. 2019
- Countryman, C. L. “Miss Frizzle Rides a Gravitational Wave” (May 16, 2018). Keynote speech at the Siskiyou Science Festival in Mount Shasta, CA. 2018
- Countryman, C. L. “Thinking Beyond the Black Box” (February 28, 2018). Invited talk for the STEM Education Group at Cornell University in Ithaca, NY. 2018
- Countryman, C. L. “Thinking Beyond the Black Box” (February, 2018). Invited talk at the session titled “Best Practices in Educational 2018

- Technologies” at the Winter 2018 National American Association of Physics Teachers (AAPT) Meeting in San Diego, CA.
- Klein, P., Bregés, A., Countryman, C. L. “Workshop: iMobile Physics and iPhysics Classroom.” (July 22, 2017). Invited workshop at National AAPT Meeting in Cincinnati, OH. 2017
 - Countryman, C. L., Sridhar, S. “MyTech at the Technology Playground.” (April 21, 2017). Invited showcase at public NCSU State of the Sciences at Hunt Library in Raleigh, NC. 2017
 - Countryman, C. L. “Smartphones in Labs Don’t Need to Be Black Boxes.” (November 12, 2016). Invited talk at the 2016 South Eastern Section of APS in Charlottesville, VA. 2016
 - Countryman, C. L. “Thinking Beyond the Black Box” (November 12, 2016). Invited talk at the Physics Education Session of the 2016 SESAPS Conference at the University of Virginia. 2016
 - Conrad, P., Countryman, C. L., Dorbolo, J., Grant, C., Long, P. “NMC Beyond the Horizon > Learning Spaces.” (July 13, 2016). Panel discussion for NMC: Beyond the Horizon webinar. <https://youtu.be/110IErWsVZI> 2016
 - Countryman, C. L. and Beichner, R. “Workshop on SCALE-UP: Student-Centered Active Learning Environments with Upside-Down Pedagogies” (June 23, 2016). Invited talk at the 2016 QUBES “Lowering the Activation Energy: Making Quantitative Biology More Accessible” Workshop at NC State. 2016
 - Countryman, C. L. “Making Real World Connections in Mechanics Labs Using Smartphones” (April 19, 2016). Invited workshop at the Hawbridge School (Saxapahaw, NC). 2016
 - Countryman, C. L. “An Introduction to Physics Education Research” (April 5, 2016). Invited “lunch talk” for graduate students at NC State. 2016
 - Countryman, C. L., Tredwell, D., and Shen, Y. “Smartphones, Tablets, and Apps, Oh My: How Can We Use ‘Bring Your Own Devices (BYOD)’ to Enhance Teaching and Learning” (March 14, 2016). Invited workshop targeted at the Instructional Design Interest Group (IDIG) at NC State. 2016
 - Countryman, C. L. “Use Smartphones in Physics Labs, and Everybody Wins!” (February 13, 2016). Invited talk at the 2016 Symposium on Horizons in Astronomy and Physics Education (SHAPE) at the University of North Carolina at Chapel Hill. 2016
 - Countryman, C. L. “Women in Physics, and How I Became One” (May 26, 2015). Invited talk at Nardin Academy High School, Buffalo, NY. 2015

- Countryman, C. L. “An Introduction to Physics Education Research” 2015
(March 25, 2015). Invited talk for the Women in Physics group at North Carolina State University.

Contributed Talks, Panels, and Poster Presentations

- Higgins, K., Countryman, C. “The Development of Guiding Principles for Supplementary Instructional Videos” (April 13-15, 2026). Contributed talk at the National Council on Undergraduate Research Conference in Richmond, VA. 2026
- Countryman, C. “Helping Students Become Critical and Ethical Users of Generative AI” (March 26, 2026). Contributed talk during the Teaching and Learning Symposium at Ed Tech Day at Ithaca College. 2026
- Countryman, C. “Touring an Active Learning Environment for Undergraduate Physics Courses” (March 26, 2026). A tour and demonstration of the Ithaca College Performance-Based Physics Laboratory at Ed Tech Day at Ithaca College. 2026
- Adams, A., Countryman, C., Eaton, L., Farrukh, A., McKeon, P., Occhino, B., Wilcox, E. “AI@IC Day of Learning: Panel Discussion with Faculty and Students” (February 19, 2026). Panel discussion moderated by Lance Eaton (Senior Associate Director of AI in Teaching and Learning at Northeastern University) about use and meaning-making with AI in teaching and learning spaces at Ithaca College. 2026
- Countryman, C. “Lessons in the Creation and Ethics of AI-Generated Music” (January 13, 2026). Contributed talk at the International Conference on College Teaching and Learning at Niagara University in Niagara Falls, NY. 2026
- Chen, T., Clauhs, M., Countryman, C., Linskens, J. “From Curiosity to Curriculum: A Tiered Approach to Faculty AI Integration” (November 12, 2025). A virtual “coffee shop chat” panel about AI at the National EDUCAUSE Conference. 2025
- Malviya, S., Smith, S., Countryman, C. “Improving Physics Education through XR Environments” (April 23, 2025). Contributed talk at the Whalen Symposium at Ithaca College, Ithaca, NY. 2025
- Sonrod, E., Countryman, C. “The Assessment of AI Grading Performance in Introductory Physics Courses” (April 23, 2025). Contributed talk at the Whalen Symposium at Ithaca College, Ithaca, NY. 2025
- Malviya, S., Smith, S., Countryman, C. “Improving Physics Education through XR Environments” (March 20, 2025). Contributed talk at Ed Tech Day at Ithaca College, Ithaca, NY. 2025
- Countryman, C. “Touring an Active Learning Environment for Undergraduate Physics Courses” (March 20, 2025). A tour and demonstration of the Ithaca College Performance-Based Physics Laboratory at Ed Tech Day at Ithaca College. 2025

- Malviya, S., Smith, S., Countryman, C. “Improving Physics Education through XR Environments” (March 1, 2025). Poster presentation at the Society of Physics Students Regional Conference “Cosmic Pathways” at City College in New York City, NY. 2025
- Ravshanov, S., Countryman, C. “Modeling Quantum Tunneling and the Double-Slit Experiment in GeoGebra” (March 1, 2025). Poster presentation at the Society of Physics Students Regional Conference “Cosmic Pathways” at City College in New York City, NY. 2025
- Linskens, J., Countryman, C., Kasiri, N., Keller, L., Sirohi, P., Wuest, D. “How AI Is Changing Teaching and Learning” (May 15, 2024). A virtual “coffee shop chat” panel about AI at the EDUCAUSE Conference. 2024
- Sonrod, E., Leibensperger, E., and Countryman, C. “Weather and Climate Impacts on Lake Champlain” (April 11, 2024). A contributed talk at the Ithaca College Whalen Symposium. 2024
- Sonrod, E., Leibensperger, E., and Countryman, C. “Weather and Climate Impacts on Lake Champlain” (April 6, 2024). Poster presentation at the 129th Topical Symposium of the New York State Section of the American Physical Society at University of Albany, NY. 2024
- Countryman, C. “Touring an Active Learning Environment for Undergraduate Physics Courses” (March 21, 2024). A tour and demonstration of the Ithaca College Performance-Based Physics Laboratory at Ed Tech Day at Ithaca College. 2024
- Countryman, C. and Mburu, T. “Designing Instructional Apps and Games with Undergraduate Researchers” (March 21, 2024). A contributed talk in the Teaching & Learning with Technology Symposium at Ed Tech Day at Ithaca College. 2024
- Konieczny, M. (advised by Countryman, C.) “Development of Instructional Physics Simulations for Classical Mechanics.” (March 5, 2024). Poster presentation at the American Physical Society March Meeting 2024 in Minneapolis, MN. 2024
- Konieczny, M. (advised by Countryman, C.) “Development of Instructional Physics Simulations for Classical Mechanics.” (September 15, 2023). Contributed poster at the American Association for the Advancement of Science (AAAS) S-STEM (Scholarships in STEM) Resource and Evaluation Center Conference in Washington, DC. 2023
- Leach, E. (advised by Countryman, C.) “New Physics Course Strategies: Are they effective for students?” (July 27, 2023). Contributed talk at the Ithaca College H&S Summer Scholars Showcase. 2023

- Rosenzweig, N. (advised by Countryman, C.) “PHYS 101 ‘Homework Helper’ Video Series.” (July 27, 2023). Contributed talk at the Ithaca College H&S Summer Scholars Showcase. 2023
- Countryman, C. “Academic Immersion: A Tour of an Active Learning Classroom” (July 20, 2023). A tour of the Performance-Based Physics Laboratory and active learning workshop at Ithaca College for the Upstate New York International Councilor Tour. 2023
- Countryman, C. “Teaching a First-Year Course on Critically Evaluating Science in the Media.” (July 18, 2023). Contributed talk at the American Association of Physics Teachers Summer Conference in Sacramento, CA. <https://aapt-wm.secure-platform.com/a/solicitations/55/sessiongallery/1459> 2023
- Konieczny, M. (advised by Countryman, C.) “Development of Instructional Physics Simulations for Classical Mechanics.” (July 18, 2023). Contributed poster at the American Association of Physics Teachers Summer Conference in Sacramento, CA. 2023
- Konieczny, M. (advised by Countryman, C.) “Development of Instructional Physics Simulations for Classical Mechanics.” (April 14, 2023). Contributed poster at the Consortium for Computing Science in Colleges Northeastern Conference. 2023
- Mburu, T. (advised by Countryman, C.) “Developing an Interactive Simulation for Non-Inertial Reference Frames.” (April 11, 2023). Contributed talk at Ithaca College Whalen Symposium. 2023
- Konieczny, M. (advised by Countryman, C.) “Development of Instructional Physics Simulations for Classical Mechanics.” (April 11, 2023). Contributed poster at Ithaca College Whalen Symposium. 2023
- Countryman, C., van Dam, K., Bhatt, N. “Maintaining a Healthy Work-Life Balance.” (January 22, 2023). Participated in a panel at the Conference for Undergraduate Women in Physics at Ithaca College and Cornell University. 2023
- Mburu, T. and Countryman, C. “Creating an Interactive Simulation for Non-Inertial Reference Frames” (October 6, 2022). Contributed poster at the 2022 Physics Congress (PhysCon) in Washington, D.C. 2022
- Konieczny, M. (advised by Countryman, C.) “H&S Summer Scholars Portfolio Presentation: Development of Instructional Physics Simulations.” (October 1, 2022). Mikolaj was selected to present his Summer Scholars portfolio at Family Weekend. bit.ly/KoniecznyPortfolio 2022
- Mburu, T., Rodelli, L., and Countryman, C. “Assessing the efficacy of a new online game and simulation to teach electric fields” (July 13, 2022). 2022

- Contributed poster at the Physics Education Research Conference in Grand Rapids, MI. [Abstract](#).
- Mburu, T., Sen, A., and Countryman, C. “Creating an Interactive Simulation for Non-Inertial Reference Frames” (July 12, 2022). 2022
Contributed poster in the Technologies session at the American Association of Physics Teachers Summer Conference in Grand Rapids, MI. [Abstract](#).
 - Mburu, T. (advised by Countryman, C.) “Developing a Simulator and a Game to Aid in Student Understanding of Electric Fields.” (April 9, 2022). 2022
Contributed poster at the Rochester Symposium for Physics Students and SPS Zone 2 Conference at the University of Rochester.
 - Mburu, T. (advised by Countryman, C.) “Developing a Simulator and a Game to Aid in Student Understanding of Electric Fields.” (March 15, 2022). APS March Meeting in Chicago, IL. Ted received a Best Undergraduate Research Presentation award. 2022
 - Mburu, T. and Countryman, C. “Gamifying Simulation to Improve Understanding and Attitudes Towards Electric Fields” (July 12, 2022). 2022
Contributed talk in the Best Practices in Educational Technology II session of the American Association of Physics Teachers Summer Conference in Grand Rapids, MI. [Abstract](#).
 - Mburu, T. and Sen, A. (advised by Countryman, C.) “Creating an Interactive Simulation of Rotating Reference Frames” (November 6, 2021). 2021
Contributed talk at National Society of Black Physicists Conference. [Abstract](#).
 - Mburu, T. (advised by Countryman, C.) “H&S Summer Scholars Portfolio Presentation: Developing a Simulator and a Game to Aid in Student Understanding of Electric Fields.” (November 6, 2021). Ted was selected to present his Summer Scholars portfolio at Family Weekend. 2021
<https://bit.ly/MburuPortfolio>
 - Mburu, T. (advised by Countryman, C.) “Gamification of Electric Fields to Improve Students’ Understanding and Engagement.” (July 31, 2021). 2021
Contributed talk at the session on “Examining Student-Side Interactions with Technology” at the Summer 2021 AAPT Virtual Meeting.
 - Rodelli, L. (advised by Countryman, C.) “Assessing the Efficacy of Technological Tools to Teach Electric Fields.” (July 31, 2021). 2021
Contributed talk at the session on “Examining Student-Side Interactions with Technology” at the Summer 2021 AAPT Virtual Meeting.
 - Mburu, T. (advised by Countryman, C.) “Developing a Simulator and a Game to Aid in Student Understanding of Electric Fields.” (November 8, 2020). 2020
Contributed talk at National Society of Black Physicists Conference.

- Rodelli, L. (advised by Countryman, C.) “Analyzing the Impacts of a New Mobile Application on Student Understanding of and Attitudes Towards Electric Fields.” (July 22, 2020). Contributed talk at 2020 Virtual Physics Education Research Conference. 2020
<https://www.underline.io/speakers/2492-liana-rodelli>
- Mburu, T. (advised by Countryman, C.) “Dynamic Simulation to Help with the Understanding of Electric Fields.” (July 20, 2020). Contributed talk at Summer 2020 AAPT Virtual Meeting. 2020
<https://www.underline.io/speakers/2471-ted-mburu>
- Rodelli, L. (advised by Countryman, C.) “Developing and Testing a New Educational App about Electric Fields.” (July 20, 2020). Contributed talk at Summer 2020 AAPT Virtual Meeting. 2020
- Rogers, R., Countryman, C. “Supplemental Homework Help Videos and Their Benefits on Students’ Testing Scores.” (April 30, 2020). Contributed poster at Ithaca College Whalen Symposium. 2020
- Countryman, C. and Barr, J. “Collaboratively Designing an App and Assessing Its Impact in an Introductory Class.” Accepted for a contributed talk at the Teaching and Learning Symposium for Education Technology Day on March 19, 2020 at Ithaca College. Event was cancelled due to pandemic. 2020
- Rodelli, L., Afolabi, Y., Barr, J., Countryman, C. “Building and Testing an App to Aid Student Understanding and Attitudes Regarding Electric Fields.” (November 15, 2019). Poster presentation at the 2019 Sigma Pi Sigma Physics Congress in Providence, RI. 2019
- Countryman, C. L. “Surfing on Gravitational Waves.” (August 1, 2018). Public talk at Longview, a retirement community in Ithaca, NY. 2018
- Sridhar, S., Countryman, C. L. “Investigating Student Motivation and GTA Teaching Beliefs Towards Smartphone Technology.” (July 24, 2017). Contributed talk at National AAPT Meeting in Cincinnati, OH. 2017
- Lee, T., Countryman, C. L. “Spring-Like Behavior of Smartphone Accelerometers.” (April 1, 2017). Poster presentation at NCS-AAPT Meeting in Raleigh, NC. 2017
- Vieyra, R. and Countryman, C. L. “AAPT Webinar: Smartphone Physics for Sensor Based Labs” (December 10, 2016). International round table. 2016
- Sridhar, S. and Countryman, C. L. “Correlating Student Motivation with GTA Teaching Beliefs towards Smartphone Technology” (November 19, 2016). Contributed talk at the 2016 Fall NCS-AAPT Meeting in Asheville, NC. 2016

- Countryman, C. L. “Smartphones in Labs Don’t Need to Be Black Boxes.” 2016
(July 19, 2016). Contributed talk at the 2016 Summer AAPT Meeting in
Sacramento, CA.
- Countryman, C. L., Dangi, S., Pegahan, S., Brzinski, T., Daniels, K., Haase, 2016
D., Hallen, H., Huffman, P., Wang, H., Weninger, K. and Clarke, L.
“Implementation of Mini-Labs to Enhance the Undergraduate Experience
in Experimental Physics” (July 18, 2016). Poster presentation at the 2016
Summer AAPT Meeting in Sacramento, CA.
- Countryman, C. L., Tredwell, D. and Shen, Y. “The MyTech App: BYOD 2016
to Physics Labs” (June 15, 2015). Contributed talk at the 2016 NMC
Summer Conference in Rochester, NY.
- Countryman, C. L. “Understanding How Smartphones Collect Motion 2016
Data in Physics Labs.” (April 16, 2016). Contributed talk at the NCS-
AAPT Meeting at Elon University.
- Runge, J. and Countryman, C. L. “A New Framework to Improve 2016
Problem-Solving Skills.” (April 16, 2016). Poster presentation at the NCS-
AAPT Meeting at Elon University.
- Countryman, C. L., Tredwell, D., Shen, Y. and McCuen, S. “Understanding 2016
How Smartphones Collect Motion Data in Physics Labs” (April 11, 2016).
Poster presentation at the Teaching and Learning Symposium at NC
State.
- Countryman, C. L., Haase, D., Simmons, P., Beichner, R., Blondin, J., 2016
Daniels, K., Riehn, R.. “A Targeted PhysTEC Project: Physics Learning
Assistants at NC State University” (March 12, 2016). Poster presentation
at the 2016 PhysTEC Conference in Baltimore, MD.
- Countryman, C. L. “Making Real World Connections in Mechanics Labs 2015
using Smartphones” (October 17, 2015). Contributed talk at the NCS-
AAPT meeting hosted by Davidson College.
- Countryman, C. L. “MyTech: Using Smartphones in Physics Labs” 2015
(October 28, 2015). Contributed talk at the Bridging the Gap Conference
for K-16 STEM Education at the McKimmon Center.
- Countryman, C. L. “MyTech App: BYOD to Physics Labs” (October 15, 2015) 2015
(October 15, 2015). Contributed talk at the UNC CAUSE Conference in Winston-
Salem, NC.
- Countryman, C. L. “The Effect of Reading Quizzes for Introductory 2015
Physics Courses” (July 29, 2015). Poster presentation at the 2015 AAPT
(American Association of Physics Teachers) Summer Meeting.
- Countryman, C. L. “The Educational Impact of Smartphone 2015
Implementation in Introductory Mechanics Laboratories” (July 29, 2015).

- Contributed talk at the 2015 AAPT (American Association of Physics Teachers) Summer Meeting and poster at the PERC (Physics Education Research Conference) at the University of Maryland.
- Countryman, C. L. “Creating Supplemental Videos to Bridge the Math-Physics Gap” (April 14, 2015). Poster presentation at the Teaching and Learning Symposium at North Carolina State University. 2015
 - Countryman, C. L. “The Educational Impact of Smartphone Implementation in Introductory Mechanics Laboratory Classes” (March 28, 2015). Contributed talk at the Spring 2015 NCS-AAPT meeting hosted by Wake Forest University. 2015
 - Countryman, C. L. “Gender Issues in Physics Education” (January 16, 2015). Leader of Round-Table Discussion at the APS (American Physical Society) Conference for Undergraduate Women in Physics at Duke University. 2015
 - Countryman, C. L., Paesler, M. A., Sams, W. R. “MyTech: Using Smartphones in Physics Labs” (October 28, 2014). Poster presentation at Bridging the Gap Conference on Uniting North Carolina K-16 STEM Education organized by the North Carolina Association for Biomedical Research. 2014
 - Sams, W. R., Countryman, C. L., Paesler, M. A. “Portable Labs and Online TAs in Introductory Physics” (October 28, 2014). Poster presentation at Bridging the Gap Conference on Uniting North Carolina K-16 STEM Education. 2014
 - Countryman, C. L., Paesler, M. A., Sams, W. R. “How I Met Your Motherboard: Integrating Smartphones into Classrooms” (July 30, 2014). Contributed talk at 2014 AAPT (American Association of Physics Teachers) Summer Meeting hosted by the University of Minnesota. 2014
 - Sams, W. R., Countryman, C. L., Paesler, M. A. “Results from eTALK: Effects of Real-Time Distance Labs” (July 30, 2014). Contributed talk at 2014 AAPT (American Association of Physics Teachers) Summer Meeting. 2014
 - Countryman, C. L., Paesler, M. A., Sams, W. R. “MyTech: Using Smartphones in Physics Labs” (July 31, 2014). Poster presentation at 2014 PERC (Physics Education Research Conference) hosted by the University of Minnesota. 2014

***N.B.* Prior to 2014, I published under the name Colleen Lanz.**

- Sams, W. R. and Lanz, C. “eTALK Results: In-Depth Study of Synchronous Distance Labs” (July 31, 2013). Poster presentation at 2014 PERC. 2014
- Sams, W. R. and Lanz, C. “Portable Labs and Smartphones in Introductory Physics Labs” (July 18, 2013). Poster presentation at 2013 PERC (Physics Education Research Conference). 2013
- Foote, K. and Lanz, C. “SCALE-UP Your Teaching without Overhauling Your Classroom!” (April 20, 2013). Workshop presented at Spring 2013 NCS-AAPT meeting hosted by Meredith College, Raleigh, NC. 2013
- Lanz, C. “MyTech: Measurements using everydaY TECHNOLOGIES” (November 17, 2012). Poster presentation at Fall 2012 NCS-AAPT meeting hosted by High Point University, High Point, NC. 2012
- Izard, Z., Lanz, C., Melchin, M., Finney, S. C., Mitchell, C., and Sheets, H. D. (2008, March). *Effects of Varying Methods of Composite Timescale Formation on Biodiversity Estimates*. Contributed talk at the Northeastern Geological Society of America (GSA) Conference in Buffalo, NY and PRI’s Second Annual Summer Symposium at the Museum of the Earth, Ithaca, NY. 2008
- Lanz, C. (2008, April). *Aspects of the Nonlinear Geometry of Complete Binary Trees*. Contributed talk at the Ignatian Scholarship Day at Canisius College, Buffalo, NY. 2008
- Lanz, C. (2007). *Comparing Mathematical Methods of Range Extension*. Contributed talk at a seminar for Paleontology Department at University of Buffalo and Hudson River Valley Undergraduate Math Conference hosted by St. Lawrence University, Canton, NY. 2007
- Lanz, C. (2007). *Farey Sequences, 2×2 Matrixes and Hyperbolic Polygons: A Discussion of Ravi Kulkarni’s “An Arithmetic-Geometric Methods in the Study of the Subgroups of the Modular Group.”* Contributed talk at the Hudson River Valley Undergraduate Math Conference at Siena College, Loudonville, NY and at a Math Department Seminar at Canisius College, Buffalo, NY. 2007
- Sheets, H. D., Lanz, C., Izard, Z., Finney, S. C., Melchin, M. J., and Mitchell, C. (2007, October). *Approaches to Characterizing and Comparing Stratigraphic Correlations, as Applied to Biodiversity*. Contributed talk at the Geological Society of America Denver Annual Meeting in Denver, CO. 2007
- Sheets, H. D., Lanz, C., Melchin, M., Finney, S. C., and Mitchell, C. (2006, October). *An initial approach to the estimation of uncertainty in biodiversity estimates obtained from composite* Contributed talk, *with an example from the Hirnantian Mass Extinction*. Contributed talk at GSA convention at St. 2006

John Fisher College, Philadelphia, PA and for a Math Seminar at Canisius College, Buffalo, NY.

Service

- Serve on the Ithaca College Ad-Hoc Classroom Assessment and Optimization Committee, an advisory and working group convened under the sponsorship of the Provost and Senior Vice President for Academic Affairs and the Senior Vice President Strategic Services and Initiatives, with its recommendations informing campus-level planning for classroom design, instructional technology, and long-term support. 2025-present
- Member of the Classroom Assessment and Optimization Committee at Ithaca College, an advisory and working group convened during the academic year 2025-2026 to evaluate and assess the current state of our classrooms, including utilization, capacities, furniture, and technology, with the goal of supporting teaching and learning at Ithaca College. The committee operates under the sponsorship of the Provost and Senior Vice President for Academic Affairs and the Senior Vice President Strategic Services and Initiatives, with its recommendations informing campus-level planning for classroom design, instructional technology, and long-term support. 2025-2026
- Chair the Alternative Grading System Subcommittee of the Educational Technology Advisory Committee at Ithaca College, charged with investigating alternative grading software primarily for use in STEM classes such as GradeScope and Crowdmark. 2025-present
- Leader for a Girl Scouts Daisies Event on STEM Career Exploration to learn about what STEM is, connect it to their lives today, and explore how they can use STEM in their future. (Ithaca College, Ithaca, NY) 2024
- Serve on the Student Response System Subcommittee of ETAC, charged with investigating and reviewing polling solutions that could be utilized on the Ithaca College campus 2023-2025
- Manage the department's social media account, showcasing the accomplishments and activities of our faculty, students, and alumni 2022-present
- Serve as the Sigma Pi Sigma Ithaca College Chapter Faculty Representative 2022-present
- Co-chair the Educational Technology Advisory Committee (ETAC)—an advisory group to the Provost, CIO, and leadership team of Information Technology—that articulates and advances faculty priorities in educational technology applications as they relate to teaching, learning, and research 2021-present
- Served on the Integrative Studies Advisory Board at Ithaca College 2020-2022, 2024-present
- Coordinate undergraduate Learning Assistants to facilitate active learning in the Physics & Astronomy classes 2018-present

- Present demonstrations at various schools, camps and science festivals for elementary- and middle-school-aged children on gravitational waves including schools in Mt. Shasta, CA, Camp Barton Cub Scouts in Trumansburg, NY, and a visit from Trumansburg Middle School at Ithaca College 2017-present
- Perform various small-scale services to the Department of Physics and Astronomy at Ithaca College in the form of judging at the Whalen Symposium, participating in discussions and studies on educational technologies, welcoming students at admission events, participating in self-study and its resulting curricular review, attending a variety of campus events, serving on department review committees 2017-present
- Served on the panel review for the William F. and Edith R. Meggers Project Award Committee for the Society of Physics Students and Sigma Pi Sigma to fund projects for the improvement of high school physics teaching 2024
- Co-chaired the Classroom Committee in the Ithaca College Physics & Astronomy Department, resulting in a classroom redesign of one of the commonly used physics spaces on Ithaca College campus (CNS 204) 2023-2024
- Served as a mentor to a student in the S-STEM Scholars Program at Ithaca College 2022-2024
- Participated in the “Adopt-a-Physicist” program managed by Sigma Pi Sigma, which facilitates discussions between high school students and physicists from a broad array of backgrounds and interests 2021-2024
- Hosted visitors for IC Teaching: One Week of Teaching Visits in introductory physics courses through the Center for Faculty Excellence 2021-2024
- Served on the SPS (Society of Physics Students) Centennial Committee 2021-2022
- Served on the Physics and Astronomy Department Anti-Racism Committee 2020-2022
- Redesigned and maintained Physics & Astronomy Department Website 2020-2022
- Councilor for the National Council of the Society of Physics Students for New York State and Eastern Canada 2019-2022
 - assisted in the organization and the leading of tours in Physics Congress (PhysCon) 2019,
 - assisted with workshops,
 - participated in National Council meetings
- Coordinated colloquia schedule for visiting speakers in the Department of Physics and Astronomy at Ithaca College 2018-2022

- Served on the American Association of Physics Teachers Committee for Educational Technologies 2018–2022
- Served on the Society of Physics Students Outreach Committee 2020–2021
- Served on the Ithaca College Learning Management System Advisory Committee 2020–2021
- Guided Work Faculty Facilitator for Summer Institute on Canvas Course Development through the Center for Faculty Excellence 2021
- Served on the Perkins Eastman Learning Futures Roundtable Series where our conversations contributed to a white paper on how the pandemic may contribute to permanent changes in the way we envision the future of teaching, learning and study in higher education with hybrid pedagogies 2020
- Served on the Society of Physics Students Committee to Enhance Sigma Pi Sigma Chapter Engagement 2019–2020
- Coordinated the creation of videos about physics in football with introductory physics students to be shown at the Cortaca football game 2019
- Served on a search committee for a tenure-track position in the Chemistry Department at Ithaca College 2019
- Spoke as a guest in Ali Erkan and Joslyn Brenton’s ICIC 120 Insight class on “What is truth?” on October 19, 2019. 2019
- Serve on the Ithaca College Teaching, Learning and Technology (TLT) Advisory Board 2018–2019
- Served on a search committee for the Associate Director for Learning Technology at Ithaca College 2017–2018
- Served as faculty research mentor for a Park Scholar (NC State) 2016–2018
- Served on the Advisory Committee for the Center for the Integration of Research, Teaching, and Learning (CIRTL), an NSF Center for Learning and Teaching in higher education at NC State. 2016–2017
- Appointed by the Dean of the NC State College of Sciences to serve on the “Student Experience Work Group,” which develops methods for facilitating student research in technology-enabled spaces and creating an environment that is welcoming to students of all backgrounds. 2016–2017
- Developed a Teaching and Learning Community in the College of Sciences to unify educational research groups and teaching faculty within the College’s various departments (NC State) 2016–2017
- Organized events and led journal club gatherings for the Women in Physics group (NC State) 2013–2017

- “Phantastic Physics!” Invited talk for a science enrichment block for 6th graders (Davis Drive Middle School in Cary, NC) 2016
- Leader of NC State Presentation on “How to Thrive in Physics” for Freshmen Wolfpack Welcome Weeks (NC State) 2016
- Leader for Girl Scouts of the USA’s “Technoquest” (Meredith College, Raleigh, NC) 2015
- Trained graduate students at Physics Teaching Assistant Preparation Workshops (NC State) 2012-2014
- Led a workshop on “Physics Education Resources Parents of High School Students Can Use at Home” (Cary, NC Homeschool Co-Op) 2014
- Judged projects in Lacy Elementary Science Fair in the Engineering and Technology Category (Lacy Elementary School, Raleigh, NC) 2014
- Secretary of Graduate Physics Student Association (NC State) 2013-2014
- Ambassador for Girl Scouts of the USA’s “Technoquest” (Meredith College, Raleigh, NC) 2012-2013
- Planned and coordinated Prospective Graduate Student Weekend visits (NC State) 2011-2013
- Pianist in Top Jazz Ensemble and Big Band (Canisius, VT) 2007-2010
- President, Treasurer, Event Coordinator of Math Club (Canisius) 2004-2008
- Judged projects at NAACP Afro-Academic, Cultural, Technological and Scientific Olympics for high schoolers in the Chemistry/Biochemistry Category (Buffalo, NY) 2008

Programming Experience

- Most recent experience: Python and VPython, JavaScript, and R; analysis of AI-assisted coding tools like Claude
- Past experience: React, C, C++, Mathematica, COMSOL, MATLAB, WebAssign, FORTRAN, and LiveCode

Professional Development and Certifications

Participation in...

- Book Discussion Group on *Teaching with AI: A Practical Guide to a New Era of Human Learning*. Facilitated by faculty and members from the Center for Faculty Excellence and the Center for Instructional Design & Educational Technology, this series offers space for reflection, dialogue, and community around the use of AI and its impact on teaching and learning. The series also included a Q&A session with co-author José Antonio Bowen. 2026
- Sustained engagement in the Ithaca College AI Minigrant Community, supporting opportunities for current AI mini-grant award winners to connect with past awardees, to share the progress with their projects, and to talk with other faculty who have been part of past AI mini-grants. The goal is to share successes, challenges, and ideas with your learning community. 2026
- Workshop on Positioning AI in Your Course: The “AI Talk” & Low-Stakes Activities at AI@IC Day of Learning. 2026
- Healthy Ears, Limited Annoyance (HELA) Complete Program Certification. HELA is the world's first certification program promoting best practices for safe and responsible sound management at live music events. 2026
- Conversations with leaders of the Ithaca College Digital Media Lab in preparation for sabbatical work in Spring 2027. 2026
- Collaborative Institutional Training Initiative (CITI) Program Certification for Social and Behavioral Research (Credential ID 67954469) 2025
- Ithaca College First-Year Seminar (ICSM) Round-Table Discussion about students’ challenges in personal and professional development 2024
- Teaching Moves Session at the Center for Faculty Excellence: Working with Students in Distress and Making Referrals to CAPS (Ithaca College) 2024
- ICSM Faculty Workshop 2024
- Ithaca College H&S Works in Progress on instructional physics simulations (led discussion and collected faculty feedback) 2023
- Workshop on Developing Antiracist Pedagogies through the Ithaca College Center for Faculty Excellence 2022
- Ithaca College First-Year Seminar (ICSM) Faculty Conference 2022

- Narcan opiate overdose response training (Southern Tier AIDS Program) 2022
- Training in Mental Health First Aid Workshop to recognize the signs of a mental health crisis in students and act as a bridge between crisis and professional help (CAPS, Ithaca College) 2022
- American Association of Physics Teachers' "Teaching group work in instructional laboratories" workshop led by Brent Barker and Mark Hannum (AAPT, online) 2021
- STEM Anti-Racism Reading Group (Emilie Wiesner, Ithaca College) 2021
- Being Heard in a Masked Classroom Workshop (Carol McAmis, Ithaca College) 2021
- Ithaca Summer Seminars Faculty Orientation (Ithaca College) 2020
- React Native Workshop Series (John Barr, Computer Science at Ithaca College) 2020
- Summer Institute (Center for Faculty Excellence, Ithaca College) 2020
- Summer Scholars Workshop for Mentors (Ithaca College) 2020
- Equity and inclusion in evaluating teaching: Promises, pitfalls, and practical solutions (Hari Kumar, Ithaca College) 2018
- #STEM #LikeAGirl: Expanding Participation in STEM Workshop administered at Fall 2016 NCS-AAPT Meeting 2016
- Recognizing and Responding to Microaggressions Workshop administered by the GLBT Center (NC State) 2016
- College of Science Course Redesign Workshop for redesigning introductory physics courses (NC State) 2015
- Fun with Hardware in the Classroom Workshop on Arduino devices (North Carolina School of Science and Math) 2014
- Getting Started with 3D Printing Workshop (NC State) 2013
- Classroom-Flipping Workshop (NC State) 2012

Graduate Classes Taken

- **North Carolina State University**

2010-2013

Physics: Graduate Level Quantum Mechanics (2), Advanced Electricity and Magnetism (2), Physical Optics (1), Statistical Physics (1), Nuclear Subatomic Physics (1), Advanced Classical Mechanics (1), Astrophysics (1)

Psychology and Education: Tests and Measurements (1), Trends and Issues in Science Education (1), Special Topics in Education: Sign Language (audited)

Computer Science: Graphics and Interfaces for Mobile Applications (audited)

- **Virginia Polytechnic Institute**

2008-2010

Mathematics: Graduate Level Real Analysis (2), Applied Partial Differential Equations (2), Numerical Analysis (2), Ordinary Differential Equations (2), Finite Difference Methods (1), Calculus of Variations (1), Optimal Control Methods (1)

Physics: Biophysics (1)

Creative Activity in Music

I have also engaged in many music-related activities since joining Ithaca College in 2017. In the last seven years, I have played keyboard, synth, and piano and provided background vocals at 150 shows across New York State, building on experiences in a variety of jazz ensembles.

My contributions span a diverse range of regionally-based musical acts, including, most recently, Louiston (Americana “folk and roll”) and Ariel Arbisser (“dramatic electric pop”) and historically, the Auroras (neo-soul and “future funk”), Freight (“danceable folk rock”), Leo + the Maydays (alt-pop), the *Trans Am* musical band (a punk rock musical about the lead writer’s creative and personal journey as a trans rock musician), and Janet Batch (“country with an art degree”).

I have also contributed keys to five full-length albums. This includes Louiston’s *Tiny Devastations in Granular Living*, Freight’s *Hard Worker* and *Old Bones*, and Ariel Arbisser’s *Ingenue Corrupt* (which was nominated for the 2025 Syracuse Area Music Award in Best Pop Albums), one EP, and three singles, with songwriting credits on five tracks. A recent interview was published in *Ithaca + CNY Music News*.