

# First Last

*PhD in Applied Physics, science communicator*

## Summary

- Goal A career where I can use my technical expertise to understand complicated problems and communicate those efforts (and possible solutions) to a wide variety of audiences.
- Analytical Thinking A PhD in applied physics with specific expertise in materials science, nanotechnology, energy efficiency, and high performance computing.
- Science Communication Throughout my PhD I have sought out training and experiences presenting to, writing for, and working with diverse audiences. I relentlessly pursue context in making science understandable and relevant for audiences.

## Education

- Expected: Sept. 2018 **PhD in Applied Physics**, *University of Michigan*, Ann Arbor, MI.  
Relevant Coursework:
  - Public Policy 650 – Introduction to Science and Technology Policy Analysis
- 2012 **B.S. in Physics**, *Rensselaer Polytechnic Institute*, Troy, NY.  
Magna cum laude, dual major in mathematics

## Awards

- 2014 National Science Foundation Graduate Research Fellowship Program
- 2012 [Nadia Trinkala Service Award \[Link\]](#), Rensselaer Physics Department
- 2010 [Founder's Award of Excellence \[Link\]](#), Rensselaer Polytechnic Institute
- 2008 Boy Scouts of America, Eagle Scout

## Leadership

- 2018-Present **Organizer**, *ComSciCon Michigan*, Ann Arbor, MI.  
Work with other graduate students to organize, publicize and run a conference devoted to science communication in Ann Arbor Michigan.
- 2017-Present **Senior Editor**, *Students of Applied Physics Project*, *Applied Physics Student Council*, Ann Arbor, MI.  
I work with PhD students to develop understandable and engaging articles about research in the applied physics department. [Example article \[Link\]](#)
- 2014-2015 **President**, *Local Chapter of American Society for Engineering Education*, Ann Arbor, MI.  
Organize and run meetings, ensure that skill workshops have teachers, plan future workshops based on the needs of University of Michigan students.
- 2009-2011 **President**, *Local Chapter of Society of Physics Students*, Troy, NY.  
Organize meetings and social events, foster a community of physics students, act as intermediary between faculty and students, help organize and run engagement events in local area.

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## Selected Technical Publications

1. **Andrew McAllister**, Dylan Bayerl, Emmanouil Kioupakis, Auger and radiative recombination in indium nitride, *Applied Physics Letters*, **112**, 251108 (2018) [doi:10.1063/1.5038106](#)
2. Kyeongwoon Chung, **Andrew McAllister**, David Bilby, Bong-Gi Kim, Min Sang Kwon, Emmanouil Kioupakis, Jinsang Kim, Designing interchain and intrachain properties of conjugated polymers for latent optical information encoding, *Chemical Science* **6**, 6980-6985 (2015) [doi:10.1039/c5sc02403j](#)
3. **Andrew McAllister**, Daniel Åberg, André Schleife, and Emmanouil Kioupakis, Auger recombination in sodium-iodide scintillators from first principles, *Applied Physics Letters* **106**, 141901 (2015) [doi:10.1063/1.4914500](#)

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## Selected General Audience Writing

1. **Using LEDs to Tell Plants What We Want From Them [Link]**, *Harvard's Science in the News Blog*, 2018.  
Worked with the "Friends of Joe's Big Idea" program by National Public Radio.
2. **Atomistic Calculations Predict That Boron Incorporation Increases The Efficiency Of LEDs [Link]**, *University of Michigan Materials Science & Engineering News*, 2017.  
Press release for research group. Picked up by the Department of Energy, National Energy Research Scientific Computer Center, and Semiconductor Today.

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## Selected Presentations

### Contributed Technical Oral Presentations

1. **Andrew McAllister**, Dylan Bayerl, Christina Jones, Emmanouil Kioupakis, Auger Recombination From First-principles in Group-III Nitride Alloys, American Physical Society March Meeting 2018, Los Angeles, CA
2. **Andrew McAllister**, Dylan Bayerl, Emmanouil Kioupakis, Radiative and Auger Recombination of Degenerate Carriers in InN American Physical Society March Meeting, 2017, New Orleans, LA
3. **Andrew McAllister**, Emmanouil Kioupakis, Daniel Åberg, André Schleife, Auger recombination in scintillator materials from first principles, American Physical Society March Meeting, 2015, San Antonio, TX
4. **Andrew McAllister**, Predictive modeling of quantum processes for optoelectronic devices, Physics Graduate Student Symposium, 2014, Ann Arbor, MI

### Public Engagement

1. **Nerd Nite [Link] Ann Arbor Talk.**  
Gave a 20 minute talk about my research at a local bar to an audience of mostly non-scientists. A recording is available at: [LED Light Bulbs: Why Do They Cost an Arm and a Leg? \[Link\]](#)

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## Communication Training

August 2017 **ComSciCon Chicago [Link for more information]**, Chicago, IL.

- 2016 **Researchers Expanding Lay-Audience Teaching and Engagement (RELATE) Workshops.**
- o Over 3 months, worked on crafting messages and narratives, considering different audiences and making visual aids.
  - o Developed and produced a [YouTube video \[Link\]](#) highlighting my research.