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McAllisterSci
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Andrew McAllister

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: January 2019 — **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 for Verification], Rensselaer Physics Department

2010 Founder's Award of Excellence [Link for Verification], Rensselaer Physics Department

2008 Boy Scouts of America, Eagle Scout

Leadership

2018-Present — **Organizer**, *ComSciCon Michigan*, Ann Arbor, MI.
I worked 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.
I organized and ran meetings, made sure that skill workshops had teachers, and planned future workshops based on the needs of University of Michigan students.

2009-2011 — **President**, *Local Chapter of Society of Physics Students*, Troy, NY.
I organized meetings and social events, fostered a community of physics students, acted as intermediary between faculty and students, and helped organize and run engagement events in the local area.

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

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.

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, Andreé 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]

Communication Training

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

2016 **Researchers Expanding Lay-Audience Teaching and Engagement (RELATE) Workshops**.

- Over 3 months, worked on crafting messages and narratives, considering different audiences and making visual aids.
- Developed and produced a YouTube video [Link] highlighting my research.