# Dylan **McNally**

Undergraduate Researcher · Physics Nerd

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*"All we have to decide is what to do with the time that is given us." ~Gandalf*

## Summary


Undergraduate student at the University of Colorado at Boulder. Pursuing my dream of becoming a professor of physics at a university, with an emphasis in experimental atomic and quantum research. I am a self proclaimed physics nerd. As a lover of 'doing' I enjoy working with my hands to physically realize the contents of my head. I find my greatest accomplishments in having supported others in their achievements. My hobbies include DIY projects, exploring the outdoors, Russian literature, and, of course, coffee.


## Education

### University of Colorado at Boulder — *Boulder, CO*

B.S. in Engineering Physics, B.S. in Applied Mathematics — *August 2015 - May 2019*

- GPA: 3.899
- Minor in Leadership Studies

### Loveland High School — *Loveland, CO*

Summa Cum Laude, Salutatorian — *August 2011 - May 2015*

- GPA: 4.43
- National AP Scholar

## Work Experience

### Joint Institute for Laboratory Astrophysics — *Boulder, CO*

Undergraduate Research Assistant — *May 2017 - Present*

- Conduct research, writing undergraduate honors thesis with Professor Cindy Regal.
- Fabricated first successful phononic crystal membrane resonator for the Regal Group. Measured advanced resonators for integration in optical cavities and magnetic force sensing assemblies.
- Integrated advanced membrane designs into magnetic force sensing systems.

### Univ. of Colorado at Boulder — *Boulder, CO*

Resident Advisor - Andrews Hall — *August 2016 - Present*

- Foster community building within the residence hall. Live-in position that seeks to make the halls a safe, thriving community for residents. I have encountered mental health cases, severe intoxication, medical emergencies, peer-peer conflict, and more.
- Mentor residents in the hall and provide them with resources to enable them to reach their full potential.

### Presidents Leadership Class — *Boulder, CO*

Class Advisor, Director of Class Advisors — *August 2017 - Present*

- Assist in teaching the first year course for the Presidents Leadership Class. Lead small group breakouts, facilitate discussion and debate, and critique student writing all concerning ethical leadership and community issues.
- Lead and direct academic student staff. Serve as a resource for class advisors to excel in their roles. Communication channel from professional staff.

### Microfabrication Laboratory - Univ. of Colorado — *Boulder, CO*

Assistant Laboratory Manager — *May 2016 - August 2017*

- Assisted the laboratory manager in administrative tasks, chemical monitoring, safety protocol, and general lab maintenance.
- Orchestrated two laboratory moves.
- Initiated and created laboratory inventories for chemicals, equipment, and materials.

### Dept. of Mechanical Engineering - Univ. of Colorado — *Boulder, CO*

Undergraduate Research Assistant, Y.C. Lee Group — *October 2015 - September 2017*

- Studied properties of wicking structures of both flexible and high heat flux vapor chambers in pursuit of creating an optimization model for future designs with Professor Y.C. Lee.
- Developed testing methods for characterization of wicking structure permeability and capillary pressure (paper in preparation).
- Design and fabrication of novel structures to increase vapor chamber performance.
- Partnered with Kelvin Thermal Technologies and Murata Manufacturing.

**Dept. of Applied Mathematics - Univ. of Colorado** *Boulder, CO*

Learning Assistant *January 2017 - May 2017*

- Wrote homework solutions, graded homeworks and exams, and hosted weekly office hours and review sessions for the students in APPM 3310: Matrix Methods and Applications

## Honors & Awards

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|---|---|---|
| 2018 | **Goldwater Scholarship Nominee,** Univ. of Colorado | *Boulder, CO* |
| 2016-2017 | **Discovery Learning Apprentice,** College of Engineering and Applied Science | *Boulder, CO* |
| 2016 | **Directors Club Scholar,** Univ. of Colorado | *Boulder, CO* |
| 2015 | **Semifinalist,** Boettcher Foundation Scholarship | *Loveland, CO* |

## Skills

| | |
|---|---|
| **Programming** | Python, Fortran, Matlab, C++ |
| **Micro-/nanofabrication** | Lithography, evaporative deposition, wet etching, general cleanroom pratices |
| **Computer Aided Design** | Certified Solidworks Associate, COMSOL Multiphysics, AutoCAD |
| **General Software** | Microsoft Office, github, Mathematica |
| **Manufacturing** | Basic machining and woodworking skills |

## Involvement

**Engineering Honors Program** *Boulder, CO*

Student Leader *August 2015 - Present*

- Mentored students in a culture and community based honors program. Helped maintain the coffee and tea bar and organized
- Project lead for Continuous Arm Chronograph, student designed and fabricated mechanical clock.

**Presidents Leadership Class** *Boulder, CO*

Student Staff Member, Scholar *August 2015 - Present*

- Engaged in and facilitated discussions surrounding leadership development and practice.
- Served on student staff as a first year class advisor.
- Initiated PLC branding, orchestrated apparel order and distribution.
- PLC Day of Service volunteer 2015, 2016.
- 2016-2017 Sophomore Cohort Ambassador.

**Undergraduate Research** *Boulder, CO*

Advocate, Researcher *October 2015 - Present*

- Engaged in research as a student, 2015 to present.
- Assisted in hiring undergraduate students for research positions.
- Presented in physics department research interest session, 2017.
- Presented in Presidents Leadership Class research interest session, 2017.
- Attended undergraduate research symposiums to support fellow researchers.

**Andrews Hall Book Club** *Boulder, CO*

Member *August 2015 - August 2017*

- Read and discussed various short stories, Being and Nothingness by Friedrich Nietzsche, and The Brothers Karamazov by Fyodor Dostoyevsky

**CU Club Swim and Dive** *Boulder, CO*

Member *August 2015 - May 2016*

- 2016 National Qualifier