

Katherine Melbourne

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EDUCATION

Yale University; 3.73 GPA, Physics, B.S.; New Haven, CT (Anticipated graduation: December 2019)

WORK EXPERIENCE

Center for Teaching and Learning; *STEM Education Undergraduate Fellow*; New Haven, CT (2017-present)

- Oversee communications for Helmsley STEM Education Program at Yale
- Coordinate professional events with leaders in STEM education research from universities nationwide

National Aeronautics and Space Administration; *Desk Officer Support Intern*; Washington, D.C. (Spring 2017)

- Drafted 15 agreements that align with the missions of NASA nationally and globally
- Negotiated and finalized 3 agreements with foreign partners by communicating with their legal teams
- Briefed senior officials about upcoming meetings with foreign administrators and international trips

Community Foundation of the Great River Bend; *Summer Office Assistant*; Bettendorf, IA (Summer 2015)

- Overhauled redesign of main web page for the foundation
- Composed and edited donor stories for journals and web page
- Implemented new organizational system for more than 2000 digital files

LEADERSHIP POSITIONS

Yale Women in Physics; *Co-President and Secretary General*; New Haven, CT (2015-present)

- Mobilize efforts to support and unite women in physics and STEM fields through outreach events
- Mentor younger students starting their careers in physics about academic opportunities
- Delegate responsibilities for weekly event management to other board members
- Facilitate initiative to bring inaugural Schultz Undergraduate Prize visiting lecturer to campus

Camp Kesem Yale; *Head Unit Counselor and Development Committee Member*; New Haven, CT (2015-present)

- Fundraise \$75,000 a year to send kids affected by cancer in their families to summer camp at no cost
- Cultivate positive environment for 110 campers and 60 counselors by creating engaging activities
- Promote cooperation and conflict resolution among campers and counselors

Yale Precision Marching Band; *Class Representative and Section Leader*; New Haven, CT (2015-present)

- Foster enthusiasm in upper woodwind section during Yale football, hockey, and basketball games
- Enhance performances by coordinating music and drills
- Stimulate growth of section and organization through recruitment of new members

State of Iowa Youth Advisory Council; *Bill Leader and Committee Member*; Des Moines, IA (2013-2015)

- Orchestrated lobbying efforts to gain legislator support of bill banning indoor tanning for minors
- Addressed council members and senate sub-committee about importance of tanning legislation

RESEARCH PROJECTS

Universidad de Chile; *Tetelman Fellow for International Research in Science*; Santiago, Chile (2016-present)

- Explore the relationship between stellar activity and radial velocity data on exoplanets
- Expedite codes in Python and associated astronomy packages by parallel-processing on supercomputer
- Observe exoplanet targets through Swiss Euler 1.2m telescope at La Silla Observatory
- Forge partnership between the universities for future undergraduate research exchanges

Yale University; *Yale College Dean's Research Fellow*; New Haven, CT (Summer 2017)

- Collaborated with 300 physicists on Cryogenic Underground Observatory for Rare Events experiment
- Developed new analysis step to compare calibration and simulation data and identify potential problems
- Coded project in C/C++ through ROOT software system designed for particle physics analysis
- Presented research poster at American Physical Society Division of Nuclear Physics Conference

Boston University; *Research Internship in Science and Engineering for Astronomy*; Boston, MA (Summer 2014)

- Analyzed data from Cerro Tololo Observatory to produce an HR diagram of M Dwarf stars
- Formulated and tested new image processing method to reduce raw astronomical observations

SPECIAL SKILLS

Programming experience: Python, C/C++ through ROOT, Linux and Macintosh computing environments

Language experience: Intermediate proficiency in Spanish

AWARDS

NASA Connecticut Space Grant Consortium Undergraduate Research Fellowship (September 2017)

Astronomical League Horkheimer/Smith Youth Service Award for Astronomy Outreach (August 2016)