

# Drew Pendergrass

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## EDUCATION

*B.A. candidate*: Majors: Physics and Mathematics. Minor: English.  
Harvard University; GPA 4.00

Expected May 2020  
Cambridge, Mass.

*High school diploma*  
Huntsville High School; GPA: 4.00

May 2016  
Huntsville, Ala.

## RESEARCH EXPERIENCE

*Harvard University*  
Chan School of Public Health  
Undergraduate research assistant

Cambridge, Mass.  
January 2019 – Present  
*Advisors: Samuel Myers, Matthew Smith*

- Analyze the impact of droughts on nutrition outcomes and global agricultural commodity trade, with an emphasis on health in low-income nations.

*Chinese University of Hong Kong*  
Earth System Science Programme  
Undergraduate research assistant

Shatin, Hong Kong  
June 2018 – August 2018  
*Advisor: Amos Tai*

- Used topological data analysis and manifold learning to understand nonlinear interactions between tropospheric ozone, meteorology, the biosphere, and anthropogenic emissions

*Harvard University*  
Paulson School of Engineering and Applied Sciences  
Undergraduate research assistant

Cambridge, Mass.  
December 2016 – Present  
*Advisors: Daniel Jacob, Lu Shen, Loretta Mickley*

- Quantify the observed relationship between Beijing weather patterns and pollution accretion using extreme value theory

*Radcliffe Institute for Advance Study*  
Music composition program  
Undergraduate research assistant

Cambridge, Mass.  
September 2016 – May 2017  
*Advisor: Anthony Tan*

- Designed high-speed algorithms for delay, granular synthesis, and distortion of live audio signals, mixed on stage during a live May 2017 performance

## PEER-REVIEWED PUBLICATIONS

**Pendergrass, D. C.**, L. Shen, D. J. Jacob, and L. J. Mickley. (2019). Predicting the impact of climate change on severe wintertime particulate pollution events in Beijing using extreme value theory. *Geophysical Research Letters*. doi: 10.1029/2018GL080102.

## PRESENTATIONS

**Pendergrass, D. C.**, L. Shen, D. J. Jacob, and L. J. Mickley. Predicting the impact of climate change on severe winter haze pollution events in Beijing using extreme value theory. American Geophysical Union Fall Meeting, Washington D.C., December 11, 2018. Talk.

**Pendergrass, D.C.** and A.P.K. Tai. Understanding tropospheric ozone variability using topological data analysis. Chinese University of Hong Kong Summer Undergraduate Research Programme, Shatin, Hong Kong, August 16, 2018. Poster.

**Pendergrass, D.C.** and L. Shen. Predicting extreme winter smog in Beijing under climate change. Harvard Program for Research in Science and Engineering, Cambridge, MA, August 8, 2017. Talk.

## HONORS AND AWARDS

NOAA Ernest F. Hollings Scholarship	April 2018
Jacob Wendell Scholarship Prize, Harvard University <i>Given to "most promising and broad-ranging scholar in his or her class"</i>	April 2018
Detur Book Prize ( <i>top 3% of first-year students</i> )	February 2018
Harvard College Veritas Award <i>Given to one first-year who shows "exceptional intellectual curiosity"</i>	April 2017
John Harvard Scholarship ( <i>top 5% of class each year</i> )	2017, 2018
National Courage in Student Journalism prize	November 2016
National Merit Scholarship	2016

## RESEARCH AND CONFERENCE FUNDING

Harvard-China Project for the Environment summer research fellowship	Summer 2018
Harvard College Program for Research in Science and Engineering fellowship	Summer 2017
Harvard College Research Program funding ( <i>received four times</i> )	2017 – 18

## SELECTED GENERAL-AUDIENCE WRITING

"Harvard's Tai Chi Master" (Feb. 2018, *Harvard Crimson*)  
"How Insulin Became Unaffordable." *Harvard Political Review* (Jan. 2018).  
"The Bitter Pill: Harvard and the Dark History of Birth Control." *Harvard Crimson* (Sept. 2017).  
"Inside the Climate Science Witch Hunts." *Harvard Political Review* (March 2017).  
"The New Gods: Reforging Harvard Divinity School" *Harvard Crimson* (Feb. 2017)  
"The Alabamafication of America" *Harvard Political Review* (Feb. 2017)

## EXTRACURRICULAR ACTIVITIES

Mentorship coordinator for <i>Humanities 10</i> course	September 2018 – present
Associate magazine editor, The Harvard Crimson	January 2018 – December 2018
U.S. Politics Editor and Publisher, Harvard Political Review	September 2017 – December 2018

## TECHNICAL SKILLS

**Technical:** R, Python, Java, Mathematica, Matlab  
**Web:** JavaScript, PHP, HTML/CSS, WordPress  
**Music:** Finale, Ableton for Live, Max for Live, ProTools, Audacity  
**Other:** LaTeX, InDesign, Photoshop