

## Kyle P. Batra

Purdue University  
West Lafayette, IN 47907

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Dept. of Earth, Atmospheric, and Planetary Sciences

### EDUCATION

Expected 2026

**Ph.D. in Earth, Atmospheric, and Planetary Sciences**

Purdue University, West Lafayette, IN

Advisor: Stephanie Olson

2021

**B.S. Cum Laude with Honors in Astronomy & Astrophysics**

**Minor with Honors in Astrobiology, Minor in Physics**

The Pennsylvania State University, University Park, PA

Schreyer Honors College

### RESEARCH & PROFESSIONAL EXPERIENCE

2021 – Present

Purdue University

Department of Earth Atmospheric, and Planetary Sciences

Ph.D. Candidate, Advisor: Stephanie Olson

2017 – 2021

The Pennsylvania State University

Department of Astronomy & Astrophysics, Geosciences

Undergraduate Researcher, Advisor: Bradford Foley & James Kasting

### HONORS & AWARDS

2021

EAPS Teaching Honor Roll, Fall Semester

2021

PSU Undergraduate Research Exhibition, Physical Science Award

2020 – 2021

NASA Pennsylvania Space Grant Consortium Scholarship

2020

Erikson Discovery Research Grant

2020

National Science Foundation Research Grant

2019

Schreyer Honors College Research Grant

2017 – 2021

Penn State Dean's List every Semester

### PUBLICATIONS

2021

Batra K, Foley B, "Scaling laws for stagnant-lid convection with a buoyant crust", *Geophysical Journal International*, Volume 228, Issue 1, January 2022, Pages 631–663

### SCIENTIFIC PRESENTATIONS

July 2023

*Impact of Ocean Salinity and Planetary Obliquity on Climate in the Outer Habitable Zone*, Goldschmidt Conference

December 2022

*Exoplanet Ocean Salinity and Climate at the Outer Reaches of the Habitable Zone*, AGU Fall Meeting

July 2022

*Ocean Salinity and Climate in the Outer Reaches of the Habitable Zone*, Goldschmidt Conference (Flash Talk & Poster)

May 2022

*Ocean Salinity and Climate at the Outer Edge of the Habitable Zone of Sun-like Stars and M-dwarfs*, AGU AbSciCon

April 2021

*Scaling laws for stagnant-lid convection with buoyant and negatively buoyant crustal layers*, PSU Undergraduate Research Exhibition

December 2020	<i>Scaling laws for stagnant-lid convection with buoyant and negatively buoyant crustal layers</i> , AGU Fall Meeting
April 2020	<i>Scaling laws for stagnant-lid convection with buoyant and nonbuoyant crusts</i> , PSU Undergraduate Research Exhibition
March 2020	<i>Scaling laws for stagnant-lid convection with buoyant and negatively buoyant crustal layers</i> , LPSC
December 2019	<i>Scaling laws for stagnant lid convection with a buoyant crust</i> , AGU Fall Meeting
December 2018	<i>Scaling laws for stagnant lid convection with a buoyant crust</i> , AGU Fall Meeting
<b>Colloquia, Seminars, Lunch Talks</b>	
July 2021	<i>Scaling laws for stagnant-lid convection with a buoyant crust</i> , Department of Astronomy & Astrophysics, Penn State University, Astronomy on Tap
April 2021	<i>Scaling laws for stagnant-lid convection with a buoyant and negatively buoyant crustal layers</i> , Department of Astronomy & Astrophysics, Penn State University, Lunch Talk
November 2019	<i>Early Martian Climate and the Mars Rovers</i> , Department of Geosciences, Penn State University, Lunch Talk
November 2019	<i>Planet Habitability, Mars</i> , Department of Geosciences, Penn State University, Guest Lecturer

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## MENTORSHIP

### **John Coulter (Planetary Science Major, Biology Minor)**

2023 – Present      Purdue Undergrad Research Advising on Waterworld Exoplanets

### **Benjamin Carpenter (Planetary Science Major, Astronomy Minor)**

2022 – 2023      Purdue Undergrad Research Advising on Waterworld Exoplanets

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## TEACHING EXPERIENCE

### **Teaching assistant for:**

2021	Earth Through Time, Purdue
2021	General Physics Mechanics, PSU
2020	Distant Universe Astronomy, PSU
2019	Solar System Astronomy, PSU
2018	Schreyer Honors Orientation Mentor, PSU

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## OUTREACH

2022 – Present	Purdue LGBTQ+ Grad Volunteering
2020 – 2021	Research Ambassador & Mentor for the Office of Undergraduate Research & Fellowships Mentoring
2018 – 2021	LGBTQ+ in STEM Outreach through OSTEM
2017 – 2021	Department of Astronomy & Astrophysics Volunteer

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## TECHNICAL SKILLS

**Languages:** English (fluent), German (fluent), Spanish (proficient)

**Coding Software & Programming:** ROCKE-3D, FORTRAN, MATLAB, Python, Mathematica, LaTeX, Unix, AstroImageJ, Nebulosity4, SAOImageDS9, Microsoft Office, Excel, PowerPoint. Adobe Photoshop, Adobe Illustrator

**Operating Systems:** Windows, MacOS, Linux (proficient)