

# — Adam Michael Bauer —

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## Education

### University of Illinois Urbana-Champaign

Ph. D. in Physics | GPA: 4.000/4.000

Urbana, Illinois

August 2020 — November 2024

**Doctoral Thesis:** *The Physics, Economics, and Political Economy of Climate Risk*

Committee: Ryan Sriver (Chair), Charles Gammie, Cristian Proistosescu (Advisor), Gernot Wagner (Advisor),  
Kelvin Droegemeier

### University of Arizona

B.S. in Physics (with honors); B.S. in Mathematics | GPA: 3.972/4.000

Tucson, Arizona

August 2016 — May 2020

**Honors Thesis:** *On the behavior of null rays in spherically symmetric spacetimes*

## Academic Positions

### University of Illinois Urbana-Champaign, Department of Physics

National Science Foundation Graduate Research Fellow

Graduate Research Assistant

Graduate Teaching Assistant

Urbana, Illinois

August 2022 — Present

January 2021 — July 2022

August 2020 — December 2020

### Columbia Business School

Staff Associate II in the Faculty of Business

New York, New York

September 2022 — December 2022

### University of Arizona

National Science Foundation Research Experience for Undergraduates Intern

NASA Space Grant Research Intern

Tucson, Arizona

May 2019 — August 2019

September 2018 — May 2019

## Consulting

### The World Bank Group, Climate Change Division

Short-term Consultant

Washington, D.C.

May 2023 — Present

### Tamer Center for Social Enterprise & Columbia Business School

Research Consultant

New York, New York

April 2022 — June 2022

## Teaching

### University of Illinois Urbana-Champaign

Guest Lecturer (PLSC 441 — Politics of Climate Change in Developing States)

Guest Lecturer (ATMS 140 — Climate and Global Change)

Graduate Teaching Assistant (PHYS 102 — College Physics: E&M and Modern)

- Made the *List of Teachers Ranked as Excellent by Their Students*

Urbana, Illinois

April 2025

November 2023

January 2021 — July 2022

### University of Arizona

Undergraduate Teaching Assistant (PHYS 331 — Electricity and Magnetism I)

Undergraduate Teaching Assistant (PHYS 103 — Introductory Physics II)

Tucson, Arizona

January 2020 — May 2020

August 2019 — December 2019

## Publications

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(\* implies I directly advised the student.)

### PEER-REVIEWED RESEARCH ARTICLES

McDonnell, A.\*, **A. M. Bauer**, C. Proistosescu. *To what extent does discounting 'hot' climate models improve the predictive skill of climate model ensembles?* Earth's Future, 12(10), 2024.

**Bauer, A. M.**, C. Proistosescu, G. Wagner. *Carbon Dioxide as a Risky Asset*. Climatic Change, 177(72), 2024.

In press:

- [\*New York Times\*](#)
- [\*Jerusalem Post\*](#)
- [\*UIUC Physics Research Highlight\*](#)
- [\*Yale Climate Connections\*](#)
- [\*Green Central Banking\*](#)
- [\*Semafor Net-Zero Newsletter\*](#)

Pascale, M., B. L. Frye, L. Dai, N. Foo, Y. Qin, R. Leimbach, **A. M. Bauer**, et al. *Possible ongoing merger discovered by photometry and spectroscopy in the field of the galaxy cluster G165.7+67.0*. The Astrophysical Journal, 932(85), 2022.

**Bauer, A. M.**, A. Cárdenas-Avendaño, C. F. Gammie, N. Yunes. *Spherical accretion in alternative theories of gravity*. The Astrophysical Journal, 925(2), 2022.

**Bauer, A.** and P. Carter. *Existence of transonic solutions in the stellar wind problem with viscosity and heat conduction*. SIAM Journal on Applied Dynamical Systems, 20(1), 2021.

Frye, B. L., M. Pascale, Y. Qin, A. Zitrin, J. Diego, G. Walth, H. Yan, C. J. Conselice, M. Alpaslan, **A. Bauer**, et al. *PLCK G165.0+67.0: Analysis of a massive lensing cluster in a Hubble Space Telescope census of sub-millimeter giant arcs selected using Planck/Herschel*. The Astrophysical Journal, 871(51), 2019.

### WORKING PAPERS, COMMENTARY, AND OTHER ACADEMIC WRITINGS

**Bauer, A. M.**, S. Hallegatte, F. Mclsaac. *When the Best is the Enemy of the Good: Minimizing the Impact of Political Constraints on Climate Policy Costs*. E-Axes Forum Policy Brief, 2025.

**Bauer, A. M.**, S. Hallegatte, F. Mclsaac. *The Timing versus Allocation Trade-off in Politically Constrained Climate Policies*. World Bank Policy Research Working Paper No. 10971, The World Bank, Washington DC, 2024.

**Bauer, A. M.**, F. Mclsaac, S. Hallegatte. *How Delayed Learning about Climate Uncertainty Impacts Decarbonization Investment Strategies*. World Bank Policy Research Working Paper No. 10473, The World Bank, Washington DC, 2024.

**Bauer, A. M.**, D. C. Lafferty, K. Schwarzwald, C. Proistosescu, G. Wagner. *Comments on "Principles for Climate-Related Financial Risk Management for Large Financial Institutions"*. Docket No. OP—1793, The Federal Reserve, 2023.

**Bauer, A. M.**, L. R. Vargas Zeppetello, C. Proistosescu. *Soil Moisture Modulation of Midlatitude Heat Waves*. Earth ArXiv, 2023.

**Bauer, A.** and B. Frye. *THELI Reduction Software: A write up for inexperienced data reducers*. Posted to THELI Forums and Cloudynights, 2019.

### POPULAR PRESS

**Bauer, A. M.** and G. Wagner. *Use financial logic to price carbon emissions*. Green Central Banking, May 2024.

**Bauer, A. M.** *Merging Physics and Economics for Climate Policy*. University of Illinois Department of Physics Research Highlight, 2023.

## Talks and Presentations

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(\* implies an invited talk.)

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| <b>Learning Climate Sensitivity from Future Observations, Fast and Slow</b><br>University of Illinois Urbana-Champaign Department of Climate, Meteorology<br>and Atmospheric Sciences Departmental Seminar | April 2025<br>Urbana, Illinois      |
| <b>*The Timing Versus Allocation Trade-off In Politically Constrained Climate Policies</b><br>E-Axis Forum Young Scholars Webinar on Climate Finance and Economics   | January 2025<br>Virtual Webinar     |
| <b>How Delayed Learning about Climate Uncertainty Impacts Decarbonization<br/>Investment Strategies</b><br>American Geophysical Union Fall Meeting   | December 2024<br>Washington DC      |
| <b>Learning Climate Sensitivity from Future Observations, Fast and Slow</b><br>American Geophysical Union Fall Meeting   | December 2024<br>Washington DC      |
| <b>*The Timing Versus Allocation Trade-off in Politically Constrained Climate Policies</b><br>The World Bank Group Climate Change Learning Series  | October 2024<br>Washington DC       |
| <b>*Carbon Dioxide as a Risky Asset</b><br>Midwestern Student Conference on Atmospheric Research   | October 2023<br>Urbana, Illinois    |
| <b>Financial Modeling of Climate Risk Supports Stringent Mitigation Action</b><br>European Association of Environmental and Resource Economists Summer Meeting   | June 2023<br>Limassol, Cyprus       |
| <b>Financial Modeling of Climate Risk Supports Stringent Mitigation Action</b><br>Association of Environmental and Resource Economists Summer Meeting  | May 2023<br>Portland, Maine         |
| <b>*Carbon Dioxide as a Risky Asset</b><br>Center for Social and Environmental Futures   | December 2022<br>Boulder, Colorado  |
| <b>Financial Modeling of Climate Risk Supports Stringent Mitigation Action</b><br>American Geophysical Union Fall Meeting  | December 2022<br>Chicago, Illinois  |
| <b>The Role of Local Thermodynamics in Midlatitude Heat Waves</b><br>American Geophysical Union Fall Meeting   | December 2022<br>Chicago, Illinois  |
| <b>*Financial Modeling of Climate Risk Supports Stringent Mitigation Action</b><br>Columbia University Sustainable Development Seminar   | November 2022<br>New York, New York |
| <b>*Exploring the Controls on Temperature Extremes in the Midlatitudes</b><br>UC San Diego Climate Journal Club  | May 2022<br>San Diego, California   |
| <b>Characterization and Analysis of Massive Space Telescopes</b><br>NASA Arizona Space Grant Symposium   | April 2019<br>Tempe, Arizona        |
| <b>Measuring the Dynamical Masses of Sub-millimeter Selected Gravitational Lenses</b><br>Steward Observatory Internal Symposium  | September 2018<br>Tucson, Arizona   |

## Honors, Scholarships, and Achievements

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| <b>NSF Graduate Research Fellowship Program</b><br>National Science Foundation   | August 2022   |
| <b>List of Teachers Ranked as Excellent by Their Students</b><br>University of Illinois Urbana-Champaign Department of Physics | December 2020 |

**The Excellence in Undergraduate Research Award***May 2020*

University of Arizona College of Science &amp; University of Arizona Department of Physics

**Glenn C. Purviance Scholarship***August 2019 — May 2020*

University of Arizona Department of Mathematics

**Grogan Scholarship & Gregson Award***August 2019 — May 2020*

University of Arizona Department of Physics

**Galileo Circle Scholar***May 2018 & May 2019*

University of Arizona Department of Astronomy (2018) &amp; Department of Physics (2019)

**Phi Beta Kappa Society***September 2018*

Alpha of Arizona Chapter

**NASA Space Grant Awardee***September 2018 — May 2019*

University of Arizona and NASA Space Grant Consortium

**Douglass Scholarship & Langadas Scholarship***August 2018 — May 2019*

University of Arizona Department of Physics; University of Arizona Department of Astronomy

**Weaver Research Award***August 2017 — May 2018*

University of Arizona Department of Physics

## Service and Extra Curricular

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**Journal Referee**

- *The Review of Economic Studies*
- *Earth's Future*
- *Journal of Climate*
- *npj Climate Action*
- *Environmental and Resource Economics*
- *Humanities and Social Sciences Communications*

**Graduate Peer Mentor***September 2024 — Present*

University of Illinois Urbana-Champaign Department of Climate, Meteorology, and Atmospheric Sciences

**ESE Summer Camp for Girls Volunteer***July 2024*

University of Illinois Urbana-Champaign

**Undergraduate — Graduate Peer Mentor***September 2022 — May 2024*

University of Illinois Urbana-Champaign Department of Climate, Meteorology, and Atmospheric Sciences

**Graduate Peer Mentor***September 2021 — May 2023*

University of Illinois Urbana-Champaign Department of Physics

**Grad On-Call***September 2020 — May 2021*

University of Illinois Urbana-Champaign Department of Physics

**Undergraduate Peer Mentor***September 2018 — May 2020*

University of Arizona Department of Astronomy

**Physics Discovery Project Developer and Team Member***August 2019 — May 2020*

University of Arizona Department of Physics

## Technical Strengths and Other Information

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**Coding Languages:**

- *Strong:* Python, Mathematica, TeX
- *Beginner:* Julia

**Human Languages:**

- *Native:* English
- *Intermediate:* Italian (B1 Level)