Bryce Wedig

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GitHub: github.com/bryce-wedig

Research Interests

Strong gravitational lensing, dark matter substructure in galaxies, optical/near-IR space telescope image simulation

Education

Washington University in St. Louis — St. Louis, MO, USA
Ph.D. in Physics — 2022–Present
- Advisor: Dr. Tansu Daylan
- A.M. in Physics (en route) achieved May 2024

Trinity College, University of Cambridge — Cambridge, UK
M.Phil. in History and Philosophy of Science and Medicine, *First Class Honours* — 2018–2019
- Dissertation: "Wavefunction ontology and Koopman-von Neumann theory"
- Supervisor: Dr. Jeremy Butterfield

Kenyon College — Gambier, OH, USA
B.A. in Physics, Philosophy, *magna cum laude* — 2014–2018

Lady Margaret Hall, University of Oxford — Oxford, UK
Visiting Student Programme, Physics and Philosophy — 2016–2017

Professional Experience

- **Technical Consultant**, R&D Technical Services, Veeva Systems — Oct 2021–Jun 2022
  Developed and implemented custom software integrations with Veeva Vault and extended system functionality utilizing Vault Java SDK and REST API, Amazon Web Services. Managed integration and development projects.
- **Associate Consultant**, R&D Services, Veeva Systems — Oct 2019–Oct 2021
  Implemented Veeva's Vault cloud software applications at global life sciences companies. Led candidate case study interviews and mentored new hires' mock projects.

Honors and Awards

- **1st Place (Graduate Division)**, Washington University Physics Research Symposium — 2024
- **Future Investigators in NASA Earth and Space Science and Technology (FINESST)** — 2024
  Maximizing JWST and Roman Dark Matter Science with Strong Gravitational Lensing
  $150,000 award over three years
- **First Class (Distinction)**, M.Phil. Dissertation, University of Cambridge — 2019
- **Member**, Phi Beta Kappa, Beta of Ohio, Kenyon College — 2018
- **Distinction**, Senior Exercise in Physics, Department of Physics, Kenyon College — 2018
- **Distinction**, Senior Exercise in Philosophy, Department of Philosophy, Kenyon College — 2018
- **Member**, Sigma Pi Sigma, the Physics Honor Society (American Institute of Physics) — 2017
- **Merit List Scholar**, Kenyon College — 2014–2018
- **Trustee Opportunity Scholarship**, Kenyon College — 2014–2018

Publications

[1] **B. Wedig**, T. Daylan, S. Birrer, F.-Y. Cyr-Racine, C. Dvorkin, D. P. Finkbeiner, A. Huang, X. Huang, R. Karthik, N. Khadka, P. Natarajan, A. M. Nierenberg, A. H. G. Peter, J. D. R. Pierel, X. T. Tang, and R. H. Wechsler, "The Roman View of Strong Gravitational Lenses", *submitted to ApJ*,

Presentations

Contributed Conference Talks

- "The Roman View of Strong Gravitational Lenses" Jan 2025
  245th Meeting of the American Astronomical Society, National Harbor, MD, USA
- "The Roman View of Strong Gravitational Lenses" Dec 2024
  Mid-American Regional Astrophysics Conference, Lawrence, KS, USA
- "The Roman View of Strong Gravitational Lenses" Jul 2024
  Challenging Theory with Roman: From Planet Formation to Cosmology, Pasadena, CA, USA
- "Image Simulation of Strong Gravitational Lenses Detectable by the Roman Space Telescope" Jan 2024
  243rd Meeting of the American Astronomical Society, New Orleans, LA, USA

Seminars

- "Maximizing JWST and Roman Dark Matter Science with Strong Gravitational Lensing" Nov 2024
  Washington University Cosmology and Astroparticle Physics Meeting
  Department of Physics, Washington University in St. Louis
- "The Roman View of Strong Gravitational Lenses" Nov 2024
  Physics Graduate Student Seminar, Department of Physics, Washington University in St. Louis
- "The Roman View of Strong Gravitational Lenses" Apr 2024
  Washington University Cosmology and Astroparticle Physics Meeting
  Department of Physics, Washington University in St. Louis
- "Investigating Dark Matter Substructure with Gravitational Lensing" Nov 2023
  Physics Graduate Student Seminar, Department of Physics, Washington University in St. Louis
- "Lessons for wavefunction ontology from Koopman-von Neumann theory" Easter 2019
  MPhil Seminar, Department of History and Philosophy of Science, University of Cambridge
- "Assessing the Quantum Liar Paradox" Lent 2019
  MPhil Seminar, Department of History and Philosophy of Science, University of Cambridge
- "Is Nature Nonlocal?" Apr 2018
  Senior Exercise, Department of Physics, Kenyon College
- "Reducing quantum noise in LIGO: Characterization of an ultra-low loss polarizing beam splitter" Aug 2016
  Ole Miss Chemistry Summer Research Program, University of Mississippi

Poster Presentations

- "The Roman View of Strong Gravitational Lenses" Nov 2024
  Washington University Physics Research Symposium, Department of Physics, Washington University in St. Louis
- "Image Simulation of Strong Gravitational Lenses Detectable by the Roman Space Telescope" Nov 2023
  Washington University Physics Research Symposium, Department of Physics, Washington University in St. Louis

Service and Public Engagement

- **Judge**, Chambliss Astronomy Achievement Student Awards 2025
  245th Meeting of the American Astronomical Society
- **Organizer**, Splinter Session 2025
  "ExoCore: An open science curriculum for enhanced reproducibility and equity in exoplanet research"
  245th Meeting of the American Astronomical Society
- **Speaker**, Astronomy on Tap STL Oct 2024
- **Co-organizer**, Washington University Cosmology and Astrophysics Seminar 2024–Present
- **Graduate Student Mentor**, Department of Physics, Washington University in St. Louis 2023–Present

Teaching

- **Assistant in Instruction**, Department of Physics, Washington University in St. Louis 2023
  Physics II Laboratory (PHYS 192L), Physics I Laboratory (PHYS 191L)
- **Apprentice Teacher**, Department of Modern Languages and Literatures, Kenyon College 2014–2017
  Intensive Introductory Japanese (JAPN 111-112Y), Intermediate Japanese (JAPN 213-214Y)
- **Teaching Assistant**, Johns Hopkins Center for Talented Youth Summer 2017
  Advanced Topics in Physics: Special Relativity (SREL)
- **Tutor**, Department of Physics, Kenyon College Spring 2016
  Oscillations and Waves (PHYS 245)

Memberships

- **LSST Dark Energy Science Collaboration (DESC)** 2024-Present
- **American Astronomical Society** 2023-Present