

## EDUCATION

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| <b>University of Pennsylvania</b>  | Philadelphia, PA                         |
| • <i>National Science Foundation Graduate Research Fellow</i>                                | <i>June 2018 - Present</i>               |
| <i>Master of Science; PhD Candidate in Physics &amp; Astronomy</i>                           | <i>Anticipated Completion: May, 2024</i> |
| <b>Drexel University</b>   | Philadelphia, PA                         |
| • <i>Bachelor of Science in Physics; Concentration in Astrophysics; Minor in Mathematics</i> | <i>September 2013 - June 2018</i>        |
| <i>Overall GPA: 3.67; Major GPA: 3.74</i>  | <i>Cum Laude and with Honors</i>         |

## FELLOWSHIPS AND HIGHLIGHTED AWARDS

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- Zaccheus Danial Scholarship, University of Pennsylvania, 2023 - 2024
- 1st place, 3 Minute Thesis Competition, University of Pennsylvania, 2023
- Natural Sciences Category Winner, Penn Grad Talks, 2023
- Young Academic Tourette Scholarship, Kenny's Dream Foundation, 2021, 2022
- NASA Group Achievement Award, NN-Explore NEID Radial Velocity Spectrograph, 2020
- Winner, Women in Chemistry's STEM 60-second no-jargon POP Talk, 2019
- National Science Foundation Graduate Research Fellowship Recipient, 2019 - Present
- Hector Tyndale Fellowship Endowment, University of Pennsylvania, 2019

## 1ST-AUTHORED PUBLICATIONS - ADS LIBRARY OF ALL PEER-REVIEWED PUBLICATIONS HERE

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- "Trials and Tribulations in the Reanalysis of KELT-24 b: a Case Study for the Importance of Stellar Modeling" (submitted to ApJ), **Giovinazzi, M. R.**, Cale, B., Eastman, J. D., et al. 2023, *Astronomical Journal*
- "A Mass-Magnitude Relation for Low-mass Stars Based on Dynamical Measurements of Thousands of Binary Star Systems", **Giovinazzi, M. R.**, & Blake, C. H. 2022, *Astronomical Journal*
- "Enhancing Ground-based Observations of Trans-Neptunian Objects Using a Single-epoch Parallax Measurement from L2", **Giovinazzi, M. R.**, Blake, C. H., Bernardinelli, P. H., 2021, *Publications of the Astronomical Society of the Pacific*
- "The HD 217107 Planetary System: Twenty Years of Radial Velocity Measurements", **Giovinazzi, M. R.**, Blake, C. H., Eastman, J. D., et al., 2020, *Astronomische Nachrichten*

## RESEARCH EXPERIENCE

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- **Graduate Research Assistant, NSF Graduate Research Fellow** Philadelphia, PA  
*Advisor: Professor Cullen Blake, University of Pennsylvania* June 2018 - Present
  - Use Bayesian inference and MCMC analyses to infer orbital solutions of planetary and binary star systems
  - Access and employ large datasets from archival sky surveys like Gaia, Hipparcos, 2MASS, and APOGEE
  - Member of NEID (NN-explore Exoplanet Investigations with Doppler spectroscopy) science team
  - Work with TESS and Kepler lightcurves to identify candidate systems for telescope allocation proposals
  - Created mass-magnitude relation with ~10% precision applicable to 30+ million stars in the Gaia catalog
  - Simulated outer solar system objects to promote optimal observing strategies for future GO programs
  - Led comprehensive reanalyses of two exoplanet systems: HD 217107 and KELT-24
  - Developed per-pixel nonlinearity map for NEID's 10k x 10k CCD capable of removing instrumental noise
  - Created visualization for the NEID CCD's unique dither-clocking method
  - Successful observing proposals for NEID/WIYN 2020B and 2023B semesters
  - Seven nights observing at the Fred Lawrence Whipple Observatory using the FAST spectrograph

## OPEN-SOURCE SOFTWARE

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- gorp\_masses  
*GitHub-hosted Python package designed for users to estimate stellar masses according to Giovinazzi & Blake (2022)*

## SELECTED TALKS AND PRESENTATIONS

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- “Extremely Precise Stellar Masses in Highly-accelerating Star Systems”  
-Penn Internal Symposium, Philadelphia, PA, September 15, 2023 (talk)
- “Stellar Mass Measurements in the Era of Precise Astrometry and Radial Velocities”  
-EPRV V, Santa Barbara, CA, March 27 - 31, 2023 (poster)
- “Mass-Magnitude Relation for Low-mass Stars Based on Dynamical Measurements of Thousands of Binary Star Systems”  
-2022 Sagan Exoplanet Summer Workshop, Pasadena, CA, July 25 - 29, 2022 (talk + poster)
- “The HD 217107 Planetary System: Twenty Years of Radial Velocity Measurements”  
-2021 Sagan Exoplanet Summer Workshop, Pasadena, CA, July 19 - 23, 2021 (talk + poster)  
-exoplanet-talks.org, Virtual Talk, January 12, 2021 (talk)
- “NEID Precision Radial Velocity Spectrometer: Characterization and Operation of the NEID CCD Detectors”  
-2019 Sagan Exoplanet Summer Workshop, Pasadena, CA, July 15 - 19, 2019 (talk + poster)  
-223rd Meeting of the American Astronomical Society, Seattle, WA, January 6 - 10, 2019 (poster)
- “Simulating Planetary Systems within Star Clusters”  
-2018 Sagan Exoplanet Summer Workshop, Pasadena, CA, July 23 - 28, 2018 (talk + poster)

## PUBLIC SCIENCE TALKS

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- Astronomy on Tap  
*Interactive talk curated to give adult members of the public an introduction to the radial velocity method*
  - “Planetary Hide ‘n Seek: Searching for the Galaxy’s Most Elusive Worlds”, April 21, 2022 (20 participants)
- “The Exciting World of Exoplanets”  
*Interactive talk curated to give members of the public (generally high school and above) an introduction to exoplanets*
  - Virtual Invited Talk / Santa Fe Stargazers, September 15, 2021 (20 participants)
  - Virtual Talk / Self-Advertised, June 10, 2021 (60 participants)
  - Delsea Regional High School, Franklinville, NJ, May 22, 2019 (50 participants)

## LEADERSHIP

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- **Organizer, Philadelphia Astronomy on Tap** *April 2022 - Present*
  - Coordinate speakers, advertise and emcee monthly events that host local astronomers for public science talks
- **Founder, Penn GRAD (Graduate Readiness and Application Development)** *August 2018 - Present*
  - Supervised 100+ undergraduates applying to graduate physics programs with 20+ Penn grad students
  - Created and led workshops for selecting schools, writing statements of purpose and CVs
  - Built free, distributable resources for students to manage school lists, deadlines, GREs, and more
  - 2020 Penn GRAD Virtual Summer Academy (30 students across 5 colleges + 1 high school)
- **Astronomy Ambassador, American Astronomical Society** *January 2019 - Present*
  - Program for early-career astronomers to encourage outreach activities with diverse audiences

## TEACHING AND MENTORING EXPERIENCE

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- **Led Research Project with High School Students** *June 2022 - Present*
  - “Exoplanet Follow-ups with CARMENES and TESS”  
-Albani & Giovinazzi 2023, *submitted* to Journal of Emerging Investigators
  - “The Journey to Proxima Centauri b”  
-Ramaswamy & Giovinazzi 2023, *accepted* to Journal of Emerging Investigators
- **Peer Mentorship, UPenn Physics & Astronomy Department** *September 2020 - Present*
  - Mentored five first-year Penn Physics graduate students throughout their first year at Penn
- **Mentor to Undergraduates, Penn GRAD** *September 2018 - Present*
  - Worked individually with 10 Senior Physics undergraduates to help them apply to graduate programs
- **Teaching Assistant** *August 2018 - December 2022*
  - Led weekly, hour-long problem-solving lectures for PHYS 102 (Fall ’21, ’22), 50 students each
  - Taught + graded 10 hr/wk across six PHYS 101/102 lab sections (Fall ’18, Spring ’19), 63 students total