

Gene Carlo Belinario, M.Sc.

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Research Interests

- ▶ **Gravitational Waves, Cosmology, Computational Physics**
- ▶ Astrophysics, General Relativity, Physics Education, Data for Social Good

Education

- 2023 – 2025 ▶ **Master of Science in Physics**
National Institute of Physics, University of the Philippines Diliman (UPD)
Thesis: *Constraining cosmic gravity with gravitational-wave standard sirens*
Supervisor: [Ian Vega, Ph.D.](#)
Co-mentors: [Reggie Bernardo, Ph.D.](#) & [Reina Reyes, Ph.D.](#)
- 2018 – 2023 ▶ **Bachelor of Science in Applied Physics (Instrumentation)**
National Institute of Physics, University of the Philippines Diliman
Honors: *Magna Cum Laude*
Thesis: *Gravitational lensing signatures in gravitational-wave signals from compact binary coalescences*
Supervisor: [Reina Reyes, Ph.D.](#)

Employment History

- 2023 – 2025 ▶ **Instructor**, National Institute of Physics, University of the Philippines Diliman
- 2023 – 2023 ▶ **Teaching Associate**, National Institute of Physics, University of the Philippines Diliman

Teaching

- Lecturer ▶ Classical Mechanics, Electromagnetism, Optics, Thermodynamics, Computational Physics for Engineering and Science Majors
- Lab ▶ Elementary Mechanics, Electromagnetism, Optics, Modern Physics for Engineering and Science Majors
- Grader ▶ Fundamental Physics, Theoretical Mechanics, Electromagnetic Theory, and Quantum Physics for Physics Undergraduate Students

Admin

- 2024 – 2025 ▶ Head, Technical Services Committee, National Institute of Physics, UPD
- 2023 – 2024 ▶ Member, Examination Committee, Philippine Physics Olympiad 2024
▶ Member, Examination Committee, Philippine Junior Physics Challenge 2024
▶ Member, Curriculum Development Committee, National Institute of Physics, UPD
- 2023 ▶ Member, Technical Committee, 41st Samahang Pisika ng Pilipinas Annual Conference and Meeting | [SPP2023](#)
- 2020 – 2022 ▶ Member-at-Large, Students for the Exploration and Development of Space in the Philippines | [SEDS PH](#)
- 2020 – 2021 ▶ Vice President for Academic Affairs, UP Physics Association, UPD | [UPPA](#)

Admin (continued)

2019 – 2020 ▶ Head, Physics 7X Review Tutorials, UP Physics Association | [UPPA](#)

Skills

Languages ▶ English, Filipino
Coding ▶ Python, C++, Command Line, Mathematica, \LaTeX , HTML
Misc. ▶ Academic teaching and research, \LaTeX typesetting, git

Miscellaneous

Community Involvement

Referee ▶ Proceedings of the Samahang Pisika ng Pilipinas (SPP) | [SPP](#)
Member ▶ Observational Cosmology and Systematics Working Group | [CosmoVerse](#)
 ▶ Data Analysis in Cosmolgy Working Group | [CosmoVerse](#)
 ▶ Gravity Group | [Gravity](#)
 ▶ Data and Computation Research Group | [D&C](#)
Contributor ▶ Gravity Spy, Zooniverse | [Gravity Spy](#)

Awards and Achievements

2023 ▶ **Magna Cum Laude**, College of Science, UPD
2018 – 2023 ▶ **DOST Scholar**, Department of Science and Technology, Republic of the Philippines
 ▶ **University Scholar**, College of Science, UPD

Workshops and Invited Talks



- ▶ **APCTP Workshop on Gravitational Waves 2025**, 20-25 April 2025, *Invited Seminar* by the Asia Pacific Center for Theoretical Physics (APCTP) held at the Institute of Physics, Academia Sinica, Taiwan
- ▶ **1st Jagna Space Encounters - Python for the Stars: Unraveling Space Mysteries with Astronomical Data**, 15-18 January 2025 held at the Research Center for Theoretical Physics (RCTP), Central Visayan Institute Foundation (CVIF), Philippines, *Talk*: “Constraints on cosmic expansion history with standard sirens”
- ▶ **42nd Samahang Pisika ng Pilipinas Physics Conference and Annual Meeting**, 03-06 July 2024 held at the Batangas State University, Philippines, *Contributed Talk*: “Constraining cosmic dark energy with bright standard sirens”
- ▶ **Summer School on Cosmology**, 17-28 June 2024, *Invited Seminar* held at the International Center for Theoretical Physics (ICTP), Italy
- ▶ **LISA Analysis Tools Workshop**, 15-18 April 2024, *Invited Online Seminar*
- ▶ **Frontiers in Theoretical and Experimental Physics**, 11 March 2024, *Invited Seminar* held at the National Institute of Physics, University of the Philippines Diliman
- ▶ **41st Samahang Pisika ng Pilipinas Physics Conference and Annual Meeting**, 19-21 July 2023 held at the Del Carmen Convention Center and Bayay Numancia, Philippines, *Contributed Talk*: “Gravitational lensing signatures in gravitational waves from binary black hole mergers”
- ▶ **6th GW Open Data Workshop**, 15-17 May 2022, *Invited Online Seminar* by the Gravitational Wave Open Science Center

Workshops and Invited Talks (continued)




- ▶ **5th GW Open Data Workshop**, 23-25 May 2022, *Invited Online Seminar* by the Gravitational Wave Open Science Center

Research Publications

Journal Articles

- 1 R. C. Bernardo, D. Grandón, J. L. Said, V. H. Cárdenas, G. C. Belinario, and R. Reyes, “Cosmo-learn: Code for learning cosmology using different methods and mock data,” 2025. arXiv: [2508.20971](https://arxiv.org/abs/2508.20971) [astro-ph.CO].  URL: <https://arxiv.org/abs/2508.20971>.
- 2 E. D. Valentino, J. L. Said, and The CosmoVerse Network, “The CosmoVerse White Paper: Addressing observational tensions in cosmology with systematics and fundamental physics,” *Physics of the Dark Universe*, 2025.  DOI: <https://doi.org/10.1016/j.dark.2025.101965>.

Conference Proceedings


- 1 G. C. Belinario, R. C. Bernardo, and R. Reyes, “Constraining cosmic dark energy using bright standard sirens,” in *Proceedings of the Samahang Pisika ng Pilipinas*, vol. 42, 2024, SPP-2024-2E-01.  URL: <https://proceedings.spp-online.org/article/view/SPP-2024-2E-01>.
- 2 J. Garrido, G. C. Belinario, J. Rodelas, and J. P. Esguerra, “Lessons from the First Philippine Junior Physics Challenge Examination,” in *Proceedings of the Samahang Pisika ng Pilipinas*, vol. 42, 2024, SPP-2024-1E-01.  URL: <https://proceedings.spp-online.org/article/view/SPP-2024-1E-01>.
- 3 G. C. Belinario and R. Reyes, “Gravitational lensing signatures in gravitational waves from binary black hole mergers,” in *Proceedings of the Samahang Pisika ng Pilipinas*, vol. 41, 2023, SPP-2023-1G-04.  URL: <https://proceedings.spp-online.org/article/view/SPP-2023-1G-04>.

In Progress


- 1 G. C. Belinario, R. C. Bernardo, and R. Reyes, “Forecasting cosmic gravity precision with LISA standard sirens,” In preparation for *Journal of Cosmology and Astroparticle Physics*.

References


Ian Vega, Ph.D.

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Reina Reyes, Ph.D.

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