

# AstroChat 58836.7917



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# PhD Bridge Programs in Physics & Astronomy

*The lack of diversity in physics and astronomy PhD programmes is well known but has not improved despite decades of efforts.*

**Table 1 | A comparison of PhD bridge programmes**

| Programme       | Year founded | Student entry point | Number of institutions    | Fields                                                      | Number of students per year | Total number of students in programme |
|-----------------|--------------|---------------------|---------------------------|-------------------------------------------------------------|-----------------------------|---------------------------------------|
| Fisk-Vanderbilt | 2004         | Master's            | 2                         | Astronomy, Physics and Material Science, Biology, Chemistry | 10-20                       | 146                                   |
| Columbia        | 2008         | Post-baccalaureates | 1                         | Multiple science and engineering fields and economics       | 8-10                        | 65                                    |
| APS Bridge      | 2013         | Master's            | 6 out of >25 <sup>a</sup> | Physics (including Astronomy in Physics PhD programmes)     | 40                          | >100                                  |
| Cal-Bridge      | 2014         | Undergraduate       | 25                        | Physics and Astronomy                                       | 40                          | 99                                    |

<sup>a</sup>Six programmes are APS Bridge Program sites. More than 25 are APS Bridge Program partnership institutions, which do not have the same processes of vetting or expectations of programming as the original bridge sites

[PhD bridge programmes as engines for access, diversity and inclusion](#) (Rudolph, Holley-Bockelmann & Posselt, *Nature Astronomy*, 06 December 2019)

# Coming Opportunities

## Research Programs

- [LPI Summer Intern Program in Planetary Science](#) (Deadline: January 6, 2020) [Recommendations](#)
- [SETI Institute's Research Experience for Undergraduates](#) (Deadline: February 1, 2020)
- [Berkeley SETI Research Center Summer Research Undergraduate Internships](#) (Deadline: February 7, 2020)
- [Arecibo Observatory's Research Experience for Undergrads & Teachers](#) (Deadline: February 10, 2020)
- [Puerto Rico NASA Space Grant Fellowship Competition](#) (Deadline: June 2020)
- [PR LSAMP Research Opportunities for Undergraduate Students](#) (local and international)
- [Fulbright U.S. Student Program](#) (international)

## Conferences

- [51st Lunar and Planetary Science Conference](#) (Deadline: January 7, 2020)
- [JTM/PRISM 2020](#) (Deadline: March 18, 2020)

## Graduate School

- [APS Bridge Graduate Student Program](#) (Deadline: March 30, 2020)
- [University of Washington Astrobiology Program](#)
- [Penn State Astrobiology Program](#)
- [Origins Institute Collaborative Graduate Program in Astrobiology](#) (Canada)

# Basic Professional Astronomers Skills

- ☐ Learn to program (e.g. [Python](#), [IDL](#), [Mathematica](#)).
- ☐ Learn to use astronomical databases (e.g. [ADS](#), [arXiv](#), [SIMBAD](#), [NASA Exoplanet Archive](#), [MAST](#)).
- ☐ Learn to use advance statistical methods (e.g. [Monte Carlo](#), [Bayesian Analysis](#), [Machine Learning](#)).
- ☐ Know the astronomical decadal surveys (e.g. [Astro 2020](#), [NASA Astrophysics 2020](#)).
- ☐ Publish your code and data (e.g. [GitHub](#)).
- ☐ Write papers in Latex (e.g. [Overleaf](#), [Authorea](#), [Jupyter Notebook](#)).
- ☐ Write proposals (e.g. [NSF Astronomy](#), [NASA NSPIRES](#)).
- ☐ Present at astronomy conferences (e.g. [AAS](#), [DPS](#), [NASA Astrobiology](#), [LPSC](#)).
- ☐ Publish in top astronomical journals (e.g. [ApJ](#), [MNRAS](#), [A&A](#), [Nature Astronomy](#), [Icarus](#)).
- ☐ Share results online with the general public (e.g. [EurekAlert](#), [Twitter](#)).