

## Goal: A larger and more diverse next generation of accelerator physicists to support ambitious future of HEP

**Intermediate Steps: “Advertising”** -- accelerator physics cannot hope to recruit a more diverse future generation if people don't know it exists as a degree/career path

**How: Outreach and research opportunities for undergraduate students [1]**

- We need more students who are **well prepared** with strong backgrounds applying to graduate programs [2]
- Facility tours/events, guest speakers from facilities
- **Expand “advertising” outside of pure physics to adjacent fields**
  - Engineering, computer/data science, material science, chemistry, etc.

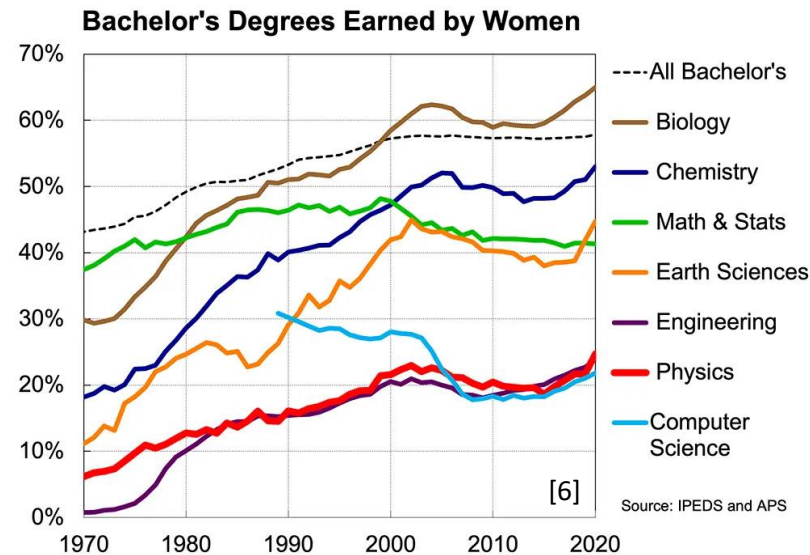
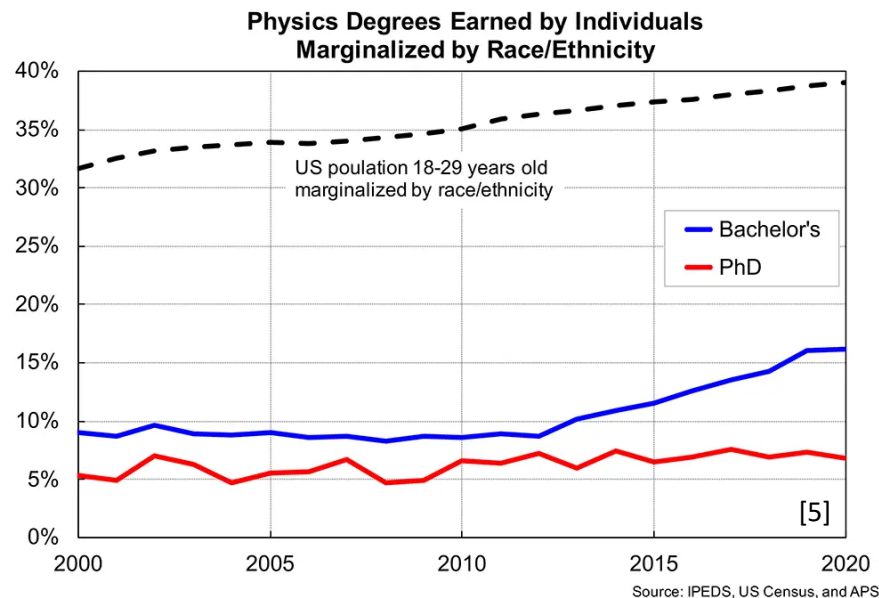
**Accelerator Physics is more than bolting together beamlines:**

- **Materials/Cond. Matter research**
- **Beam dynamics/computation**
- **Machine Learning**

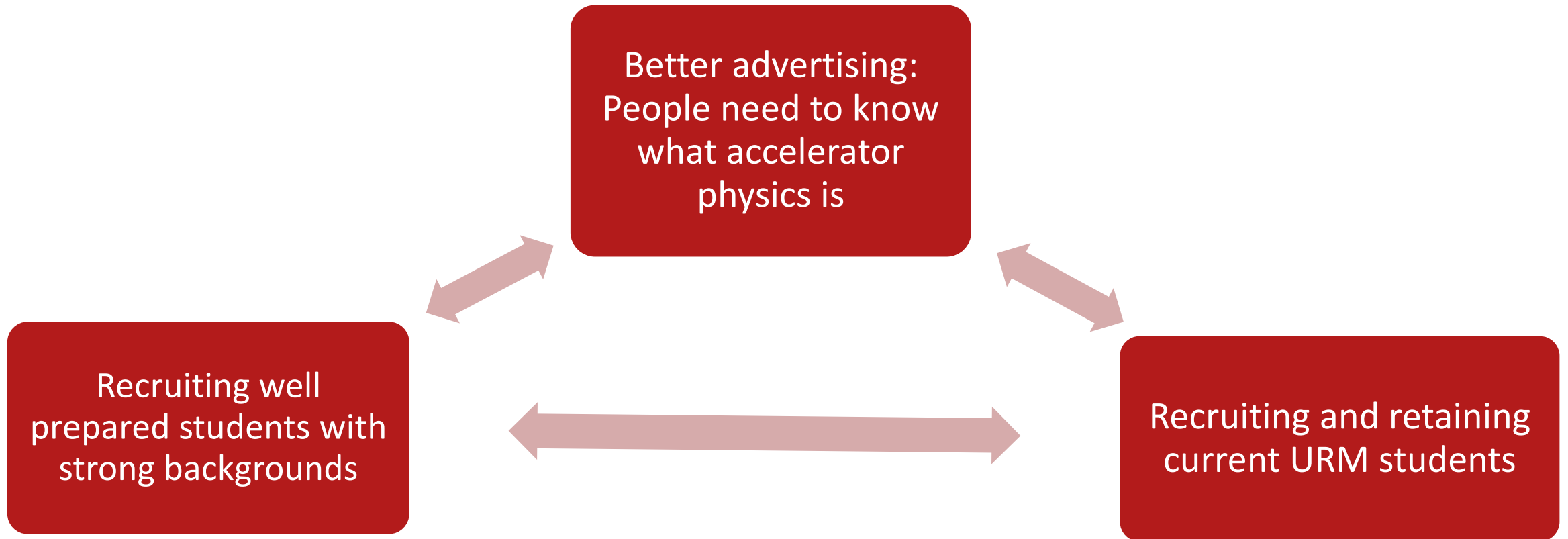
## Goal: Maintain current students from underrepresented and marginalized groups

Start from the top down: Keep up with latest research on physics climate, *especially those in positions of power* [3]

Solidarity amongst URM students increases retention during graduate school [4]



**Why P5 Should Care:** **Particle physics relies on accelerators** and accelerator physics. The future of particle physics and the future of accelerator physics are inseparable.



1. Maxwell Franklin, Eric Brewe, and Annette R. Ponnock. Examining reasons undergraduate women join physics. Phys. Rev. Phys. Educ. Res. 19, 010110 – Published 21 February 2023.  
<https://doi.org/10.1103/PhysRevPhysEducRes.19.010110>
2. Report of the HEPAP Subcommittee for Review of the United States Particle Accelerator School (2015).  
[https://science.osti.gov/-/media/hep/hepap/pdf/Reports/HEPAP\\_USPAS\\_Subcommittee\\_Final\\_Report.pdf](https://science.osti.gov/-/media/hep/hepap/pdf/Reports/HEPAP_USPAS_Subcommittee_Final_Report.pdf)
3. M. Dancy and A. Hodari, “How well-intentioned white male physicists maintain ignorance of inequity and justify inaction,” arXiv:2210.03522.
4. Scherr, R. E., Lopez, M. A., & Rosario-Franco, M. (2020). Isolation and connectedness among Black and Latinx physics graduate students. Physical Review Physics Education Research, 16(2), 020132.  
<https://doi.org/10.1103/PhysRevPhysEducRes.16.020132>
5. Physics degrees earned by underrepresented minorities, AIP: Education and Diversity (College Park, MD). from  
<https://www.aps.org/programs/education/statistics/phdpopulation.cfm>.
6. Bachelor’s degrees earned by women, by major, AIP: Education and Diversity (College Park, MD). from  
<https://www.aps.org/programs/education/statistics/womenmajors.cfm>.

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