

Facts of Life

Data from www.aip.org

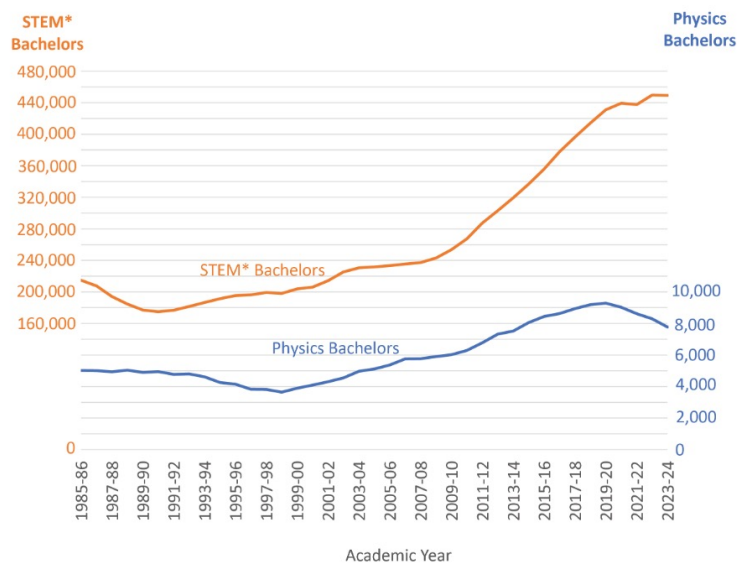
Opinions from Kieran Mullen

Outline:

- Physics Majors data
 - Production
 - Employment
- Astronomy Majors data
 - Production
 - Employment
- Ph.D. data.
 - Population and support
 - Employment.
- Funding for science.
- AI use

Physics Majors

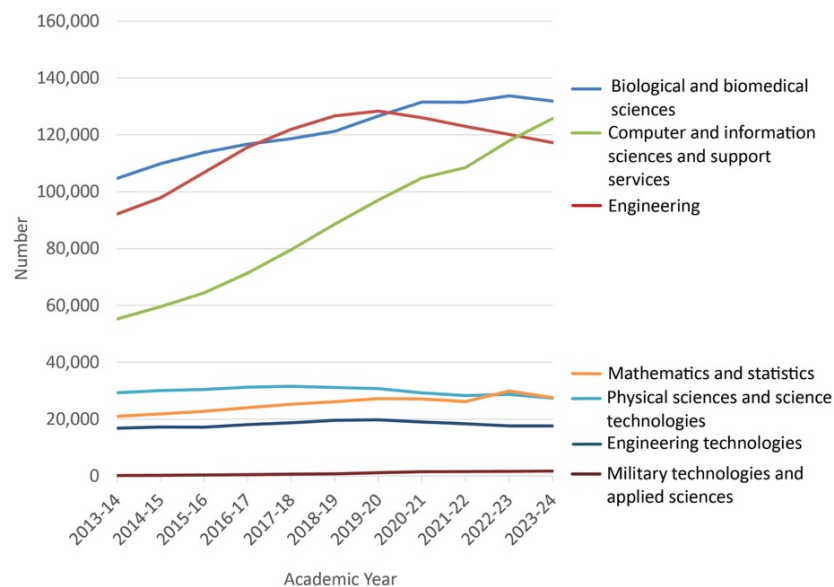
Physics Bachelors and STEM* Bachelors Produced in the United States, Academic Years 1985-86 through 2023-24



*STEM (science, technology, engineering and mathematics) includes biological science, computer and information sciences, engineering, engineering technologies, mathematics and statistics, military technologies and applied sciences, physical sciences, and science technologies.

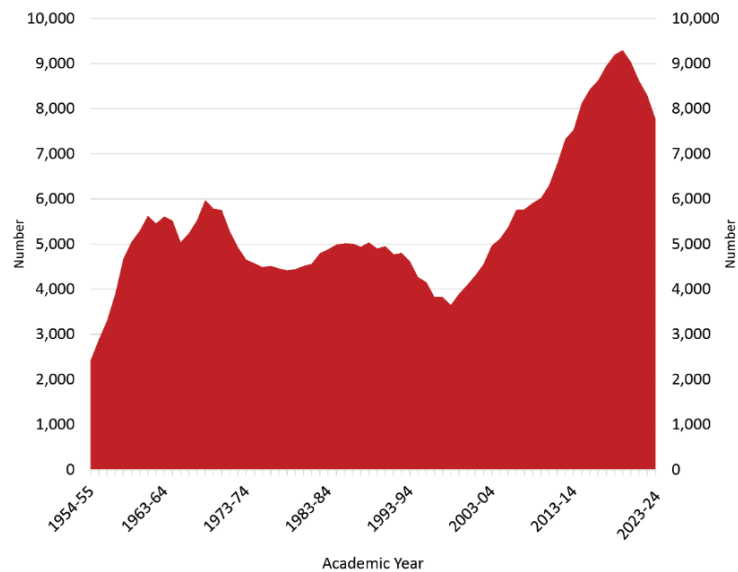
Sources: STEM data: NCES Digest of Education Statistics (IPEDS Completions Survey Data). Physics Bachelor data: AIP Resea

Bachelor's Degrees Awarded in Selected Fields, Academic Years 2013-14 through 2023-24

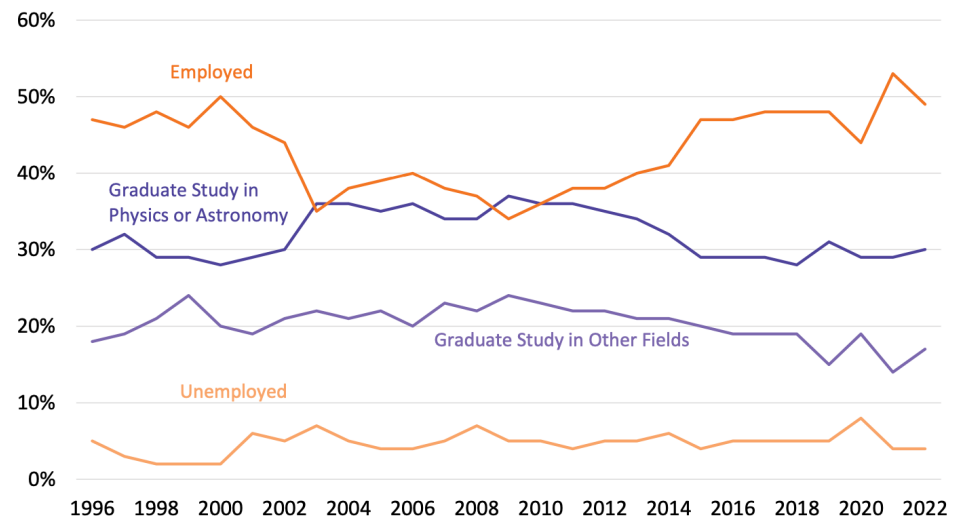


Source: NCES Digest of Education Statistics (2012-13 through 2021-22), IPEDS Completions Survey (2022-23 through 2023-24)

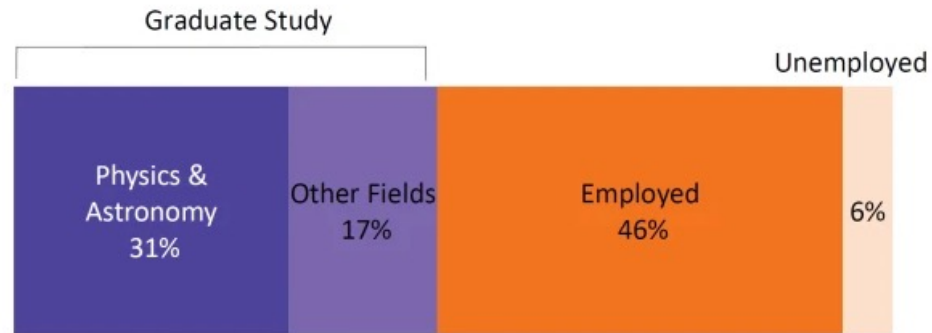
**Physics Bachelor's Degrees Awarded,
Academic Years 1954-55 through 2023-24**



**Status of Physics Bachelors One Year After Degree,
Academic Years 1996 through 2022**



Status of Physics Bachelors One Year After Degree,
Classes of 2019 and 2020 Combined



Status of Physics Bachelors One Year After Degree,
Academic Years 2020-21 and 2021-22

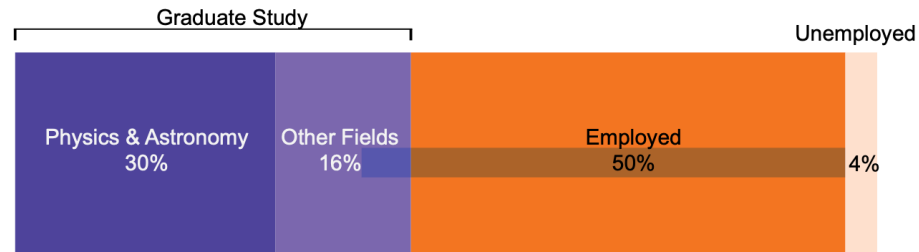
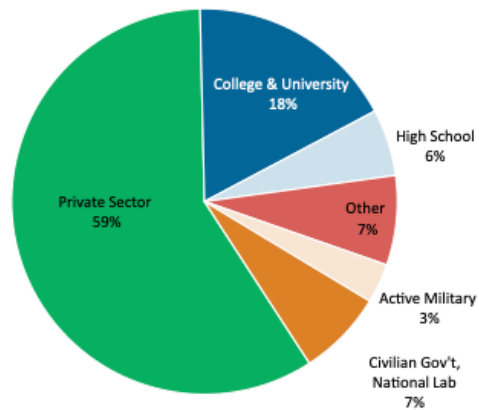
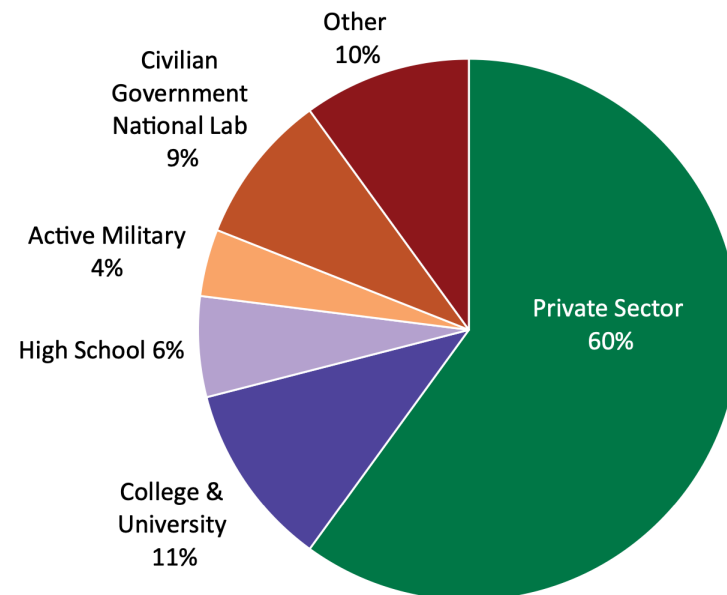


Figure based on 3,939 responses.

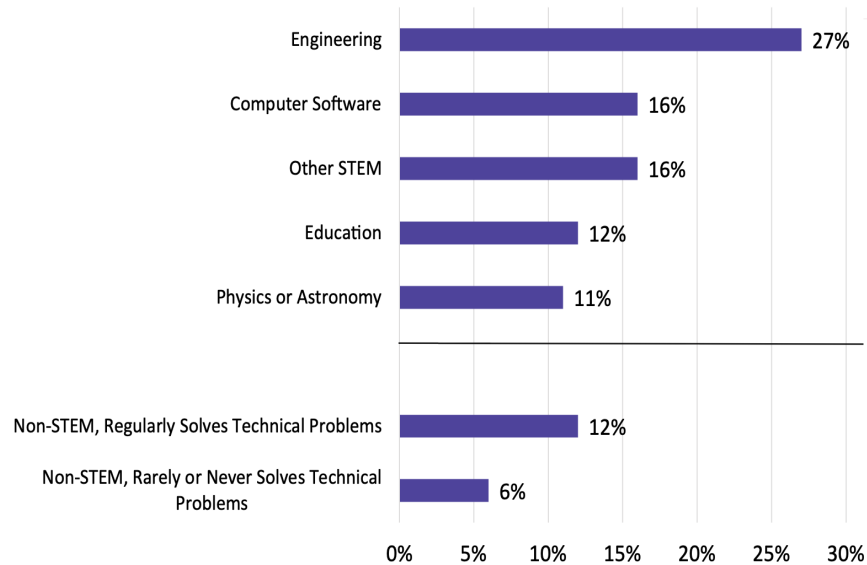
Initial Employment Sectors of New Physics Bachelors,
Classes of 2019 & 2020 Combined



Initial Employment Sectors of New Physics Bachelors,
Academic Years 2020-21 and 2021-22



Field of Employment for New Physics Bachelors, Academic Years 2020-21 and 2021-22



Starting Salaries for New Physics Bachelors, Academic Years 2020-21 and 2021-22

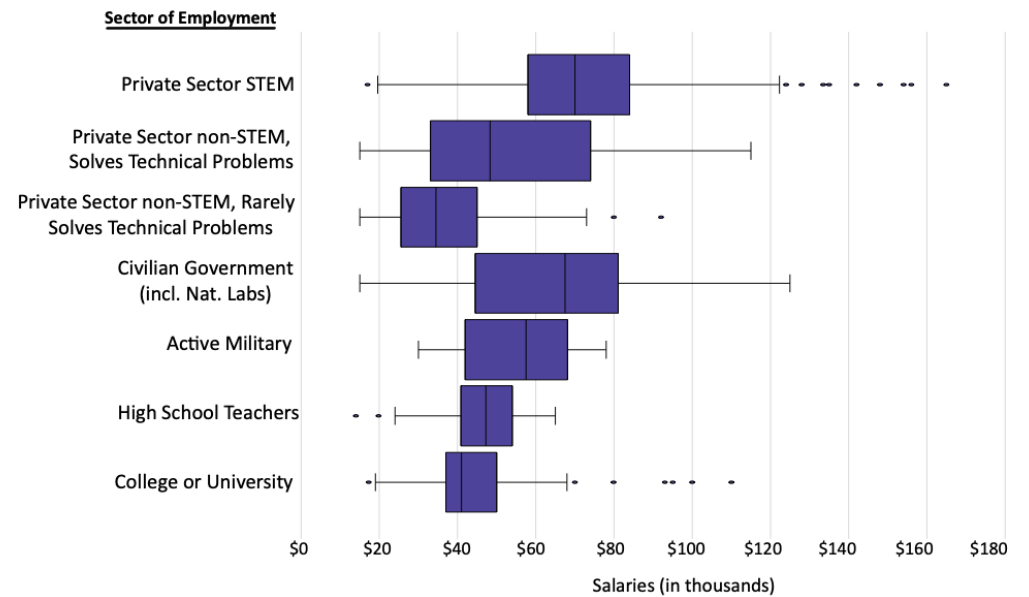
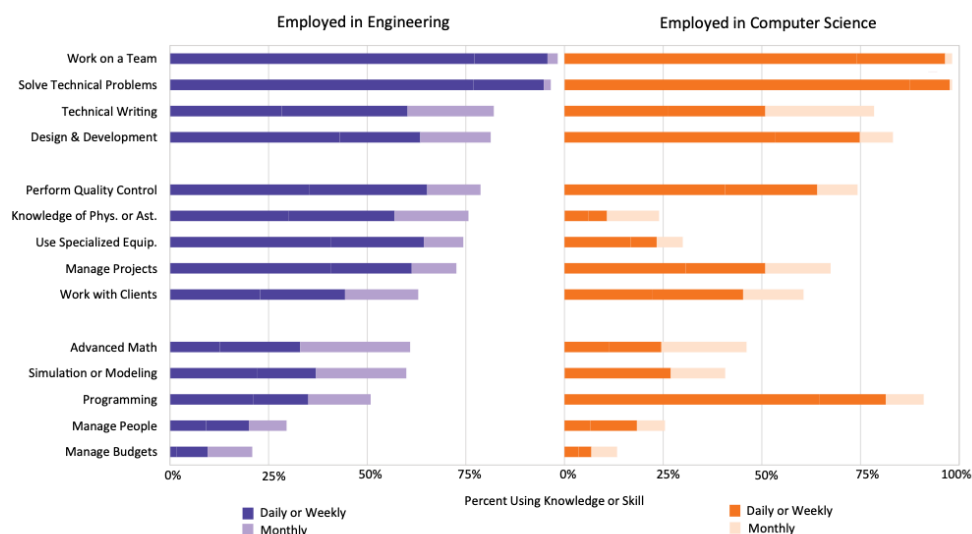


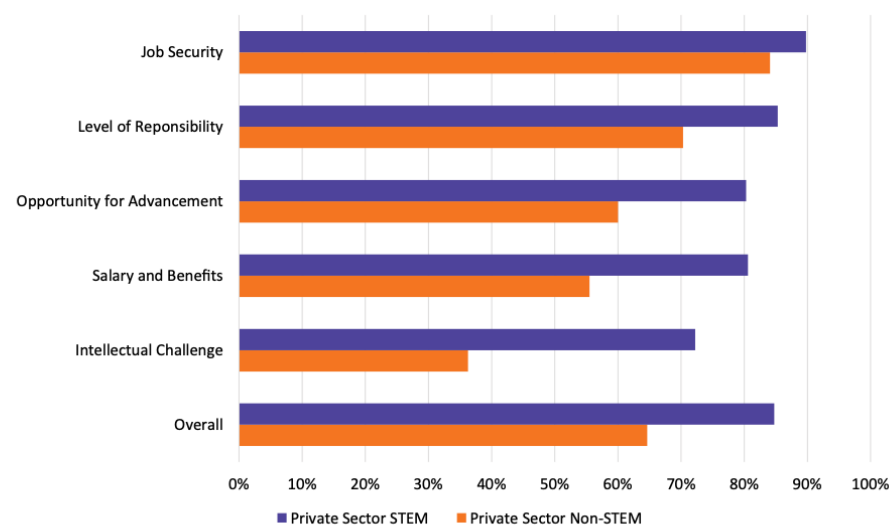
Figure only includes starting salaries for full-time employed, US educated physics bachelor's degree recipients from the academic years of 2020-21 and 2021-22 combined. The box represents the middle 50% (25th to 75th percentile) of the salaries. The vertical line within the box represents the median salary. The full starting salary range, excluding outliers, is represented by the lines extending to each side of the box. The dots outside the lines are statistical outliers, but actual salaries. STEM refers to positions in science, technology, engineering, and math.

Knowledge and Skills Used by New Physics Bachelors Employed in the Private Sector, Academic Years 2020-21 and 2021-22



Percentages represent physics bachelors who choose "daily," "weekly," or "monthly" on a four-point scale that also included "never or rarely."

Job Satisfaction of Physics Bachelors in Private Sector Positions, Academic Years 2020-21 and 2021-22



STEM refers to natural science, technology, engineering, and mathematics. Percentages represent the physics bachelors who chose "very satisfied" or "somewhat satisfied" on a four-point scale that also included "somewhat dissatisfied" and "very dissatisfied." Sixty percent of new physics bachelors who were employed in the winter following receipt of their degree were employed in the private sector, of which 76% were employed in STEM fields and 24% were employed in non-STEM fields.

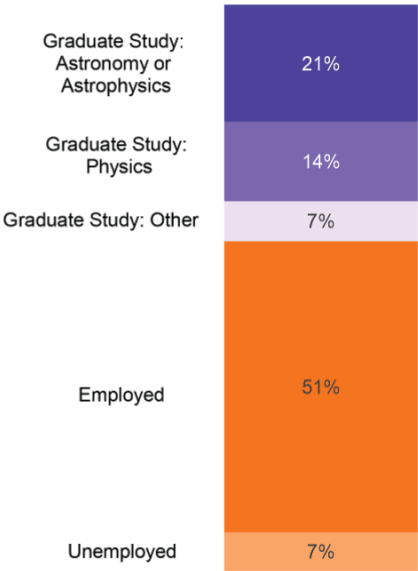
Astronomy Majors

Demographic Profiles of Astronomy Bachelor's Degree Recipients,
Academic Years 2021-22, 2022-23 and 2023-24

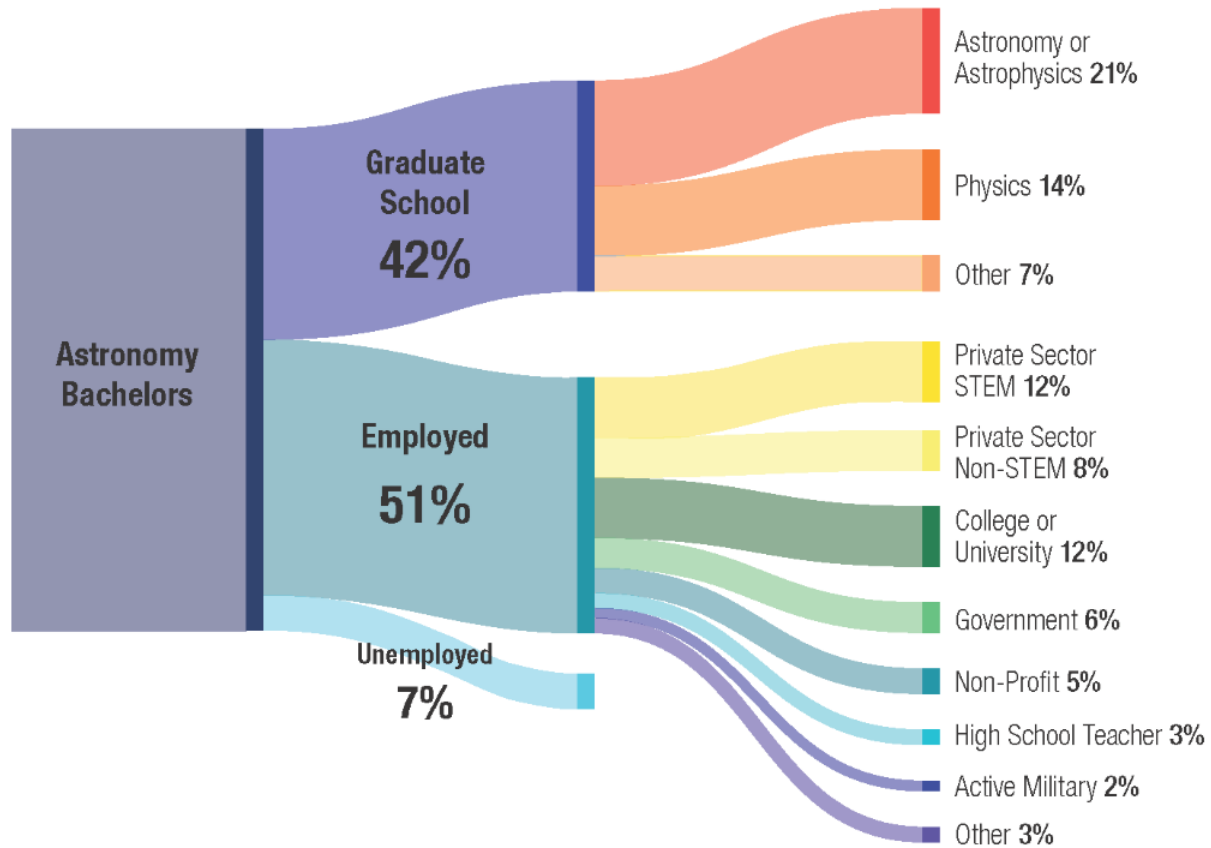
Gender*	Men	59%
	Women	41%
Citizenship*	US	89%
	Non-US	11%
Age	20-23	83%
	24+	17%
Double Major	No	44%
	Yes	56%

*Data from AIP's Enrollments and Degrees Survey. The departments identified 1% of their astronomy bachelors as having a gender identity other than a man or woman and are not represented in this table. In the AIP Astronomy Bachelor's Follow-Up Survey, 8% of respondents selected a gender other than "man" or "woman".

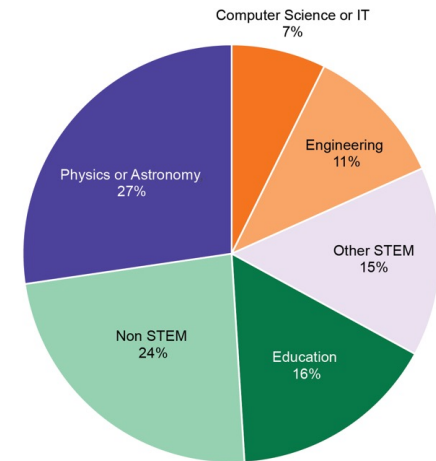
Status of Astronomy Bachelors One Year After Degree,
Degree Recipients from Academic Years 2021-22, 2022-23, and 2023-24



1 Year Later

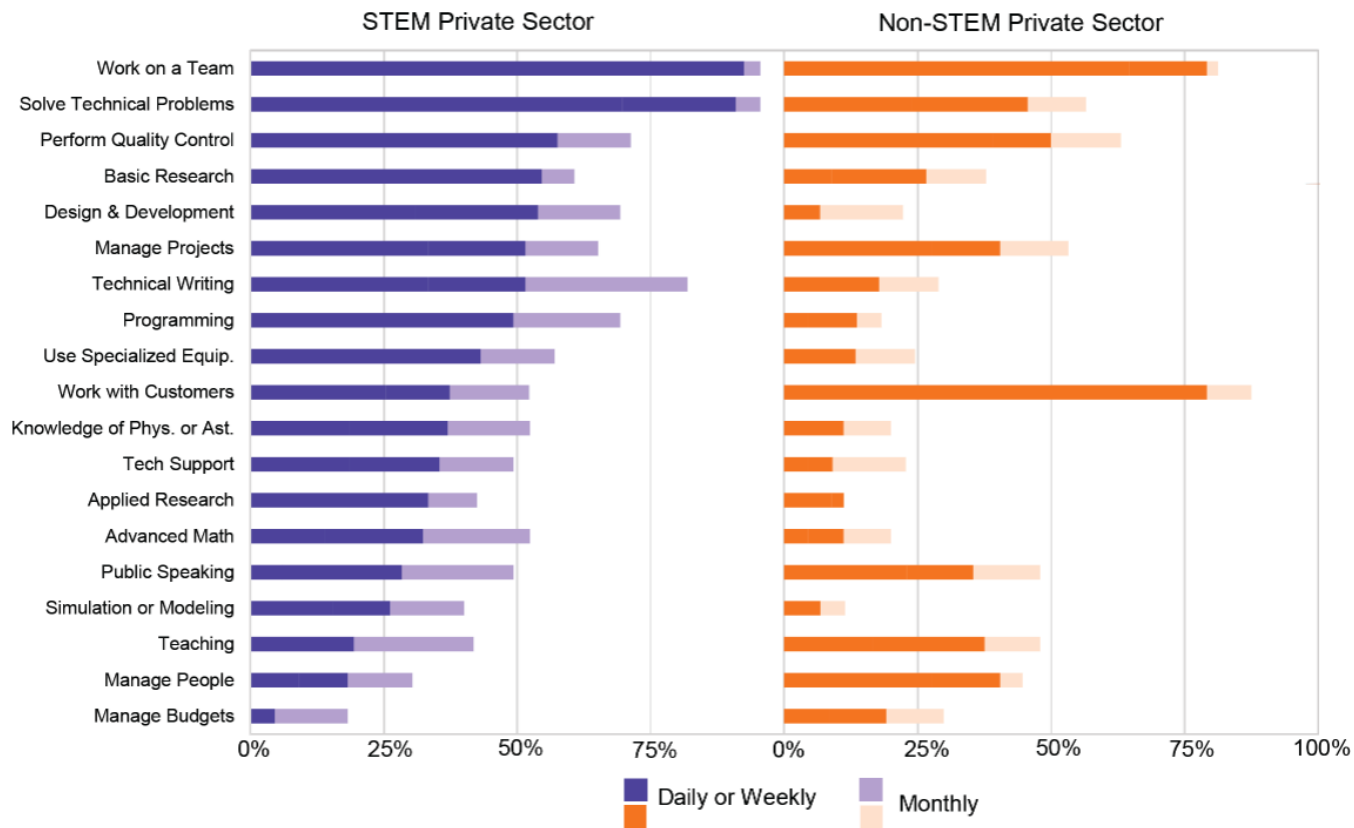


Employment Fields for New Astronomy Bachelors,
Degree Recipients from Academic Years 2021-22, 2022-23, and 2023-24



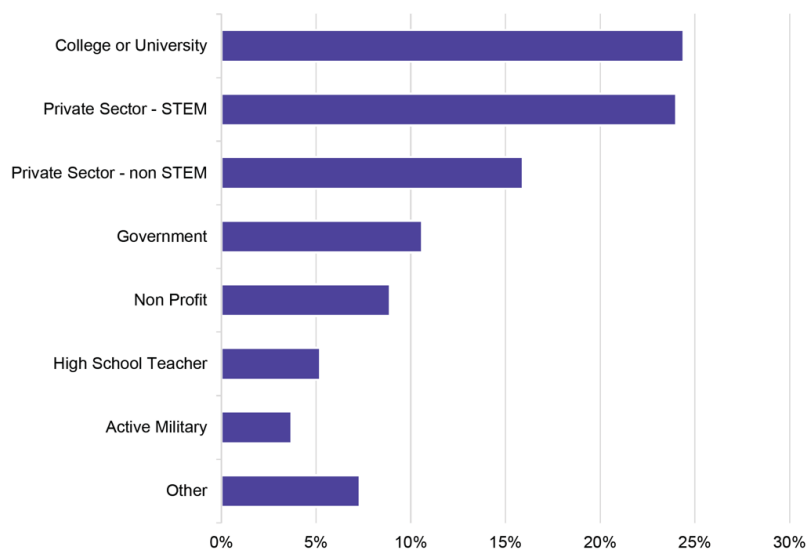
STEM refers to positions in science, technology, engineering, and mathematics.

Knowledge and Skills Used by New Employed Astronomy Bachelors, Degree Recipients from Academic Years 2021-22, 2022-23, and 2023-24



Percentages represent astronomy bachelors who chose “daily,” “weekly,” or “monthly” on a four-point scales that also included

**Employment Sectors for New Astronomy Bachelors,
Degree Recipients from Academic Years 2021-22, 2022-23, and 2023-24**



The "Other" category is mostly comprised of middle schools and medical facilities. STEM refers to positions in science, technology, engineering, and mathematics.

**Starting Salary Ranges for New Astronomy Bachelors,
Degree Recipients from Academic Years 2021-22, 2022-23, and 2023-24**

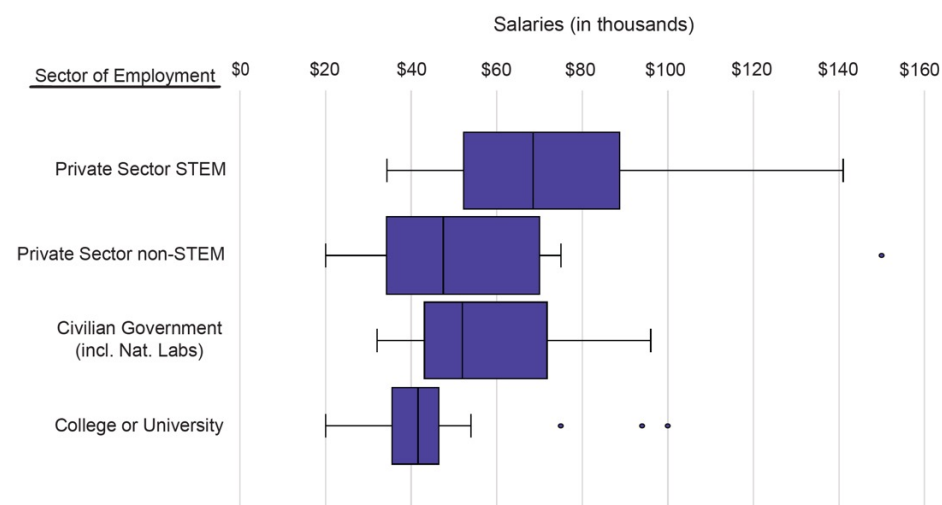
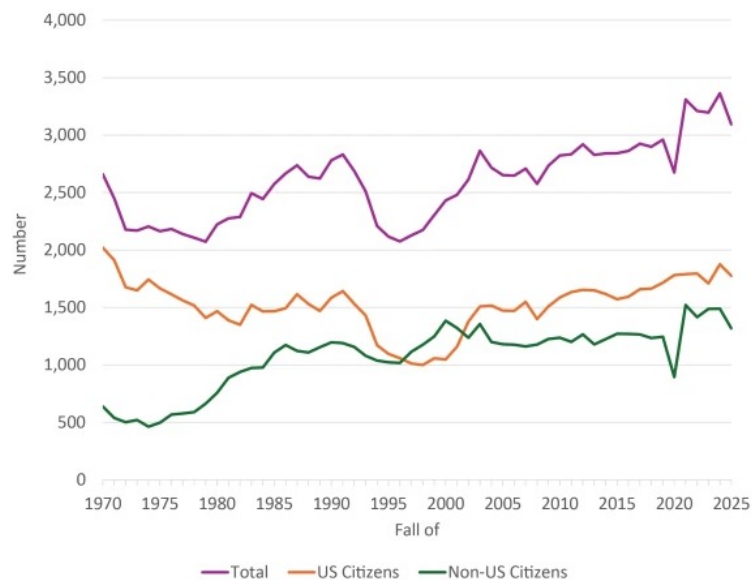


Figure only includes starting salaries for full-time employed, US educated astronomy bachelor's degree recipients from academic years 2021-22, 2022-23, and 2023-24. The box represents the middle 50% (25th to 75th percentile) of the salaries. The vertical line within the box represents the median salary. The full starting salary range, excluding outliers, is represented by the lines extending to each side of the box. The dots outside the lines are statistical outliers, but actual salaries. STEM refers to positions in science, technology, engineering, and mathematics.

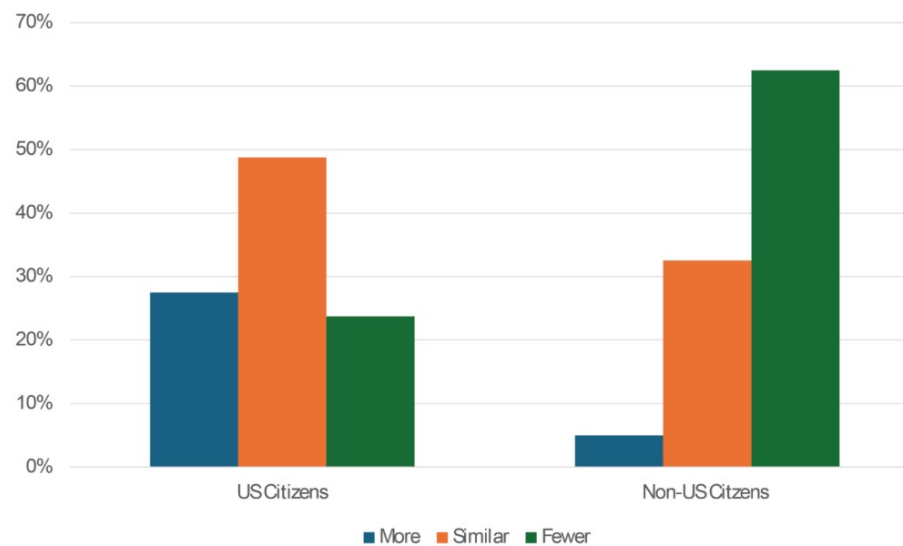
Graduate School:

Number of First-Year Graduate Students at PhD-Granting Physics Departments



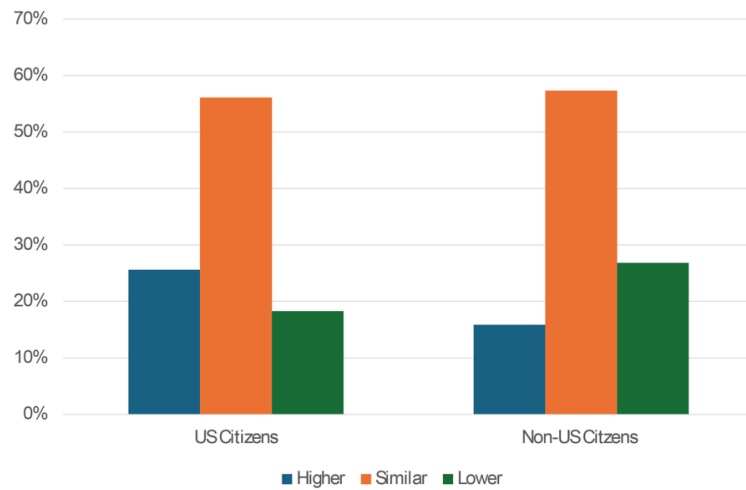
Source: AIP Enrollments and Degrees Survey

Change in the Number of Fall 2026 First-Year Graduate Student "Applications Received" Compared to the Previous Year



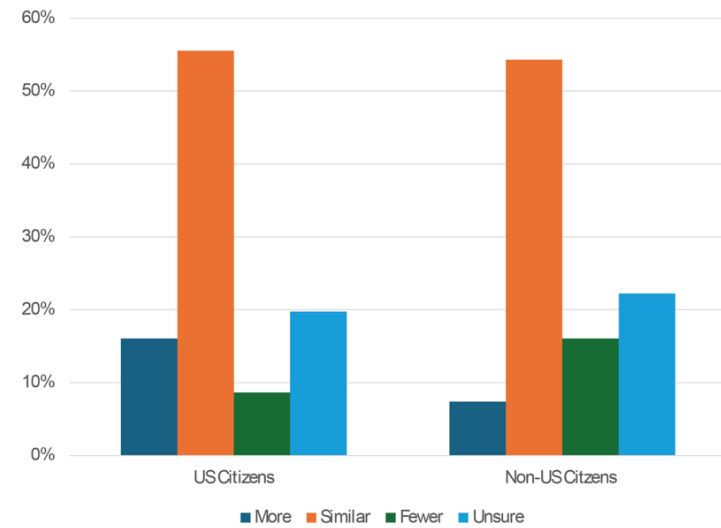
Note: Figure limited to PhD-granting physics and astronomy departments.

Enrollment Offer Acceptances (Yield) for Fall 2026 Compared to Expectations



Note: Figure limited to PhD-granting physics and astronomy departments.

Department's Expected Change in the Number of Graduate Program Enrollment Offers, Fall 2027 vs Fall 2026



Note: Figure limited to PhD-granting physics and astronomy departments.

Decline of Ph.D. Admissions Could Imperil a ‘Generation of New Talent’

Some of the nation’s top research universities are shrinking doctoral programs because of uncertain federal funding.

The number of students admitted to Ph.D. programs this fall dropped 15 percent from the previous year, according to data from over 50 top research universities, raising fears that the nation’s capacity to produce new science could be diminished.

The decline is driven, in part, by a chaotic and unpredictable federal funding environment under the Trump administration, as federal cuts are promised and then reversed, and budgets remain unclear.

“It’s a loss for the nation,” she said. “When you shrink the pipeline of basic discovery research, you choke off the flow of future solutions, innovations and cures — and you shrink the supply of future scientists.”

The California Institute of Technology, another of the nation’s premier research institutions, said it would reduce its new graduate students by 40 percent in fall 2026 across the board. The reason was not specific cuts, but a lack of funding certainty, David Chan, the university’s dean of graduate studies, said in an interview.

“The hope is to go back to historic numbers, but we don’t know when that will happen,” he said, adding that decisions for fall 2027 have not been made yet “given how quickly things are changing.”

New York Times



By **Vimal Patel**

July 6, 2026 Updated 10:22 a.m. ET

Jessica Werk, the astronomy department chair at the University of Washington, said the institution was facing a mix of state budget cuts and worries about the Trump administration’s proposals.

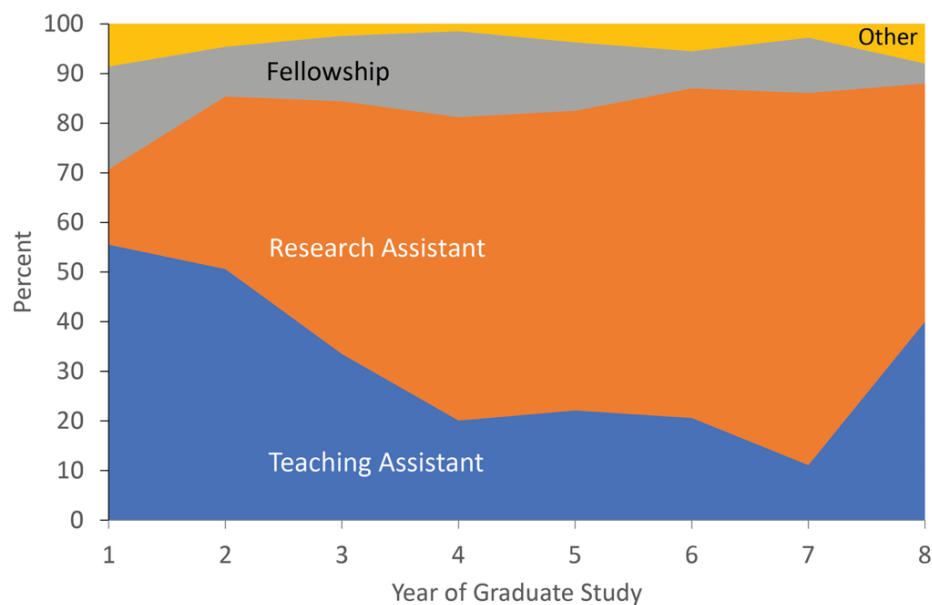
“There’s all these external factors that are just kind of pressing in on us,” said Dr. Werk, whose department typically hires about four new doctoral students a year from an application pool of about 400.

She decided not to take any new doctoral students in fall 2026 — the first time at least since 2016, when she joined the department. She said the department planned to hire again in fall 2027.

The data from the A.A.U. institutions also show a decline in applications to Ph.D. programs — a gauge of demand — driven by international students. While applications from domestic students increased by 3 percent, applications from international students fell by 21 percent.

The Trump administration has taken a series of actions that experts say have dampened the desire of international students to study in the United States, including delaying visa interviews, expanding a ban on travel from certain countries and screening the social media posts of applicants for speech deemed anti-American.

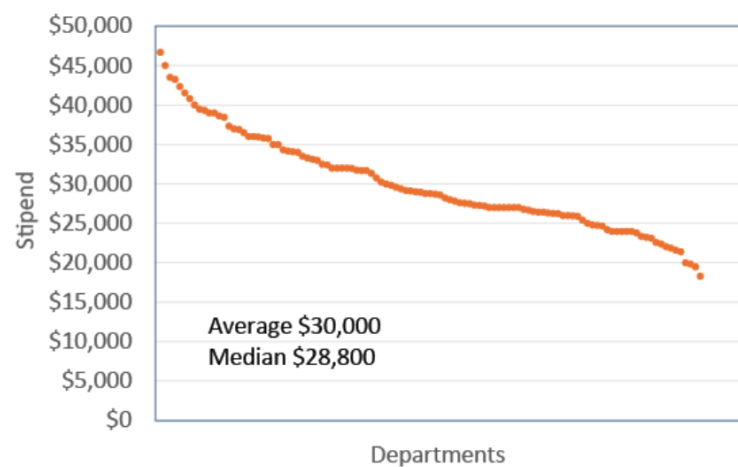
**Primary Type of Support for Physics Doctoral Students,
Academic Year 2020–21**



**Average Typical Annual Assistantship Stipend by Institutional
and Departmental Characteristics, Academic Year 2023–24**

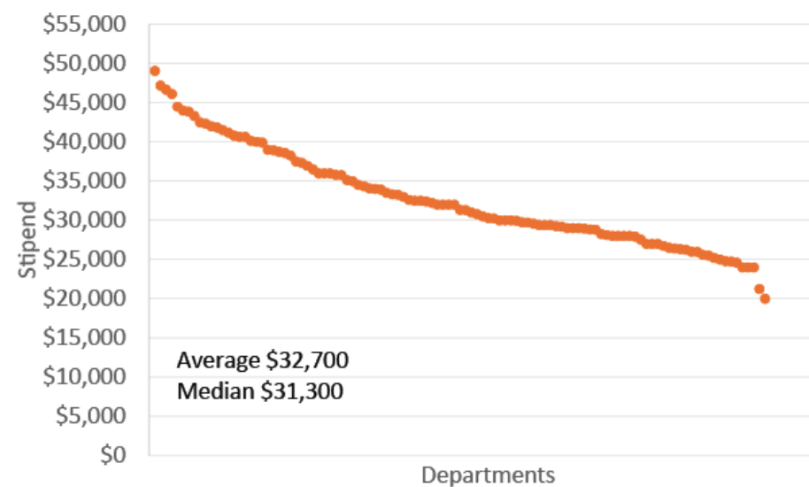
	1 st -Year Student Teaching Assistantship Stipend	5 th -Year Student Research Assistantship Stipend	Percent of Departments
Control			
Private	\$36,000	\$38,100	27%
Public	\$27,800	\$30,500	73%
Carnegie Classification			
R1	\$30,900	\$33,600	74%
R2	\$27,600	\$30,100	26%
Size of Physics Graduate Program (AY 23–24)			
< than 100 graduate students	\$28,200	\$30,200	68%
100 + graduate students	\$33,900	\$35,300	32%
Carnegie Classification: R1 - Very High Research Activity R2 - High Research Activity			

First-Year Teaching Assistantship Stipends by Department



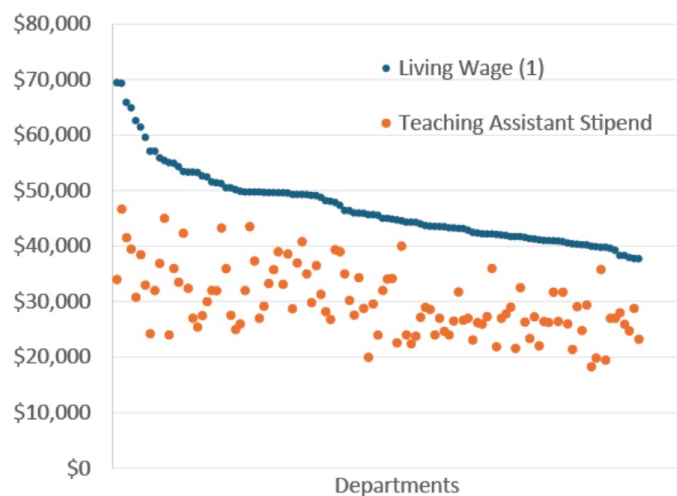
Typical stipend offered is for 12 month academic year (2023–24) at a specific PhD-granting physics department.

Fifth-Year Research Assistantship Stipends by Physics Department



Typical stipend offered is for 12 month academic year (2023–24) at a specific PhD-granting physics department.

Teaching Assistantship and Living Wage (1) by Department



Living Wage (1): The annual income required for a single individual, with no children, living alone in a studio apartment.



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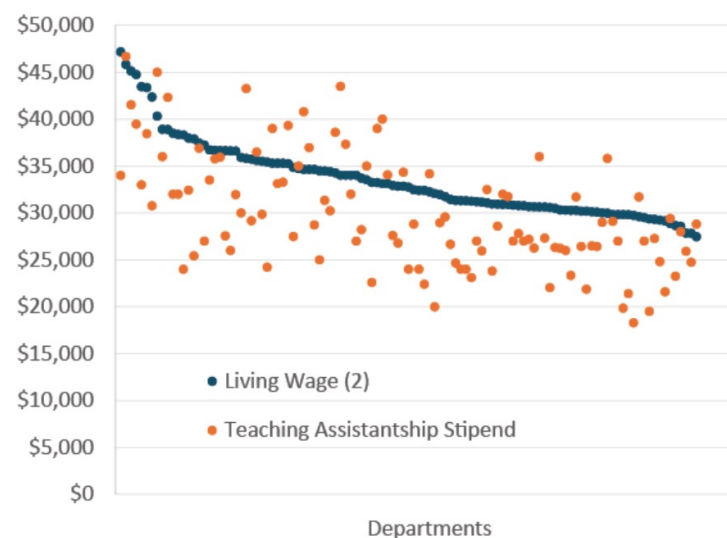
Living Wage (1): Annual income needed for one individual, no children, living alone, renting a studio apartment within the university's zip code.

Teaching assistant stipend is the typical annual stipend offered to a full-time first-year physics graduate student at a particular university.

Living wage data source: Amy K. Glasmeier, Living Wage Calculator, Massachusetts Institute of Technology, 2024. Updated on February 14, 2024, <https://livingwage.mit.edu/>.

Since graduate students commonly share housing, a more relevant comparison may be between stipend levels and Living Wage (2). **Figure 5** shows that 75% of universities offer first-year teaching assistant stipends that are below the Living Wage (2) threshold for the university's location.

Teaching Assistantship and Living Wage (2) by Department



Living Wage (2): The annual income required for a single individual, with no children, sharing a two-bedroom apartment with one other person (assuming two income earners, earning the same amount, and equal sharing of expenses).



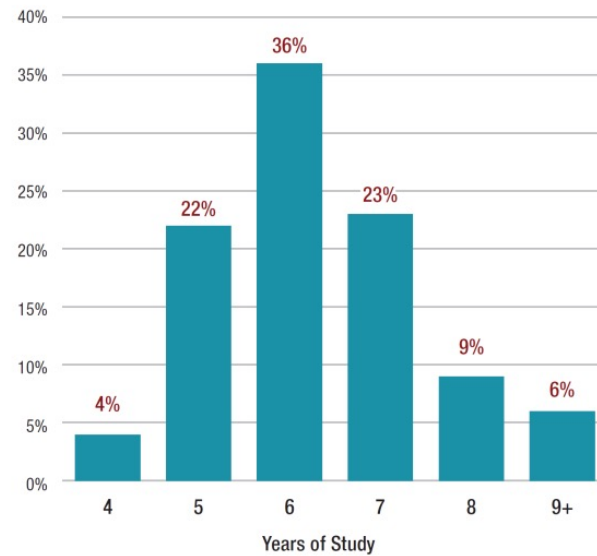
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Living Wage (2): Annual income needed for one individual, no children, sharing a rented two-bedroom apartment with one other person within the university's zip code. For this calculation, there is the assumption that there are two household earners earning the same amount and dividing expenses evenly.

Living wage data source: Amy K. Glasmeier, Living Wage Calculator, Massachusetts Institute of Technology, 2024. Updated on February 14, 2024, <https://livingwage.mit.edu/>.

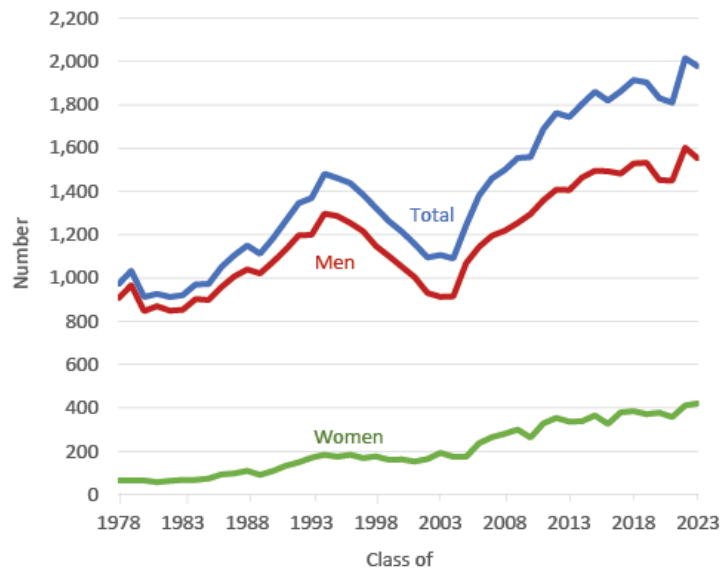
Teaching assistant stipend is the typical annual stipend offered to a full-time first-year physics graduate student at a particular university.

Years of Graduate Study to Earn a Physics Doctorate



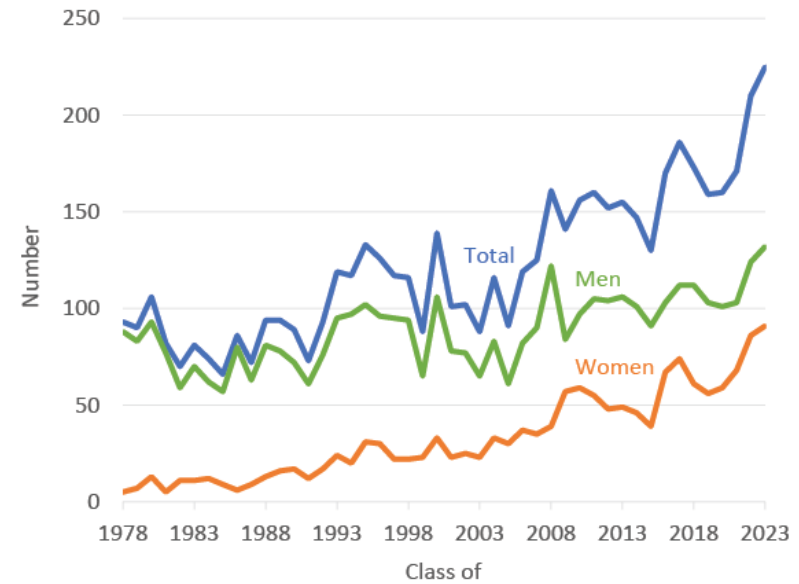
This graph depicts the number of full-time equivalent years of physics graduate study completed in the US by physics doctorate recipients from the academic years of 2020-21 and 2021-22 combined.

**Number of Doctorates Earned in Physics,
Classes 1978 through 2023**



Physics departments reported <1% of their physics doctorate recipients in the class of 2023 identify as a gender other than man or woman.

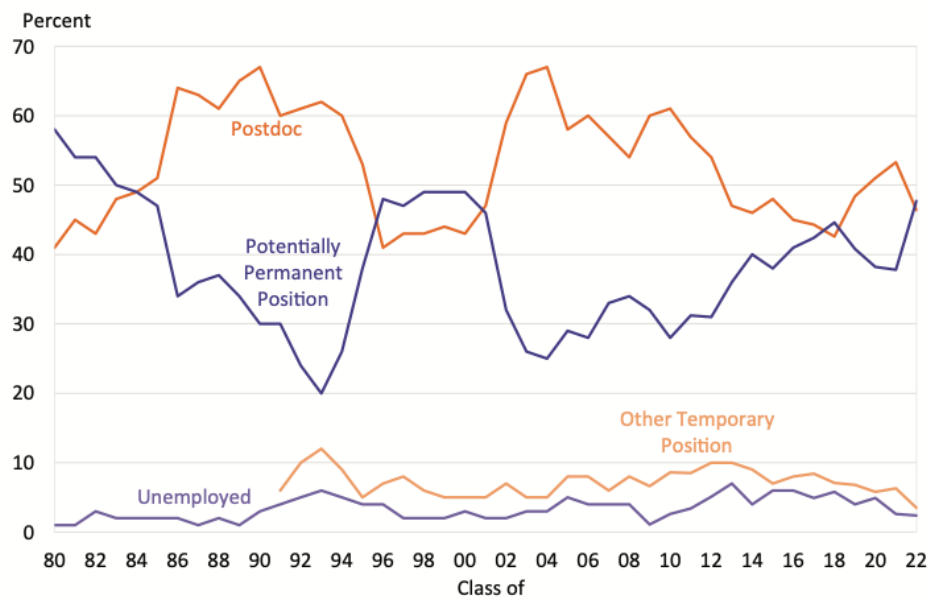
**Number of Doctorates Earned in Astronomy,
Classes 1978 through 2023**



Astronomy departments reported 1% of their astronomy PhDs in the class of 2023 as having a gender identity other than man or woman.

Q: How many faculty hires do you think there are each year in Physics? In Astronomy?

Initial Employment of Physics PhDs, 1980 through 2022



In 1991, the survey questionnaire was changed to measure "other temporary" employment as a separate category. Data are limited to PhDs who earned their degrees from a US university and remained in the US.

Status of Physics PhDs One Year After Degree, Academic Years 2020-21 and 2021-22



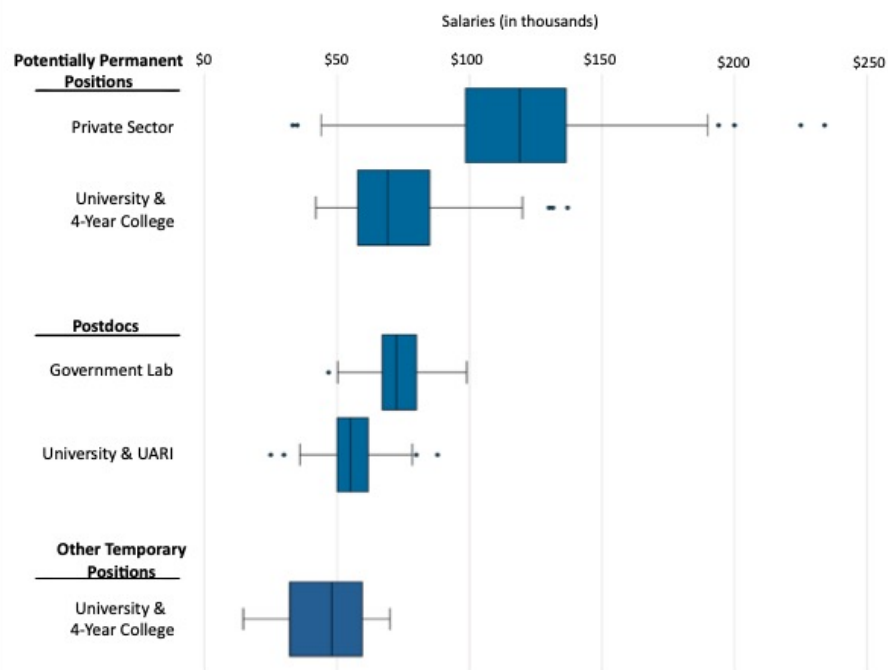
Figure based on responses from 1,680 individuals.

**Type of Employment of New Physics PhDs by Employment Sector,
Academic Years 2020-2021 and 2021-2022**

Sector of Employment	Initial Employment Type			Overall %
	Postdoc %	Potentially Permanent %	Other Temporary %	
Academic	72	15	63	46
Private	1	73	24	34
Government	24	7	5	16
Other	3	5	8	4
	100%	100%	100%	100%

Note: Data includes only US-educated physics PhDs who remained in the US after earning their degrees. Data are based on the responses of 811 postdocs, 706 individuals working in potentially permanent positions, and 75 individuals working in "other temporary positions."

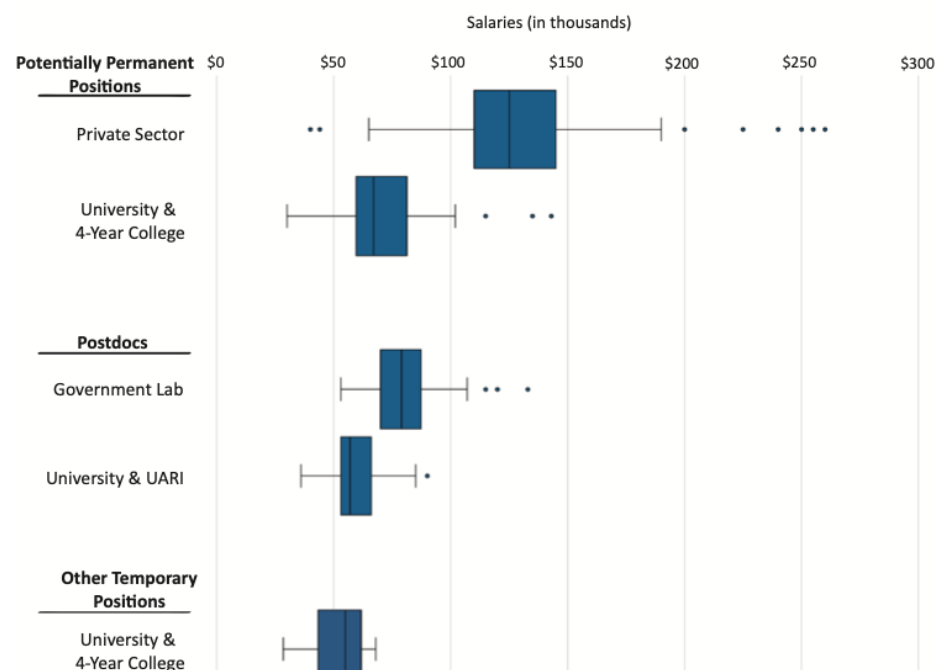
Starting Salaries for New Physics PhDs, Classes of 2019 & 2020 Combined



Data represents only US-educated PhDs who remained in the US after earning their degrees. The full starting salary range, excluding outliers, is represented by the lines extending to each side of the box. The box represents the middle 50% (25th to 75th percentile) of the salaries. The vertical line within the box represents the median starting salary for the sector. The dots outside of the bars are statistical outliers. Government Lab includes federally funded research and development centers, e.g., Los Alamos National Laboratory. UARI is university affiliated research institute. The data for PhDs holding potentially permanent positions in academia include salaries based on 9-10 and 11-12 month commitments and have not been adjusted. Data are based on respondents holding potentially permanent positions in the private sector (192) and in universities and 4-year colleges (37), postdocs in government labs (101) and universities and UARIs (277), and "other temporary positions" in universities and 4-year colleges (17).

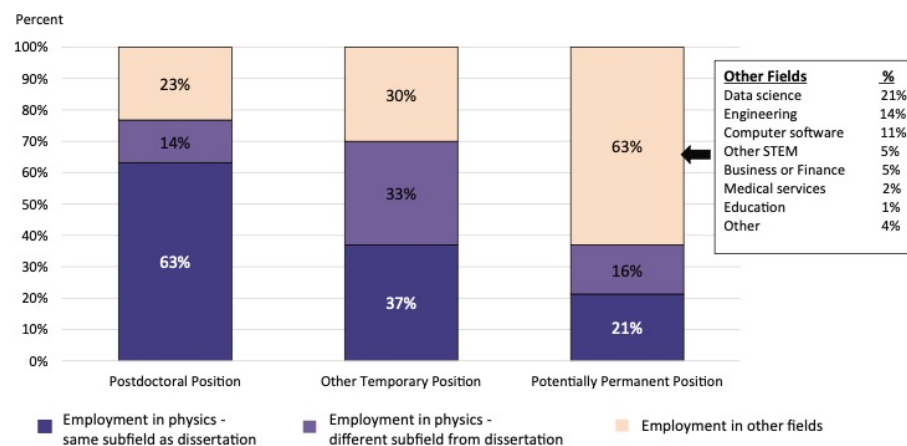
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Starting Salaries for New Physics PhDs, Academic Years 2020-21 and 2021-22



Data represents only US-educated PhDs who remained in the US after earning their degrees. The full starting salary range, excluding outliers, is represented by the lines extending to each side of the box. The box represents the middle 50% (25th to 75th percentile) of the salaries. The vertical line within the box represents the median starting salary for the sector. The dots outside of the bars are statistical outliers. Government Lab includes federally funded research and development centers, e.g., Los Alamos National Laboratory. UARI is university affiliated research institute. The data for PhDs holding potentially permanent positions in academia include salaries based on 9-10 and 11-12 month commitments and have not been adjusted. Data are based on respondents holding potentially permanent positions in the private sector (187) and in universities and 4-year colleges (22), postdocs in government labs (95) and universities and UARIs (203), and "other temporary positions" in universities and 4-year colleges (16).

Employment Field of New Physics PhDs, Academic Years 2020-21 and 2021-22

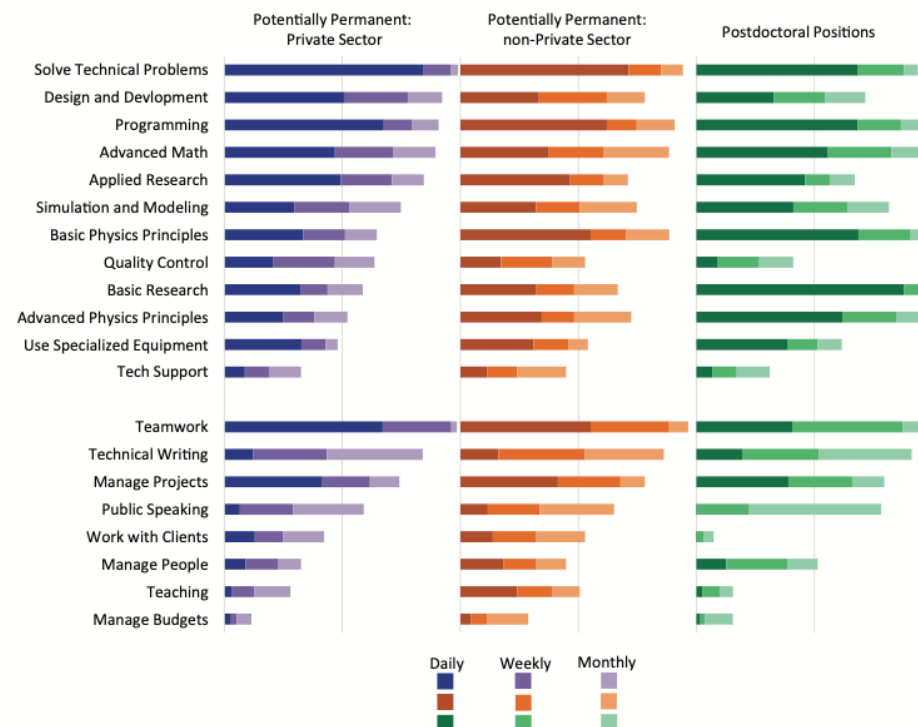


Note: Employment in physics means an individual's primary or secondary employment field was in physics or astronomy. Data includes only US-educated PhDs who remained in the US after earning their degrees.



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Skills Used by Physics PhDs, Academic Years 2020-21 and 2021-22



The frequency of skill use question was asked on a four-point scale that also included a "never or rarely" category.



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Subjective Aspects of Initial Employment for Physics PhDs Holding Potentially Permanent Positions by Sector, Academic Years 2020-21 and 2021-22

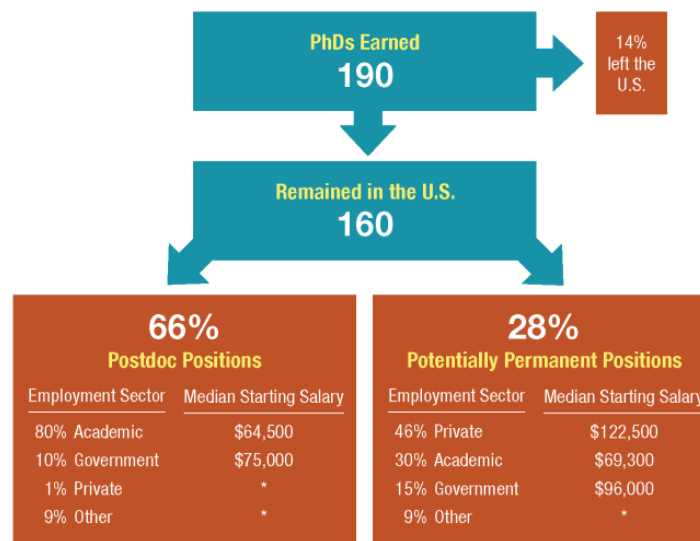
Percent who felt:	Sector of Employment		
	Academic (%)	Private Sector (%)	Government (%)
A physics PhD is an appropriate background for this position.	90	86	82
This position is professionally challenging.	73	83	89
I consider myself underemployed in this position.	28	17	14
Overall, I am satisfied with this position.	73	89	96

Opinions about the Postdoc Experience, Academic Years 2020-21 and 2021-22

Statement	Percent Agreeing
I feel the knowledge and skills I was developing in my postdoc will be valuable in my future career pursuits.	97%
I am satisfied with this position.	91%

The percentages represent the two positive responses on a four-point scale: "Strongly agree," "Agree," "Disagree," and "Strongly disagree." Data only include US-educated physics PhDs in postdoctoral positions who remained in the US after earning their degrees.

Astronomy PhDs 1 Year Later



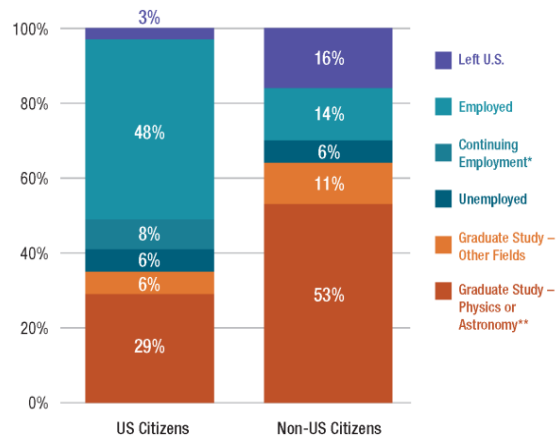
On the Astronomy PhDs that remained in the US after receiving their degrees, 4% indicated they accepted non-postdoctoral temporary positions and 2% indicated they were seeking employment.

*Insufficient data to report

The data in this Physics Trend are based on an average of astronomy PhDs from the classes of 2021 and 2022. It does not include physics PhD recipients with dissertation subfields of astrophysics who received their PhDs from a physics department.

Source: AIP Astronomy PhD Follow-up Survey, classes of 2021 and 2022 combined.

Exiting Physics Masters One Year Later

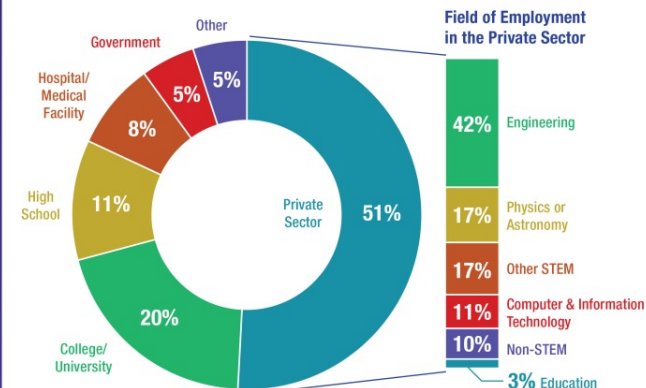


Exiting masters are individuals who, upon receiving their master's degree, leave their current physics departments. This figure is based on the responses of 504 US citizens and 138 non-US citizens from the academic years of 2019-20, 2020-21, and 2021-22 combined.

* Continuing employment: individuals who were employed with the same employer for more than a year prior to earning their master's degree.

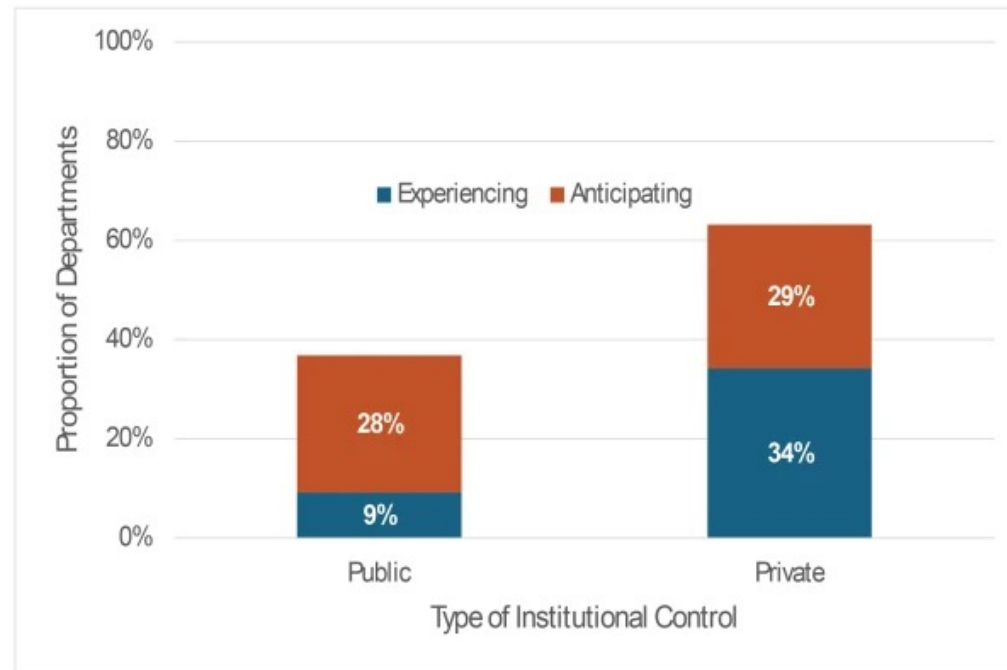
** Graduate Study – Physics or Astronomy: enrolled at a different institution than where master's degree was obtained.

Employment for New Physics Masters One Year After Degree



This data comes from the AIP Physics Master's follow-up survey, classes of 2021 and 2022 combined for employed exiting masters that remained in the United States. The data represents the response of 220 individuals, 14% of which were continuing with employment they held while a graduate student.

Proportion of Departments Experiencing or Anticipating Faculty with Cuts in Federal Funding



“If the administration has any goal other than to significantly hurt the U.S. science and research system, it will not achieve that,” Rob Atkinson, president of the Information Technology and Innovation Foundation, told DFD. “This isn’t about cutting a few projects that embraced radical DEI, or making some changes to get a little bit more efficiency. This is actually cutting meat and bone from the entire research enterprise.”

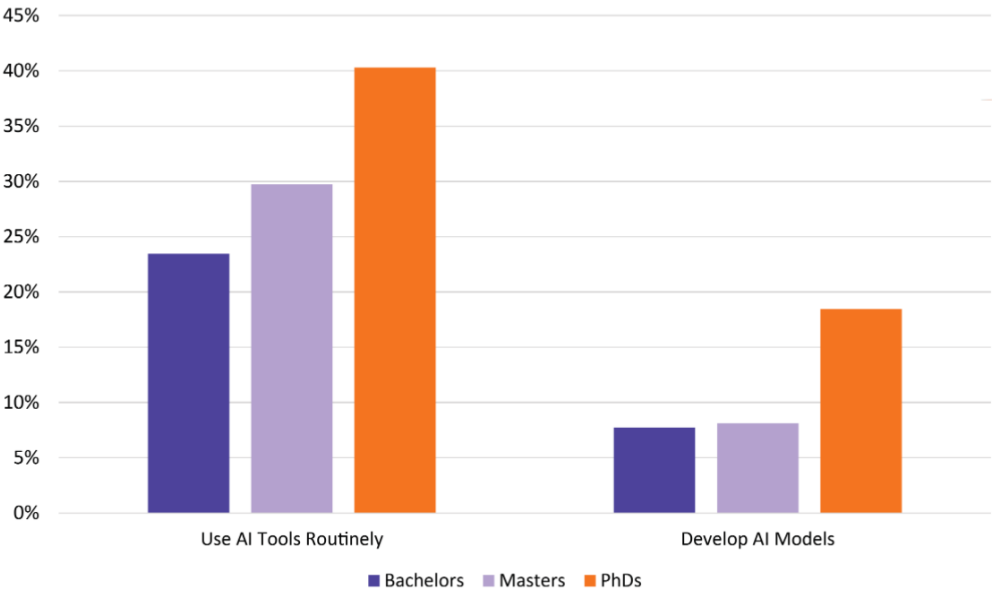
According to a [report published today](#) by the New York Times, funding cuts extend far beyond eliminating allegedly “woke” programs like the one Kratsios cited. The National Science Foundation, a key funder of basic scientific and technical research, has been rolled back to its pre-1990 size and ambitions. In perhaps the harshest blow to American researchers, the administration has eliminated more than 1,600 *active* grants.

The mystery of Trump’s science cuts

By [DEREK ROBERTSON](#)

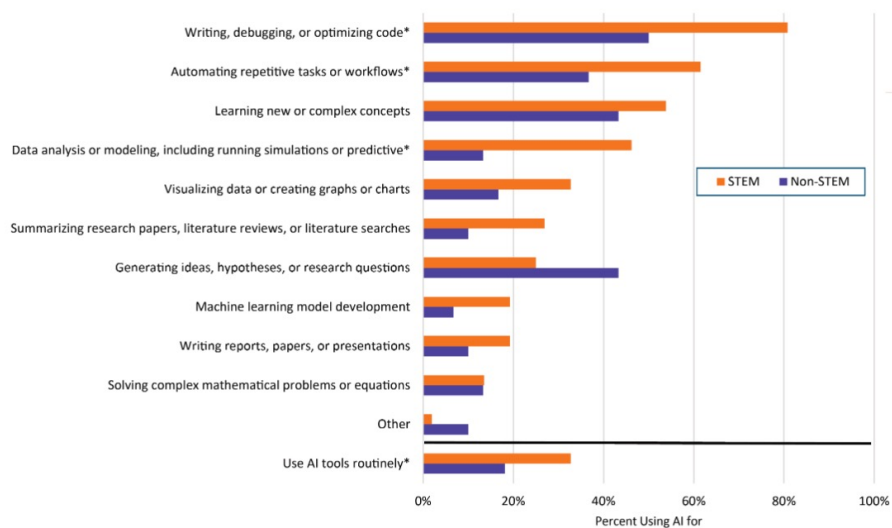
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**Percentage of New Physics Bachelors, Masters, and PhDs Who Use or Develop AI,
Degree Recipients from Academic Year 2023-24**



Respondents were asked to answer yes or no to “Does the position you held as of February 3, 2025 involve developing AI models?” and “Do you routinely use AI tools in day-to-day work in the position you held as of February 3, 2025?”

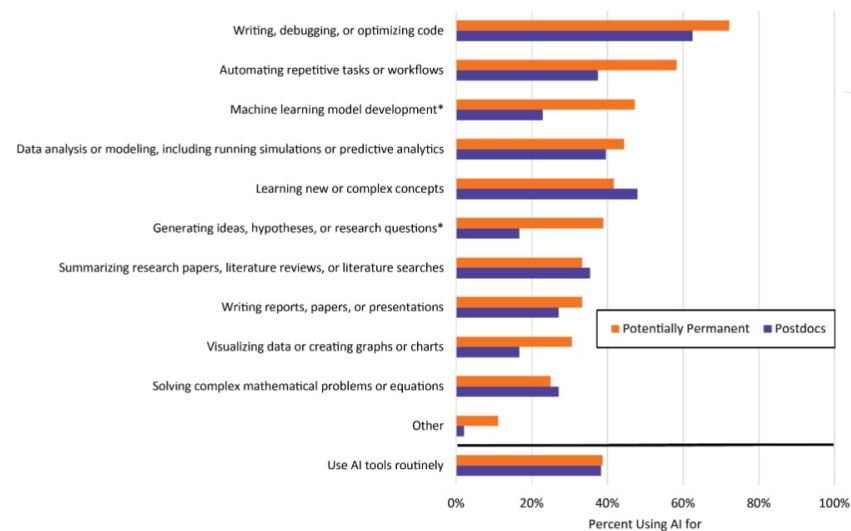
For What Purposes Do New Physics Bachelors Use AI Tools by STEM and Non-STEM Employment, Degree Recipients from Academic Year 2023-24



*Indicates difference is statistically significant (p-values ≤ .05).

Respondents were asked "Do you routinely use AI tools in day-to-day work in the position you held as of February 3, 2025?" This chart represents a list of follow-up options given to those that replied "Yes". STEM and non-STEM were determined based on answers to the question "Which of the following broad fields best describes your employment as of February 3, 2025?"

For What Purposes Do New Physics PhDs Use AI Tools by Employment Type, Degree Recipients from Academic Year 2023-24



*Indicates difference is statistically significant (p-values ≤ .05).

Respondents were asked "Do you routinely use AI tools in day-to-day work in the position you held as of February 3, 2025?" This chart represents a list of follow-up options given to those that replied "Yes".

Percent of Physics Faculty Members Who Are Women, 2006-2024

	Academic Year						
Academic Rank	2006	2010	2014	2018	2020	2022	2024
Full professor	6%	8%	10%	12%	13%	13%	15%
Associate professor	14%	15%	18%	21%	21%	22%	23%
Assistant professor	17%	22%	23%	25%	25%	27%	29%
Instructor/adjunct	19%	21%	23%	27%	27%	28%	29%
Other ranks	12%	18%	20%	19%	19%	18%	18%
Highest Physics Degree Awarded							
PhD	10%	12%	14%	16%	16%	18%	19%
Master's	14%	15%	18%	20%	21%	21%	25%
Bachelor's	15%	17%	20%	22%	23%	24%	25%
Total	12%	14%	16%	19%	19%	20%	21%

Percent of Astronomy Faculty Members Who Are Women, 2010-2024

	Academic Year					
Academic Rank	2010	2014	2018	2020	2022	2024
Full professor	15%	15%	18%	19%	17%	17%
Associate professor	22%	29%	26%	30%	37%	39%
Assistant professor	30%	29%	41%	41%	35%	36%
Instructor/adjunct	*	19%	30%	41%	35%	27%
Other ranks	17%	22%	25%	27%	18%	29%
Total	19%	19%	23%	27%	23%	25%

* There were too few individuals in this cell to report.