

Jobs and Skills

Careers with BS in Physics

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Common Jobs for Physics Majors

Engineering	
Systems Engineer	Application Engineer
Electrical Engineer	Development Engineer
Design Engineer	Engineering Technician
Mechanical Engineer	Field Engineer
Project Engineer	Process Engineer
Optical Engineer	Process Technician
Manufacturing Engineer	Product Engineer
Manufacturing Technician	Product Manager
Laser Engineer	Research Engineer
Associate Engineer	Test Engineer
Technical Services Engineer	General Engineer

Education
High School Physics Teacher
High School Science Teacher
Middle School Science Teacher
Substitute Science Teacher

Research & Technical
Research Assistant
Research Associate
Research Technician
Lab Technician
Lab Assistant
Accelerator Operator
Physical Sciences Technician

Computer Hardware / Software
Software Engineer
Programmer
Web Developer
IT Consultant
Systems Analyst
Technical Support Staff
Analyst

Entry Level Jobs for Physics Majors

- **Research Assistant:** Undergraduate physics majors can work as research assistants in academic or industrial research labs. These positions may involve assisting with experiments, collecting data, and analyzing results.
- **Technical Writer:** Many physics majors have strong communication skills and may be able to work as technical writers for science publications, scientific journals, or technical documentation for scientific equipment.
- **Software Engineer:** Physics majors often have strong programming skills and can work as software engineers, developing and testing software for a variety of industries.
- **Data Analyst:** Physics majors may have experience in data analysis and statistics, making them well-suited for data analyst roles in a variety of industries. You can use your analytical skills to analyze large data sets in fields such as finance, healthcare, or technology.
- -(ChatGPT, 2023)

Additional Jobs for Physics Majors

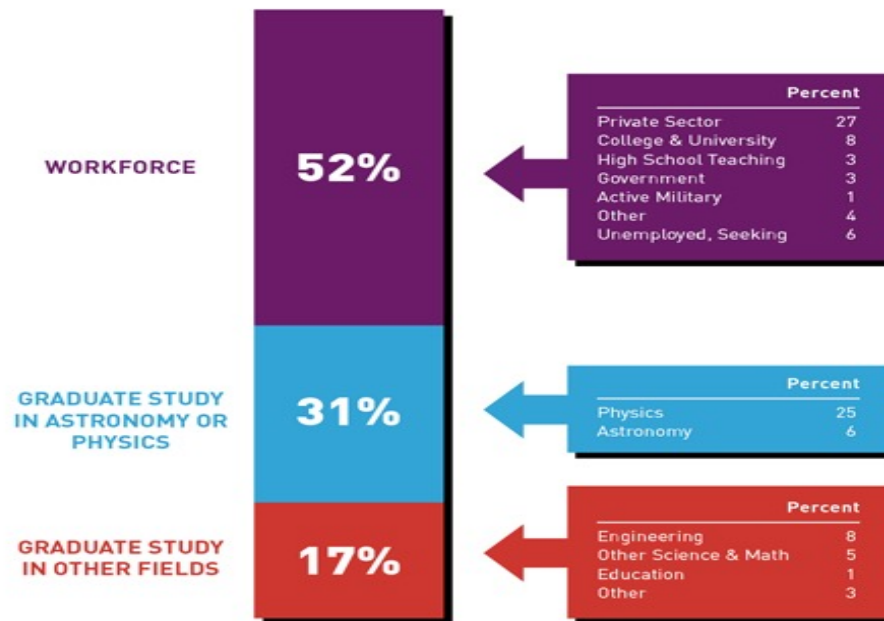
- **Science Educator:** Many physics majors have a passion for teaching and can work as science educators, either in a classroom or as a science communicator for museums or other educational institutions.
- **Patent Attorney:** Physics majors may be well-suited for a career in patent law, where they can use their scientific knowledge to help companies protect their intellectual property.
- **Engineer:** You can work as an engineer in fields such as aerospace, electronics, materials science, or mechanical engineering.
- **Medical Physicist:** You can work in healthcare, applying physics principles to diagnose and treat patients with radiology.
- **Science Communicator:** You can work in science communication, helping to translate scientific concepts for the public through writing, editing, or multimedia production.
- Source: ChatGPT, 2023

Physic Majors Statistics

- About **55%** of physics BS recipients in the US find employment in a physics-related field within 6 months of graduation.
 - research and development, education, and technical services
- 12% of physics bachelor's degree recipients find employment in other fields
 - finance or engineering
- About 42% of physics bachelor's degree recipients in the United States go on to earn a higher degree, such as a master's or doctorate.
 - Of those who pursue advanced degrees, about 76% earn a master's degree and about 44% earn a doctorate.

Physics Bachelors 1 Year Later

9,250 Recent Degree Recipients

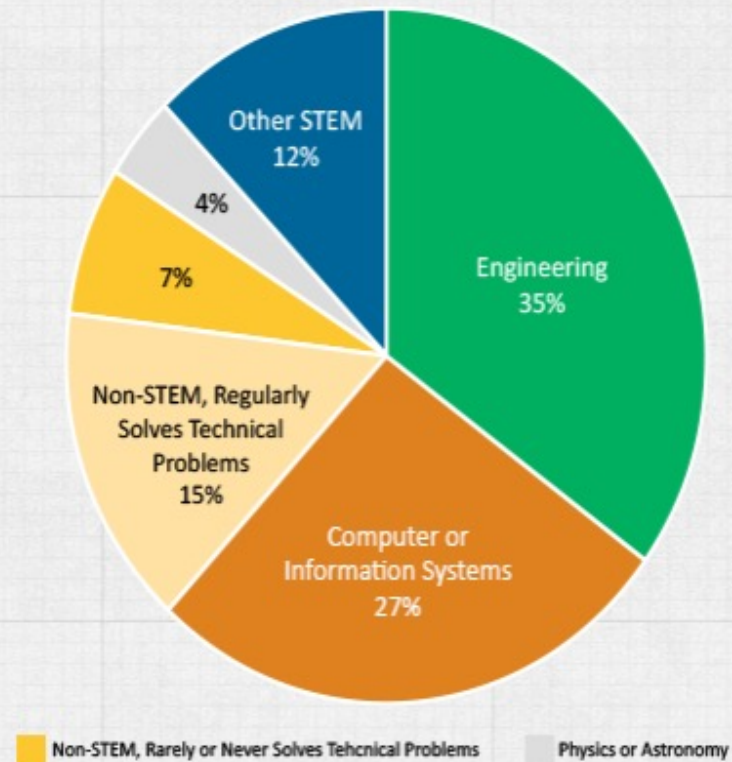


Note: Data in this figure are from the AIP Statistical Research Center's annual Bachelors Follow-up Survey, classes of 2019 and 2020 combined. The 9,250 degree recipients represent the average of these two classes. Two percent of respondents to the survey indicated that they had left the US to pursue employment or graduate study and are not included in the figure.

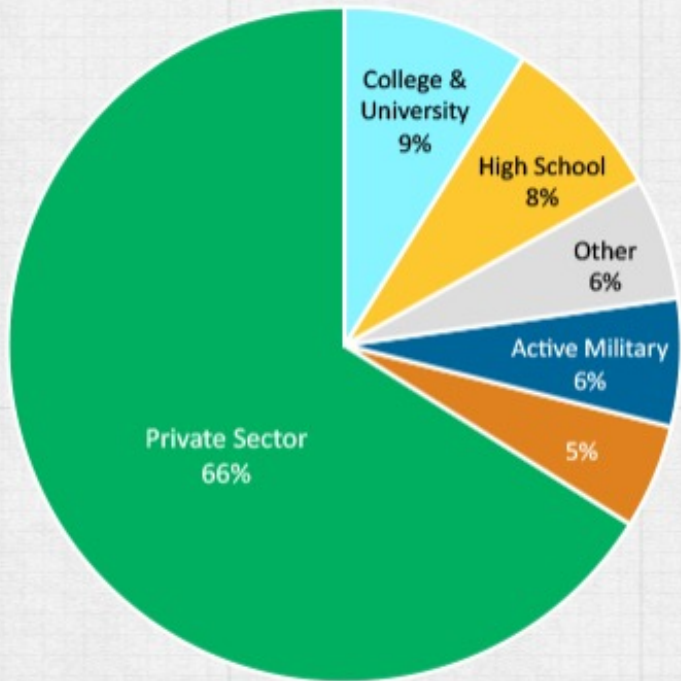
Examining the Data

Nearly half of all physics bachelor's degree recipients go directly into the workforce. Of this group, about two-thirds go into the private sector.

Field of Employment for New Physics Bachelors Employed in the Private Sector, Classes of 2015 & 2016 Combined



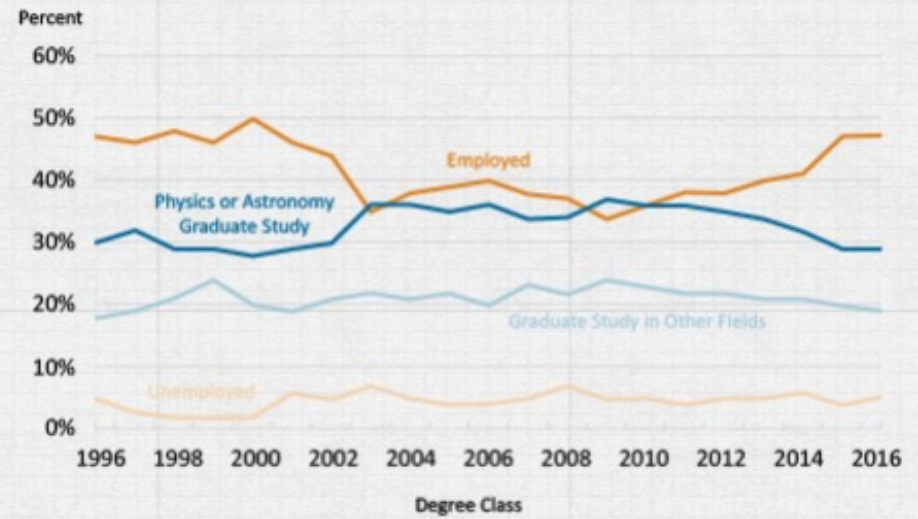
**Initial Employment Sectors of New Physics Bachelors,
Classes of 2015 & 2016 Combined**



Civilian Government, National Lab

www.aip.org/statistics

**Status of Physics Bachelors One Year After Degree,
Classes 1995 through 2016**



www.aip.org/statistics

Entry Level Salary for Undergrad Physics Majors in Boston

Here are some average entry-level salaries for common job titles that physics majors may pursue in Boston:

1. Research Assistant: \$40,000 to \$60,000 per year
 2. Data Analyst: \$50,000 to \$70,000 per year
 3. Software Engineer: \$60,000 to \$80,000 per year
 4. Medical Physicist: \$70,000 to \$90,000 per year
 5. Radiation Therapist: \$70,000 to \$90,000 per year
 6. Engineer: \$80,000 to \$100,000 per year
- Salary varies depending on factors such as industry, job title, and level of experience.
 - According to data from the US Bureau of Labor Statistics, the median annual wage for all physicists and astronomers in the Boston-Cambridge-Nashua metropolitan area was \$119,690 as of May 2020.
 - Source: Chat GPT

Major Employers of Entry Level Physics Majors

- 1. National Aeronautics and Space Administration (NASA):** NASA is a federal agency that conducts research and development in aerospace technology and space exploration. Physics undergraduate majors can work as engineers, researchers, or data analysts in fields such as astrophysics, atmospheric science, and spacecraft design.
- 2. Department of Energy (DOE):** The Department of Energy is a federal agency that is responsible for energy policy and research. Physics undergraduate majors can work as research scientists, engineers, or data analysts in fields such as nuclear energy, energy storage, and renewable energy.
- 3. Defense contractors:** Defense contractors such as Raytheon, Lockheed Martin, and Boeing hire physics undergraduate majors for roles in research and development, engineering, and data analysis. They work on a variety of projects related to national security and defense.
- 4. National Laboratories:** The US government operates several national laboratories, including Los Alamos National Laboratory, Argonne National Laboratory, and Lawrence Livermore National Laboratory. Physics undergraduate majors can work as researchers or engineers in fields such as nuclear physics, materials science, and high-performance computing.
- 5. Healthcare industry:** Physics undergraduate majors can work in the healthcare industry as medical physicists, radiation therapists, or imaging specialists. They work in hospitals, clinics, and research laboratories to develop and use advanced technologies for diagnosis and treatment.
- 6. Technology industry:** Companies in the technology industry such as Google, Amazon, and Apple hire physics undergraduate majors for roles in software development, data analysis, and research and development. They work on a variety of projects related to artificial intelligence, machine learning, and data science.

From Chat GPT

Massachusetts employers who recently hired new physics Bachelor of Science recipients:

<https://www.aip.org/statistics/massachusetts>

AIP, 2020

Boston Major Companies Hiring Physics Majors

- 1. Massachusetts General Hospital (MGH):** MGH is a leading healthcare institution in Boston that employs physicists in its radiation oncology and imaging departments. Physics majors can work as medical physicists or radiation therapists.
- 2. Draper:** Draper is an engineering firm that specializes in developing advanced technologies for government and commercial clients. Physics majors can work as engineers in fields such as aerospace, defense, and biomedical engineering.
- 3. Amazon Robotics:** Amazon Robotics is a division of Amazon that develops robotics and automation technologies for its warehouses and fulfillment centers. Physics majors can work as robotics engineers, data analysts, or software developers.
- 4. Raytheon:** Raytheon is a defense contractor that develops advanced technologies for the military and other government agencies. Physics majors can work as engineers, scientists, or data analysts in fields such as missile defense, cybersecurity, and intelligence.
- 5. Bose Corporation:** Bose is a consumer electronics company that specializes in audio equipment and noise-canceling technologies. Physics majors can work as research scientists, engineers, or data analysts in areas such as acoustics, signal processing, and machine learning.
- 6. Vertex Pharmaceuticals:** Vertex is a biotech company that specializes in developing treatments for serious diseases such as cystic fibrosis. Physics majors can work as research scientists or data analysts in areas such as drug discovery, protein engineering, and computational biology.
- 7. Analogic Corporation:** Analogic is a leading technology company that specializes in medical imaging and security systems. They have previously hired physics majors for various roles such as design engineering, product development, and software engineering.
- 8. Ginkgo Bioworks:** Ginkgo Bioworks is a biotechnology company that specializes in synthetic biology. They have previously hired physics majors for roles such as research and development, data analysis, and software engineering.

Source: Chat GPT

775 MA companies hiring Physics majors: <https://www.buzzfile.com/Major/Physics/MA>

Challenges to Getting Physics Entry Jobs

- Although there are many jobs for physics bachelor's degree recipients, very few have the word “**physics**” in the title
- Hiring professionals and professors may not understand what a physics student actually knows or is capable of doing outside of academia
- Students may lack self-awareness of or have difficulty articulating their strengths and capabilities
- Underdeveloped interpersonal communication skills may be a barrier to students in the job search

UMB Alumni Physics BS Job Titles

Title	Title	Title	Title
Field engineer	HS Teacher	New Product Developer	Auditor
Software engineer	Lecturer –College level	Machinist	Sales Executive
Application engineer	Professor	Radiation Physicist	Medical Dosimetrist
Research engineer	Research Scientist	Sr. Systems Administrator	Marketing Director
QA engineer	Computer Science Engineer	Lab supervisor	Staff scientist
Source: BeaconConnect	Development Project Manager	Patent Examiner	Physicist

UMB Alumni BS Physics Places of Work

A-B Lasers Inc.	Bose				
Accenter	LSM Consulting	Entegris, Inc.	General Electric	Goodrich	Hughes Electronics
Air Force	Commonwealth Care Alliance	Cubic Transportation System	Granite Telecommunications	Joint Center for Radiation Therapy	Merrimack College, Massasoit CC
High Schools	Dotmatics Inc.	Franklin Institute	Holometrix Inc	Maine Medical Center	MIT Lincoln Laboratory
Polaroid Corp.	Radiation Monitoring Devices, Inc.	Raytheon	Renesys Corp.	The Mitre Corp.	Thermatron Engineering
Verizon Corp.	Vistaprint	Wire Technology	US Customs	N & K Technology, Inc.	UMB
Source: BeaconConnect	AER, Inc.	Analytical Power Corp.	Monitronics	QC Optical	US Patent Office

Some Possible Skills for Physics Major Resume

- Physics
- Mathematical Modeling
- Data Analysis
- Laboratory Techniques
- Experimental Design
- Computer Programming (e.g., Python, MATLAB, C++)
- Scientific Research
- Technical Writing
- Critical Thinking
- Problem-solving
- Creative Thinking
- Attention to Detail
- Communication Skills
- Quantum Mechanics
- Thermodynamics
- Electromagnetism
- Classical Mechanics
- Statistical Mechanics
- Astrophysics
- Nuclear Physics
- Particle Physics
- Condensed Matter Physics
- Optics
- Computational Physics
- Radiation
- Analytical skills
- Presentation skills
- Teamwork/collaboration
- Mathematical proficiency
- Research and Development

Sample Entry Level Physics Job Descriptions

- <https://g.co/kgs/nVpJz1>
- <https://g.co/kgs/XJDLLb>
- <https://g.co/kgs/rKhvXi>
- <https://g.co/kgs/Z3ioYt>
- <https://www.indeed.com/q-Entry-Level-Physics-I-Boston,-MA-jobs.html?vjk=ba22724dc02b7629>



Physics Job Search Resources

- Massachusetts employers who recently hired new physics bachelor recipients: <https://www.aip.org/statistics/massachusetts>
- Society of Physics Students Toolbox: <https://www.spsnational.org/sites/all/careerstoobox/>
- <https://www.spsnational.org/career-resources>
- <https://www.spsnational.org/career-resources/physicist-profiles>
- <https://www.aps.org/careers/physicists/profiles/>
- <https://www.aip.org/diversity-initiatives/team-up-task-force>
- Video: I just Graduated. What Do I Do Now? Great info!
<https://www.spsnational.org/webinar-i%E2%80%99m-about-graduate-%E2%80%93-what-earth-do-i-do-now>

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- Campus Center, first floor, suite 1300
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- Drop-ins during the academic year
- Schedule an appointment here: <https://www.umb.edu/academics/vpass/aces>
- Office is open all year round
- ACES offers: Resume/cover letter reviews, job/internship searches/ interviewing skills, major selection and career paths, networking, Career Expos and workshops and more

We look forward to working with you!

The ACES Team