Welcome!

Congratulations on your acceptance to Carleton! I understand you have an interest in studying physics and/or astronomy. Let me tell you a bit about what you could expect from our program here:

You will have a multitude of options open to you when you choose to study physics, starting with your intro course. Whether you’re looking to make physics your major, or whether you’d plan on using it as a base for focusing on pre-med, pre-engineering, another science, environmental studies, or other options, once you enroll, we’ll help match you up with the appropriate first course. Carleton’s 3-term academic year calendar will allow you to sample other areas of study as well as complete general requirements in your first year. Once you move on to your second year of study, you’ll dive into a series of courses that will introduce groundwork concepts and theories of modern physics, including mechanics, atomic and nuclear physics, electricity, and magnetism. After you’ve built a solid base from which to work, you’ll round out your coursework with both required upper level and elective courses such as thermodynamics, quantum mechanics, electronics, solid state physics, optics, waves, observational astronomy, astrophysics and more. You’ll finish off your four years of study with a capstone research project in your senior year.

Outside the classroom, there are even more opportunities to sample the worlds of physics and astronomy. You might choose to work on research with a particular faculty member, either during the academic year or over a summer. We have multiple hands-on research groups (which we discuss more below). You can attend astronomy open houses and special events hosted at our observatory on campus. You’ll have the opportunity to apply for summer research experiences based on other campuses across the country or even overseas. Perhaps you’d prefer to participate in an outreach project that goes to the local middle or high school, or you’d like to take part in an off-campus study program that travels to India for a sustainable energy project. You could travel to a neighboring school across the river, or to a conference across the country to present research that you’ve done. We hope to give you a well-rounded, hands-on, fun experience while you’re here!

We at Carleton take pride not only in our program, but in our outstanding faculty. We are a diverse group of experimentalists, theorists, and astrophysicists, whose first priority is teaching undergraduates. We integrate research into teaching, and involve students in as many research projects as possible. I (Martha-Elizabeth (Marty) Baylor) am an applied physicist who does optical signal processing research and builds optofluidic devices with photosensitive polymers. Melissa Eblen-Zayas is a condensed matter experimentalist interested in the electronic and magnetic properties of correlated electron materials. Helen Minsky is a condensed matter experimentalist with an engineering background who studies the surfaces of soft materials. Arjendu Pattanayak is a theorist interested in fundamental and applied issues in nonlinear quantum systems and statistical mechanics, particularly focusing on the dynamics of entanglement and of small energy-harvesting devices. Jay Tasson is also a theorist interested in fundamental symmetries and tests of special and general relativity and is also working on supporting theory for the Laser Interferometer Gravitational-Wave Observatory (LIGO).
**Ryan Terrien** is a laboratory astronomer helping to build exoplanet-finding spectrographs for telescopes in Texas (Hobby-Eberly Telescope) and Arizona (WIYN Telescope). **Cynthia (Cindy) Blaha** is an astrophysicist who studies star formation and galactic evolution in galaxies of the Local Group. **Joel Weisberg** is a (recently-retired, but still active in the Department) astrophysicist who studies pulsars, gravitation, and the interstellar medium at radio observatories in Puerto Rico, New Mexico, and Australia.

This past Fall, we moved into new spaces in the new interdisciplinary science complex, with a greatly expanded student ‘Maker Space’ and student machine shop. This has provided new and exciting opportunities for research and teaching collaborations across the disciplines, and we are in the process of hunting for a new faculty member who will take advantage of these new opportunities.

We build a close-knit community in a department that is large for a school the size of Carleton. On average, each year we graduate 20 majors and have 35-40 students who choose to fulfill their work study contract in the department. Part of the reason so many students major in physics at Carleton has to do with the general spirit of the department. We are excited by ideas as well as calculations and we value our strong sense of departmental community. Our classes are small, and our interactions personal. The depth and breadth of the coursework as well as the strong peer relationships students develop also contribute to this very strong community, which in turn produces graduates who are ready to either go on to graduate school in a variety of disciplines (almost half of our majors pursue advanced degrees at schools such as Cornell, MIT, Harvard, Caltech, and Stanford) or who seek employment in scientific, technical, or medical fields, teaching, or industry. A recent national survey, covering the two decades from 1990-2009, shows Carleton is one of the highest-ranked liberal arts colleges in the country in terms of the undergraduate origin of physics and astronomy PhD recipients. We were the top source of Astronomy PhDs and the second highest in Physics among undergraduate institutions during those twenty years. The physicists we graduate become not only PhD recipients, but academics, doctors, lawyers, consultants, journalists, engineers, programmers, activists, entrepreneurs, and explorers.

Carleton has proved to be a supportive, fun, and challenging place to study physics and astronomy. You can learn more about our department at our web site: [https://www.carleton.edu/physics-astronomy/](https://www.carleton.edu/physics-astronomy/).

Please write or call me if I can be of further assistance and stop in to meet us and see our facilities when you visit the campus.

Sincerely,

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