



Funding the New Undergraduate Physics 5 Series

Experiential Education

Experiential Education is at the heart of UC Berkeley's undergraduate education program. As part of our effort to **strengthen hands-on learning**, Berkeley Physics is launching a new laboratory curriculum in Spring 2017 designed specifically for freshmen interested in majoring in Physics. The new **Physics 5BL and Physics 5CL** courses will replace worksheet-based labs with labs offering students direct experience with experimental techniques.

These labs are designed to lead students toward more independent research in preparation for the upper-division Instrumentation and Experimentation labs - Physics 111. In addition, the labs will also focus on developing students' collaborative skills, encouraging discovery and advanced learning for potential majors from the very start of their academic career.

Designed to be more challenging than the current laboratory classes, each of the Physics 5BL and 5CL class will require that students:

- Spend 6-8 hours a week conducting experiments, from Mechanics to Electricity and Magnetism to Modern Physics and Optics.
- Be exposed to classical experiments, such as measuring the speed of light, the photoelectric effect, and the mass-to-charge ratio of an electron.
- Have the opportunity to design their own approaches to each experiment.

Capstone Project

A Capstone Project will also be integrated into these labs toward the end of each course. This will involve designing an **original experiment** and **presenting its results** to team members. During this process, students will learn about writing a proposal, collecting data and analyzing it, and drawing conclusions.

Securing Excellence

As Physics 111 is now for seniors, the new Physics 5 for freshmen will be an important focus of the Physics major's undergraduate experience, further enriching the high quality of instruction in the Physics Department.

As a former student who has experienced the rigors and successes of our lab courses, or as a friend of the department who values the significant teaching and research being done here, you have an opportunity to play a very important role in this campaign. By contributing to this project, you will help us **make important upgrades** to the Physics 5 Series, **create new "frontier" experiments, maintain and enhance existing experiments**, and secure funding that will support the lab in perpetuity.

Own a Part of the Lab

Your contribution to this project can be recognized in concrete ways that reflect your experience in the Department of Physics at Berkeley. Perhaps you'd like an Instrumentation station with your name on it, in remembrance of the many hours you spent making an electronics project. Or maybe you'd like to see a past or future Nobel Prize-winning experiment dedicated to a former teacher, a dear friend, or yourself. The following are options for naming of the Physics 5 Series.

\$5,000

Donors of \$5,000 or more will be recognized on the **donor wall**.

\$25,000

Instrumentation Work Stations. A plaque will be placed at each named workstation in honor of the donor and/or honoree. Students are introduced to state-of-the-art methods for acquiring electronic data from experiments at the various workstations. The workstations will incorporate computers and data acquisition units, with collaboration space for projects and easy access to supplies and an instructor interaction area.

\$50,000

Physics 5 Laboratory Experiments. A plaque will be placed at each named experiment in honor of the donor and/or honoree while the experiment is in use. Names will also be listed on the donor wall.

There are about 6-8 experiment stations, some considered permanent and others semi-permanent, within the Physics 5 Lab at any given time. From Interferometry experiment to atomic spectra, from photo electric effect experiment to ideal gas law experiment, many of them are considered classical where students learn about the fundamental laws of Physics. Regular upgrading is necessary, and a new experiment is added about every 3 years to replace an outdated one.

\$50,000 and up

Endowed Funds. Endowments, allowing support for the Physics 5 Series Lab in perpetuity, can be established at \$50,000 and up, and these funds can be named in honor of anyone. Income from endowed funds will be used to support the ongoing creation and maintenance of experiments and equipment, thus enhancing the experience for students and faculty who devote many hours each year to the Physics 5 Series Lab.

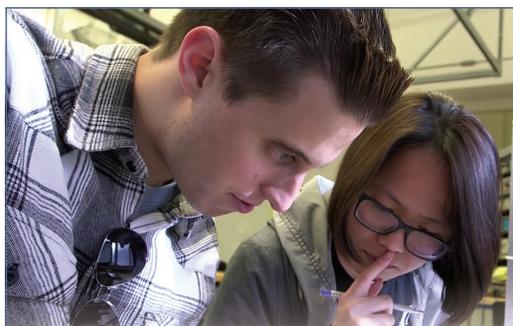
Naming for endowed funds will exist in perpetuity and will be recognized on a donor wall.

\$250,000

Either Side of the Laboratory — Experimental Physics on Mechanics and Electromagnetism or Thermal and Modern Physics — of the Physics 5 Series Lab can be named after someone or some entity.

\$750,000

The Entire Physics 5 Lab can be named after someone or some entity.



How to Give

If you are interested in supporting the Physics 5 Series, please contact:

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The future depends on visionaries like you, who support scientific education and recognize the crucial learning that is happening in the 5 Series. We are grateful for your generosity!