A College is its faculty.
The Campaign for Harvey Mudd College
Good faculty members attract good students, and the combination attracts more of each.

—JOSEPH B. PLATT, HARVEY MUDD COLLEGE: THE FIRST TWENTY YEARS

When Joseph B. Platt, founding president of Harvey Mudd College, first wrote these words, he codified a belief that has remained at the heart of this College since its founding.

The Harvey Mudd faculty remains the touchstone of this College—and for students and alumni alike, the faculty is the mortar that binds this place and that makes the Harvey Mudd experience so unique.

The students drive our faculty; they are our faculty’s singular focus. Students know—and alumni vividly remember—that Harvey Mudd faculty pushed them to do better than they thought they could. Faculty members are teachers in the classroom. They are collaborators on cutting-edge research projects.

They challenge students to improve. They guide them when they struggle. They celebrate when they succeed.

Through The Campaign for Harvey Mudd College, we are on a mission to increase support for our faculty members so they may continue to do what matters most to them—mentoring and educating a new generation of scientists, engineers and mathematicians who understand the impact of their work on society.
Physics Professor Tom Donnelly works with students to conduct experiments on the interaction of high-intensity laser light with novel microstructured targets. He takes students to the University of Texas at Austin in the summers to work on some of the most powerful laser systems ever built.

IT TAKES A SPECIAL KIND OF PERSON to become a faculty member at Harvey Mudd College. From the very beginning, College leaders looked for scholars who were open-minded, flexible and who had a “willingness to explore new methods of teaching.” The College wanted “venturesome idealists” brave enough to build a new college from the ground up. As the faculty continued to grow, new scholars joined the College—each staunchly committed to teaching and to continuously pushing boundaries. And this dedicated faculty truly makes the difference.

Prospective students and their parents will tell you that one of the key reasons Harvey Mudd College stood out among other colleges and universities was a personal interaction they had with a faculty member when visiting campus. Stories abound of our faculty taking time—often at the spur of the moment—to greet visiting students and their families and to answer questions about the College, about their particular disciplines or to give impromptu tours of their departments.

“When I visited Harvey Mudd for the first time,” says sophomore Lee Norgaard of Camarillo, California, “the students were so nice, and the faculty were much more eager to strike up a conversation than faculty at other schools.”

Our students will tell you that Harvey Mudd faculty members not only provide outstanding classroom and laboratory instruction, but they also find ways to support students outside the classroom—through undergraduate research, advising student clubs, sponsoring student projects or providing personal guidance and advice—extending well beyond typical “office hours”—creating a strong sense of camaraderie that can extend long past graduation.

“The fall of my freshman year, my special relativity professor had become a bit of a mentor to me; spending hours chatting in his office while working on problem sets,” says senior Nicole Kowtko of Woodside, California. “When I mentioned I was unable to go home for Thanksgiving, he and his wife welcomed me into their home and made me feel like part of the family.”

In addition, students will tell you that the Harvey Mudd faculty wholeheartedly maintains the longstanding and abiding passion for outstanding teaching—something that often sets our faculty members apart from their colleagues at larger research universities. There are no graduate students standing between the faculty and the students, and Harvey Mudd faculty would have it no other way. Some even say they get as much from the students as the students get from them. “At some schools, students work for faculty members on research,” says Colleen Lewis, assistant professor of computer science. “I’m constantly amazed by the passion, hard work and insight Mudders bring to research on campus and how their breadth of skills allow them to dive into completely new research areas.”

While the challenges and opportunities the faculty provided to our alumni when they were students may have caused several sleepless nights, alumni will tell you that it also prepared them for diverse careers and a life better than they could have ever imagined. In fact, the relationships they forged with faculty members, as well as with their fellow students, instilled in them the importance of teamwork, while engendering in them a fearless approach to problem solving.

Alumna Bea Metitiri ’12, software engineer for Google, says “On a big team, it’s important to work well with others and communicate effectively. At Mudd, we had a lot of group projects, where students were given creative license, and we had to work together to make what we were envisioning. So, I got a lot of practice communicating about things I was passionate about, talking about the technical aspects of what I was working on and explaining those technical aspects to people who are not necessarily technically inclined.”
ALMOST SINCE THE COLLEGE’S FOUNDING, professors have used research as a tool to enhance their classroom instruction. Every student conducts research or participates in Clinic using professional-grade equipment, working alongside faculty, for at least one year. Students also have the opportunity to participate in summer research and experiential learning activities to deepen their knowledge and experience—nearly 200 students participate each year.

“The College was planned as a teaching institution, not a research institute, but I knew from personal experience that research can assist teaching by keeping the faculty interested in new developments and by involving able students with problems for which the answers are not yet known,” wrote Founding President Joseph B. Platt.

Professors work alongside students on research projects throughout the year, using these activities to bolster learning inside the classroom. When Kindelberger Professor of Engineering and Department Chair Liz Orwin ’95 returned to Harvey Mudd as a faculty member, she says her primary motivation was teaching.

“I thought I’d run a research lab here,” Orwin says, “but that it would not be my primary focus. I came here to teach. What I have discovered is that my research lab has provided me with the best teaching opportunity. This is where I can really make a difference to these students. I am continually surprised, impressed and astounded by the interest that this program has generated in the students and in the quality of the work they produce.”

Students gain deeper knowledge and have opportunities to further strengthen their learning through their work with faculty. Sean Messenger ’15 joined students and faculty from the engineering and physics departments two summers ago to map lava tubes in the Mojave Desert. The group’s work simulated how rovers might perform on the surface of Mars. Messenger says Harvey Mudd stands apart in offering this level of commitment to research as a teaching tool.

“We have undergraduates working on graduate-level research projects,” says Messenger. “This is one reason why I chose Harvey Mudd, to have these opportunities ... to have these points where we can access and work with professors on really in-depth and valuable projects that have real-world applications.”

Department Chair and Ingwersen Professor of Chemistry Kerry Karukstis, who has served the Council on Undergraduate Research over the past 20 years in a number of capacities, including—most recently—as its president, says Harvey Mudd’s commitment to both teaching and research was what drew her to the College.

“Harvey Mudd was a singular institution in that it valued both excellent teaching and supported faculty research with undergraduates,” Karukstis says. “That dual expectation for faculty was rare. One of the reasons why I think many of us have stayed at Harvey Mudd, including me, is that we realize that we’re a very unusual institution in terms of everyone’s commitment to the College and to its mission. It’s been extremely rewarding to know that you have colleagues of like mind all working together.”

“I see Mudd as a school filled with teachers who are passionate about teaching and populated by students who are eager to learn—not limiting themselves to a single subject, but exploring a diverse range of fields and acquiring a well-rounded education. It’s a community that loves learning and having fun.”

— JOSHUA MILLER, SOPHOMORE
DURANGO, COLORADO
Ken Fandell, associate professor of art and Michael G. and C. Jane Wilson Chair in Arts and the Humanities, with students reviewing art pieces (top inset). HMC students recreate Wall Drawing 305 (background).

Karl Haushalter, associate dean of research and experiential learning and associate professor of chemistry and biology, works with students (right) to research RNA interference and gene therapy approaches for treating HIV-AIDS.

New Trajectories
Inspiring Students to Explore

Harvey Mudd faculty members don’t only open their student’s eyes to new forms of expression. They also inspire new areas of inquiry and different career trajectories.

Christian Stevens, who graduated in 2014, is probably the first student in Harvey Mudd history to enter college after being a professional hockey player. His goal, he says, was to begin work toward earning a PhD, so he could become a faculty member at a school like Mudd.

“I can thank Professor Karl Haushalter for shoving me off onto a different path,” Stevens says. After listening to Haushalter’s TEDx talk at Pomona College, Stevens says he was inspired to change course. “He was giving a TED talk about using gene therapies to fight AIDS, and he said ‘all this beautiful science is not enough—it’s the larger social obstacles that actually prevent cures and take human lives. It’s when parents reject their kids; when patients don’t trust their doctors; and when poverty inhibits your access to healthcare.’”

Those are problems a researcher simply can’t fix, Haushalter told his audience. After that talk, Stevens changed course. He joined Haushalter in his lab, volunteered with local AIDS organizations and eventually earned a Thomas J. Watson Fellowship to spend a year studying the social problems that prevent patients from fully accessing available medical treatment in places like Malawi and Russia. He’s spending a year at the University of Colorado Denver working on HIV therapies before beginning his M.D./PhD.

“Never had a desire to be a doctor,” Stevens says, “which is funny because it turns out that’s what I am going to do. Coincidences that change your life don’t happen unless you’re reaching out and doing something off the beaten path. There is no better school on Earth for ensuring you have what you need to be successful.”
Our Mission: Harvey Mudd College seeks to educate engineers, scientists, and mathematicians well versed in all of these areas and in the humanities and the social sciences so that they may assume leadership in their fields with a clear understanding of the impact of their work on society.

A prime example includes significant curricular changes made by our computer science faculty in an effort to diversify the major. With a consistently low percentage of women choosing to major in CS, the faculty decided to reevaluate the curriculum and look for better ways to engage women students. The faculty implemented changes in three major areas:

1. They revised the introductory computing course and split it into two “experience” levels while adding opportunities for problem-solving and programming practice that relates to relevant, real-world problems.

2. They provided research opportunities for rising sophomores to continue their engagement with the major and to build teamwork and problem-solving skills.

3. They began taking female students to the Grace Hopper Celebration of Women in Computing conference each year so they could meet other women in the field and make important connections.

Impacting Society
Living the College’s Mission

Harvey Mudd College opened its doors five years after the first hydrogen bomb test and just before the Sputnik I launch. Our founders committed to educating a new generation of scientists, engineers and mathematicians who understood the impact of their work on society. Over the last 60 years, interpretations of this statement have grown to encompass more than “understanding” as greater numbers of faculty, students and alumni choose to use their knowledge and skills to improve the world.

From students working with faculty to develop massive online open courses (MOOCs) that help teachers bring computer science to middle and high school students to traveling to far-flung countries to help people build bridges, improve dams or expand the availability of drinking water, members of the Harvey Mudd College community are bringing positive changes to society. They also are exploring new partnerships through community engagement activities funded by generous donors who have embraced the idea of Harvey Mudd sharing the expertise of its faculty and students with the broader community, and they are taking advantage of prestigious national fellowship programs to take what they’ve learned at Harvey Mudd to explore challenges facing communities around the world.

Fascinated by what causes poverty, engineering graduate Sophia Williams ’15 has been given a tremendous opportunity to seek solutions to this daunting global issue. During her Thomas J. Watson Fellowship year, she will visit communities in Jordan, India, Kenya, Greece and Chile to talk with people in order to learn whether various forms of aid have actually helped to improve quality of life.

Williams will focus on microloans, small businesses, direct grants and their efficacy. “By working with NGOs and aid organizations, I will be able to directly access people who’ve received these forms of aid,” she says.

Williams has been intrigued by poverty since high school, when she spent eight weeks in Faragasy with Amigos de las Américas teaching health and environmental education courses to children. Williams says she witnessed a substantial disconnect between what nonprofits and governments think that people in poverty need and what they actually do need.

The commitment to have a positive impact on society extends beyond our students and alumni. Faculty members are not only dedicated to outstanding teaching, but also to actively researching new instructional methods and pedagogies. They share their findings with educators around the world. This love of teaching and drive to constantly improve traces back to the College’s beginning.
After making these and other changes, faculty saw the percentage of women majoring in CS increase from 12 percent to roughly 40 percent each year. They published their findings, sharing the changes with other educators in an effort to help other programs diversify. The changes also have been shared across the country as part of a partnership between Harvey Mudd and the Anita Borg Institute through the Building Recruiting And Inclusion for Diversity (BRAID) initiative. Through BRAID, 15 academic institutions’ computer science departments have committed to implementing a number of the approaches that have been successful at Harvey Mudd and other institutions.

Harvey Mudd faculty in engineering, chemistry and mathematics are engaged in a three-year study funded by the National Science Foundation to determine if the flipped classroom model increases learning and retention. Using the flipped classroom model, course lectures are completed outside class, while time in class with the professor is reserved for working on projects and problem sets.

Faculty members are also studying the impact of the flipped classroom model on student learning outcomes.

“A lot of research shows that active learning helps students learn better in a whole range of ways,” says mathematics Professor Darryl Yong ’96. “So when people flip their classrooms and use class time for active learning, how much of the benefit comes from that active learning and how much from the instructor having used video to deliver instruction? Our study attempts to control the classroom conditions as much as possible so that the only thing that is different is how lectures are delivered.”

Information gained from the study will allow Harvey Mudd to provide evidence-based recommendations to STEM educators via published papers, conference presentations and public workshops. A project website will include study results and tips for educators.
Giving Opportunities

There are several opportunities for you to personally invest in supporting the faculty members who help make Harvey Mudd College unique. These investment opportunities extend the critical teaching relationships between faculty and students and provide faculty with added resources. They also help enable students to present their research findings in publications and at national or international conferences with their faculty research partners.

Endowed Faculty Chairs ($3 million minimum endowment)

Endowed faculty positions are crucial to continuing to attract and retain outstanding teacher-scholars. Endowed chairs recognize and support senior faculty members and provide a stipend for discretionary support of professional activities, including research and teaching. These chairs also free resources to allow the College to hire additional faculty members, further benefiting the College by increasing the number of faculty, reducing the teaching burden, and expanding course offerings while also improving both teaching and research opportunities for students.

Distinguished Visiting Scholars ($1.5 million minimum endowment/$67,500 annually)

Funding to support visiting scholars allows Harvey Mudd ($1.5 million minimum endowment/$67,500 annually) to attract well-established experts in their fields who bring technical support, student stipends or assistance from organizations or national conferences, or to deepen their background in the College’s approach to teaching and research. These chairs also free resources to allow the College to hire additional faculty members, further benefiting the College by increasing the number of faculty, reducing the teaching burden, and expanding course offerings while also improving both teaching and research opportunities for students.

Postdoctoral Fellowships ($1 million minimum endowment/$50,000 annually)

In addition to enhancing professional collaboration and adding of existing faculty while promoting faculty scholarship and providing a bridge of support to allow new faculty to be productive in their first few years at HMC before they are able to apply for grant funding through other sources. Through the College’s start-up funding, faculty in the sciences and in engineering receive start-up funding packages that might include support for attendance at discipline-specific workshops, funds to support hosting workshops, professional travel, books and necessary subscriptions to pursue their scholarly efforts while at Harvey Mudd.

Equipment Enhancement Funds ($200,000 minimum endowment/$12,500 annually)

These funds, either through endowment or annual support for attendance at discipline-specific workshops, funds to support hosting workshops, professional travel, books and necessary subscriptions to pursue their scholarly efforts while at Harvey Mudd.

Equipment enhancement funds may be used to defray the cost of resources needed during the academic year or for summer research. They might include anything from the purchase, repair or replacement of equipment and lab/studio supplies to software needed for the analysis of data. These funds are critical to the work of our faculty and students, and in cases where the faculty member’s research is not being supported through an outside grant, they free up existing department and College resources so that they can be used for other priorities.

Faculty Development and Curricular Enhancement Funds ($250,000 minimum endowment/$12,500 annually)

These funds, either through endowment or annual support, enhance the ability for our faculty to continue to grow and innovate. They provide stipends enabling faculty members to travel and conduct research related to completing books or scholarly articles, to take the time to revise or create curriculum or labs, to pursue creative projects, to participate more fully in professional organizations or national conferences, or to deepen their skills in effective teaching and student interaction.

Faculty Start-up Funds ($125,000 minimum endowment/$7,500 annually)

Faculty support funding could be directed to a number of critical purposes, including providing stipend support for faculty members conducting summer research programs for students, travel funding to pursue off-site research, attendance at conferences and workshops or visits to archives to conduct research critical for a faculty member’s scholarly work. Funds also provide additional resources to help faculty purchase software, reference materials and other supplies needed for their work.

Postdoctoral Fellowships ($1 million minimum endowment/$50,000 annually)

These fellowships help foster the academic careers of scholars who have recently earned their PhD degrees by enabling them to pursue research and gain valuable experience as teachers and members of academic departments—all while under the mentorship of an experienced faculty member. These fellowships follow the latest trends and techniques in research, and they can help accelerate a Harvey Mudd faculty member’s research trajectory. They also provide greater opportunities to mentor students while themselves being mentored by experienced faculty, providing them with a solid background in the College’s approach to teaching undergraduates.

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Distinguished Visiting Scholars ($1.5 million minimum endowment/$67,500 annually)

Funding to support visiting scholars allows Harvey Mudd to attract well-established experts in their fields who bring fresh perspectives and who can expand the efforts of existing faculty by teaching novel topics through seminars and courses. These visiting positions, lasting one semester to a full academic year, reduce the overall teaching load of existing faculty while promoting faculty scholarship through enhanced professional collaboration and adding new mentoring opportunities for both students and younger faculty members.

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