Cultivating Entrepreneurship

The Caltech Office of Technology Transfer and Corporate Partnerships

Four years ago, Professor Morteza Gharib became Caltech’s Vice Provost for Research. One of the offices under his leadership is the Office of Technology Transfer and Corporate Partnerships (OTTCP).

Professor Gharib has been working closely with Frederic (Fred) Farina, the Chief Innovation and Corporate Partnerships Officer, to strengthen OTTCP and cultivate a culture of entrepreneurship at Caltech. In light of the fact that 50 percent of all inventions from the Caltech campus come from the Engineering and Applied Science Division, and how often faculty comment on how Caltech is the best place to protect their inventions and technology, ENGenius set down with Gharib and Farina to learn more about their efforts and successes.

ENGenius: What’s distinctive about technology transfer at Caltech?

Gharib: Over the past 20 years, Larry Gilbert, Rich Wolf, and now Fred Farina have established a culture at Caltech where faculty know that their ideas and inventions have value; furthermore, the faculty judge that value. One of the main reasons I decided to become vice provost was to help further develop this culture of entrepreneurship. Over the past four years, Fred and I have worked on many projects, such as bringing more entrepreneurship to education and combining Corporate Relations with the Office of Technology Transfer, which reflects how much industry now values intellectual property.

Farina: Larry Gilbert’s great vision established the office with principles that still make it what it is. The first and most important is that we had to be completely oriented to serving the faculty and establishing trust with them. Faculty have to see us as an ally, as opposed to a bureaucratic office that stands in the way of what they are trying to accomplish. So we try our best to be a bureaucracy-free zone and help them to overcome the obstacles they encounter on the path to commercializing their ideas. Because of that, we get a lot of disclosures from the faculty. Once they disclose their ideas, we can start thinking about what kind of product the idea could turn into and where it’s going to fit in the market, but at the end of the day the faculty member’s passion for the idea and drive to commercialize it are going to be the most important factors in the decision to file for patent protection.

ENGenius: What was your path to technology transfer?

Farina: I got a master’s in electrical engineering in ’92 at Caltech and then right away I got a job at JPL working on GPS technology. Although I enjoyed my job, I quickly realized that research, in the long run, was not what I wanted to focus on. At the same time I was very interested in the process of innovation, the creative process of inventing, and the tools available to inventors to protect their ideas and bring them to market. So I got a job in a law firm doing patent prosecution, which involved drafting patent applications, submitting them to the U.S. Patent Office, and advising the patentability of the inventions, the ultimate goal being the grant of a patent. But soon I found out that once the patents are filed, it’s somebody else that takes on what I think is the more interesting part: commercialization. I was seriously looking at law school when an alumna friend of mine told me about a job opening at Caltech in technology transfer. I had an interview with Larry Gilbert and Rich Wolf, who explained what tech transfer was, and I immediately knew it was what I was looking for. It turned out that they had previously offered the job to a guy who first accepted but then turned it down. His name was Fred, he had a master’s in electrical engineering from Caltech, and he worked at JPL. So when I showed up at the interview, I was Fred with a master’s in electrical engineering from Caltech and with JPL experience—I fit right in!

ENGenius: How has the office changed over the past four years?

Gharib: One key change has been the physical environment: OTTCP moved to a new space that’s designed to be a point of gathering where students, faculty, and postdocs are encouraged to show up and exchange ideas. Therefore, we are spending more time with those interested in starting companies, discussing the pros and cons of having a business. One can teach certain tools useful to entrepreneurs, but in the end entrepreneurship has to be cultivated in the same way as creativity.

Farina: Having an environment that is open, dynamic, and looks in sync with its time is part of creating the buzz about tech transfer and entrepreneurship. In the eyes of the campus community, the location raises the importance of what we do. Also, we negotiate deals that have potentially really high value, and when you negotiate at that level with companies, you have a lot more credibility if you have a space that shows some level of success as opposed to the typical old academic space.

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Once the company is in safe water, a seasoned CEO comes in and expands the company. In my experience, most companies fail because the postdocs or students that went to the company didn’t have the right business tools. They don’t want to start the company and then go learn management, but maybe they could take a one-year course at Caltech to prepare them to speak both languages. We’re in a good position to have a great program that can educate the next generation to face the real challenges in starting a technology-based company. I want them to grasp the idea that entrepreneurship is not just about business. It’s a way of thinking and a way to manage your life. We want our graduates to take risks and be bold. They shouldn’t be just homework solvers but problem solvers! This way they can be better students and better citizens.

ENGEnious: What do alumni and friends of Caltech need to know about OTTCP?

Farina: They need to know that the office exists, and that it has become a really significant part of what Caltech is about and also what Caltech wants to do. I think it’s very reassuring to alumni to see that we’re connecting to the real world more through this activity. Also, we are in the process of putting in place a mentorship program for researchers and students, and we will reach out to alumni who understand how to start companies and have certain industry experiences. We need to continue to make sure Caltech plays a critical role, not just in pushing the boundaries of science and engineering, but also, connecting with society by commercializing the fruits of its research. We have to show the world that we do. One way that we do that is by bringing new technologies, products, services, therapies, etc., to the public to increase quality of life. Alumni can and should be a big part of that.

ENGEnious: Is this also one of the reasons the offices of Technology Transfer and Corporate Relations merged?

Farina: Yes. The other reason is that, in the past, the companies gave a fair amount of gifts to universities, but that’s been in decline for many years. Now companies tend to sponsor research projects and want to see a return on their investment in the form of intellectual property or people to hire. Since Caltech doesn’t have a lot of students, they don’t get a big bang for their buck when they come here to recruit. So, with the new office, we focus on showing them that they can get a lot out of sponsoring research and, of course, welcome gifts as well.

ENGEnious: How are you cultivating entrepreneurship in the next generation at Caltech?

Gharib: The challenge is to establish a curriculum that helps us to actually educate the next generation of what I call chief technology/chief executive officers (CTO/CEOs). These individuals need to speak the languages of both business and technology. Then, once the company is in safe water, a seasoned CEO comes in and expands the company. In my experience, most companies fail because the postdocs or students that went to the company didn’t have the right business tools. They don’t want to start the company and then go learn management, but maybe they could take a one-year course at Caltech to prepare them to speak both languages. We’re in a good position to have a great program that can educate the next generation to face the real challenges in starting a technology-based company. I want them to grasp the idea that entrepreneurship is not just about business. It’s a way of thinking and a way to manage your life. We want our graduates to take risks and be bold. They shouldn’t be just homework solvers but problem solvers! This way they can be better students and better citizens.

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