

PROFILE: JORGE CHAM

## Piled Higher and Deeper: The Everyday Life of a Grad Student

Jorge Cham has been capturing the trials and tribulations of grad school in a comic strip for more than a decade; now he's left the lab for the lecture circuit

Jorge Cham is not a Nobel laureate, but the popularity of his keynote lectures and his following in the scientific world are enough to make even the most distinguished professor green with envy. Cham, 33, is the brains behind the comic strip *Piled Higher and Deeper*—*PhD* for short—and it's made him a celebrity among graduate students, with 4.7 million visitors a year to his Web site and a battalion of fans in labs all over the planet. His fourth book, *Academic Stimulus Package*, is scheduled for publication this month.

Supervisors interested in learning what's on their students' minds might find *PhD* an illuminating place to start. After all, "every professor was once a graduate student," says Anthony Finkelstein, head of the Computer Sciences department at University College London (UCL) and a *PhD* fan. Cham's comic strip resonates with graduate students and professors alike because it deals with everyday frustrations of life in the lab—procrastination, dealing with advisers, serving on committees, lack of inspiration—and its appeal seems to be universal. "I live all those issues every day," says Martha Elena Ibarra, a molecular biology Ph.D. student at the Cinvestav laboratory in Irapuato, Mexico. "It makes you feel you're not the only one out

there," says Shrikant Sundaram, an electrical engineering master's student at the University of Southern California in Los Angeles.

Cham, who is surprisingly low-key for somebody with such a sharp eye and an edge to his humor, grew up in Panama in a science-oriented family. Both of his parents have graduate degrees and taught at the University of Panama. "I guess you could say geekiness is in our genes," Cham says, "but they also instilled in us to value education and hard work."

As a child, Cham dreamed of becoming an engineer. "I was interested in machines and movement, so mechanical engineering seemed the best fit and robotics the most interesting to me within that," he says. He graduated from the Georgia Institute of Technology in Atlanta in 1997 with a bachelor's degree in mechanical engineering and got into cartooning almost by accident.

In the fall of 1997, a few weeks after he started a master's program in mechanical engineering at Stanford University in Palo Alto, California, the student newspaper *The Stanford Daily* put out a call for a new comic strip. Cham, his brother Jaime, who was also

a graduate student at Stanford, and a few friends discussed some ideas for a comic strip over dinner. "My brother said he always thought there should be one about grad school, because that's when the real pain begins," Cham recalls.

Cham was enthused. Although he had doodled as a child and his school notebooks were filled with little drawings, he had never tried sketching comics before. "At the time, I was also reading a book about *Doonesbury*," the comic strip that has provided wry social and political commentary since 1970, "so I was kind of inspired in that way," he says. Despite being busy with a full load of classes and teaching assistant duties, Cham says, "I somehow thought it would be a good idea to draw a comic 5 days a week."

Cham proposed a comic strip that would center on the life (or lack thereof) of a group of overworked, underpaid, procrastinating graduate students and their terrifying advisers. *The Stanford Daily's* editors liked the idea, and in October 1997, *Piled Higher and Deeper* was born. A few weeks later, Cham created the Web site on which, to this day, his comic strip is available for free.

From the beginning, *PhD* has featured a regular cast of characters: the nameless hero, suspiciously similar to the author himself; geeky Cecilia, the dedicated engineering student; Mike Slackernery, who takes laziness to a whole new level; social scientist Tajel; the absent-minded Professor Jones; and the demanding Professor Smith. Cham insists that none of them is based on real people, but he acknowledges that he was inspired by colleagues "from the research center where I worked, to my cohort of classmates, to a lot of my brother's friends."

### Split careers

Cham kept up the comic strip while he finished his master's degree and continued it during the 4 years he spent at Stanford studying for a Ph.D. His research was part of a multidisciplinary project to build a sturdy and fast six-legged robot—a design inspired by cockroaches—capable of maneuvering in bumpy terrains. Cham's role was to design the legs and joints. "He was a great student, creative and hardworking and very sharp,"

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This article is part of a special **Science Careers** feature on scientists who have left the bench.

says Mark Cutkosky, Cham's Ph.D. adviser at Stanford. Cutkosky remembers his own graduate student days well enough to identify with the comic strip's characters. "Jorge's comics capture the special culture of academia, especially in technical fields, quite well," he says.

Cham's first book, *Piled Higher and Deeper: A Graduate Student Comic Strip Collection*, was published in 2002, during his last year at Stanford. But despite the growing success of the comic strip, he still planned to pursue a career in research. Cham started looking "very aggressively" for an academic job. He was short-listed for a job at the Massachusetts Institute of Technology (MIT) in Cambridge but didn't get it. "I always think that I was this close," he says with a hint of frustration. In the end, Cham stayed on the West Coast for a postdoc position at the California Institute of Technology (Caltech) in Pasadena researching neural prosthetics. The work was aimed at developing a system to help paralyzed people control external devices, such as a mouse pointer, with brain signals.

Cham's second collection of comic strips, *Life is tough and then you graduate*, was published in May 2005. By then, *PhD* fans had spread beyond Stanford, and his sister Laura volunteered to organize a book signing at MIT, where she was a graduate student. Cham thought it was a cool idea but says, "I offered to do a lecture instead, since it's a skill you learn as a Ph.D. anyway." He talked about the books and their characters, and the ups and downs of graduate student life. That talk launched his career as a speaker at conferences and student events worldwide.

His "The Power of Procrastination" lecture presents the comic strip and its characters, explores the pros and cons (mostly cons) of being a graduate student, and discusses the pros and cons (mostly pros) of procrastination. The result is "hilarious," says Finkelstein of UCL. Finkelstein says he considered several "worthy but dull options" for a keynote speech at the Computer Science 2008 Student Research Conference he

was organizing at the University of Cambridge when someone suggested Cham. Finkelstein agreed immediately.

Feedback from the talk at Cambridge was excellent, he says. "[Cham's] message that research is mentally tough and potentially lonely strangely made the students more enthusiastic," Finkelstein adds.

### Making choices

Coordinating his cartoonist activities with his research at Caltech became increasingly difficult, and Cham realized that the comic

own path" and "you can choose your own definition of success," he says.

Cham believes that part of his drive to become an academic was the thrill of achievement, and he realized that being "this close" to fulfilling his dream of getting an academic job at MIT was "actually pretty good. ... So once I got that far, I just said to myself, 'You know, I don't need to be a professor anymore.'" So, in July 2005, Cham left Caltech to become a full-time cartoonist.

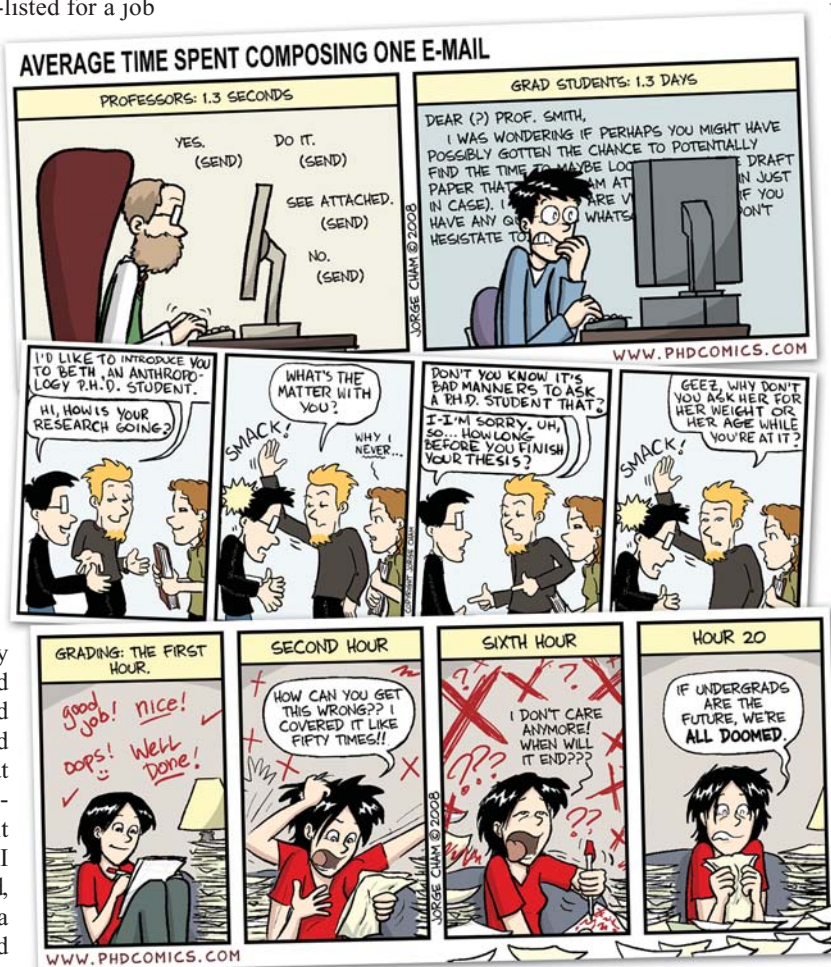
The *PhD* comic strip is still available for free on his Web site and syndicated for free in university newspapers. Cham makes his living with the sale of books, merchandise, and "The Power of Procrastination" lecture series. The business gives him little rest; Cham gave 46 lectures last year, more than a dozen of which were in Europe. Next month, he's scheduled to speak at five universities in four states and Canada.

Even though his graduate student years are definitely over, comic ideas are still plentiful: He posts new comics on his Web site "approximately 2.718 times a week." Cham draws mostly from his own experiences as a graduate student, although he is also inspired by fan mail and people he meets during his talks.

"Running a business can be really challenging," Cham says, and part of him misses working in a scientific institution and knowing that his research is part of something larger. However,

there are quite a few signs that his work is far-reaching: His often-packed lectures usually include graduate students from many different disciplines, and seeing "art history scholars laughing along with biologists, English, and engineering majors is something I imagine rarely happens," Cham says. "Many people have come up to me to say the comics and the lecture are like therapy for them." Finkelstein agrees: Part of the appeal of *PhD*, he says, is that "while poking fun at the loneliness of research, [Cham] actually makes us realize that we are not alone."

—SARA COELHO



strip was "growing into something special." He dithered on whether to become a professional cartoonist or pursue his dream of becoming a professor. Cham says he's grateful for the advice Joel Burdick, his principal investigator at Caltech, gave him at the time. Burdick encouraged him "to pick one thing and be really good at it" and warned him not to be caught in artificial models of success, such as thinking that becoming a tenured professor at a major university is the only available option. Instead, Cham learned that "if you have the drive and the creativity, you can forge your