



The *PhD Movie 2* by Jorge Cham (cartoon below) stars Alexandra Lockwood as Cecilia (above).

Q&A Jorge Cham

The academic satirist

Cartoonist and former robotics researcher Jorge Cham wowed graduate students with *The PhD Movie* in 2011. With the follow-up *The PhD Movie 2: Still in Grad School* — an astute, funny look at more academic tribulations — set to screen at campuses worldwide from the end of September, Cham talks about crowdfunding, the grim scramble for grants, the under-representation of women in science and coaxing a cameo from a Nobel laureate.



What is *The PhD Movie 2* about?

The film relates what happens next to the two graduate students who featured in *The PhD Movie* (see *Nature* <http://doi.org/d92ckx>; 2011).

Cecilia completes

her PhD thesis in quantum physics, defends it and graduates. For her, it is the story of how you really want to write your thesis, even though you hate it and have writers' block. Meanwhile, Winston — the biochemistry newbie who was nameless in the first film and struggled to prove himself to his professor — goes to his first conference. There is a rival research group, and you see this whole larger ecosystem of competition for results and funding.

How did you improve the production quality for the sequel?

We filmed *The PhD Movie* with a very small crew of mostly volunteers, and a budget of less than US\$20,000. The budget for the sequel was \$175,000, mostly raised from a crowdfunding campaign on the website Kickstarter. The vast majority of backers were academics and PhD students who were fans of my comic, *Piled Higher and Deeper*, and the first movie. We had a professional director and production crew, as well as nicer cameras and equipment. As with the first film, it features real-life academics and grad students (for instance, in the roles of Cecilia and Winston), but we used professional actors, too — reflecting the sequel's theme of collaboration. *The PhD Movie 2*

The PhD Movie 2

DIRECTOR: IRAM PARVEEN BILAL
Piled Higher and Deeper Publishing: 2015.

For information and to organize screenings, visit phdcomics.com/movie.

was also filmed at the California Institute of Technology (Caltech) in Pasadena, and its Institute for Quantum Information and Matter was our home base for the production.

Which leading scientist appears?

The first film had cameos by a couple of recipients of the MacArthur genius grant, John Dabiri and Paul Rothemund, so we had to up the ante. Caltech physicist David Politzer, who won a Nobel prize in 2004 for the discovery of asymptotic freedom in how the atomic nucleus is bound together, happily agreed to a cameo role. In one scene, professors are discussing whether the founder of their field will get a Nobel and Politzer says, "Ah, the Nobel prize is overrated."

How have you addressed the issue of women in science and academia?

There has been a lot of discussion about under-representation, so I wanted to make sure that the film featured female scientists in prominent roles. In Winston's story, the head of the rival research group is female and so is the founder of the field itself, and we also tried to show some of the patronizing comments that women sometimes have to endure in male-dominated fields.

What is the film's message for PhD students?

It is about finding your voice and gaining that confidence to stand up and tell the world what you have to say. For Cecilia, that means overcoming the impostor syndrome, which a lot of grad students struggle with, and standing up for her research. For Winston, it means not losing his values, which I think is all too easy in academia. Many grad students see the current state of research life as playing a game — selling or overselling yourself and competing for funding and impact score. I try to say that that is not necessarily the way to be successful, that it is better if we all work together.

Does the latest film reflect changes that you have seen in academia since the first one?

In *The PhD Movie*, no one is worried about lack of funding or competing for grants. In the sequel, it is a matter of life and death for the lab. I hear stories of professors having to shut down their labs or not take on any more students, even in top-tier universities such as Caltech and Stanford University in California. It is a pretty grim situation and there is a lot of anxiety compared to a few years ago. There is also conversation about what a PhD programme is for, and whether we should be training students for non-academic jobs, given that fewer than 15% of US doctoral students are going to end up in tenure-track positions. The students themselves are asking: is it worth doing? I also try to capture that. ■

INTERVIEW BY ZOË CORBYN

This interview has been edited for length and clarity.