

themselves. Pillai, who is now a group leader at the European Molecular Biology Laboratory in Grenoble, France, says that was some of the best advice he ever received.

Hostel residents help each other to learn the local language as well as where to shop, bank and do laundry. His only misstep was that he focused on learning French so that he could chat with a romantic interest at the hostel, rather than German, the language of informal conversation outside the lab.

Pillai's four-year residence at the hostel also created a social circle for him beyond the laboratory. People from many nationalities mingled in the kitchen nightly to exchange recipes, horror stories and advice, and there were parties almost every weekend. "It was a great atmosphere for anyone coming into a foreign country to meet up with people in similar situations," Pillai says. He tries to create a similar convivial atmosphere in his lab.

### BUILDING COHESION

Creating a sense of belonging for lab members leads to greater cohesion and a more effective laboratory. Giurfa has found that young scientists from some countries tend to be overly formal and deferential. "I want them challenging my views," he says. "This positive confrontation could enrich our work more than just agreement." Once lab members feel comfortable with each other, they can communicate more freely. "People are more engaged and productive."

Giurfa also tries to recreate the friendly atmosphere of his native country in his lab team by taking students to vineyards, the Pyrenees and local chateaux. And food provides one of the best ice-breakers for his lab staff: he holds periodic potluck parties, in which lab members bring a dish from their home country and explain why and when it would be served in their culture. In this way, cultural differences form the basis of a shared activity.

Lin remembers how pleased he was when labmates in the US Midwest made the effort to invite him out for drinks. Now a physicist at National Chiao Tung University in Taiwan, he tries to create a hospitable environment for visiting scientists. He says that the world has become more global since his days in the United States: most US and European visitors have already mastered chopsticks and know their way around all manner of Asian cuisine. Many have made an effort to read a bit about Taiwanese politics and culture, or at least read a few articles on Wikipedia. And if conversation stalls, he is ready with his own supply of stories of being a young scientist in an unfamiliar country. ■

**Paul Smaglik** is a freelance writer in Milwaukee, Wisconsin.

## TURNING POINT

# Josh Dillon

*Astrophysicist Josh Dillon is finishing his PhD at Massachusetts Institute of Technology in Cambridge in an emerging field of cosmology. He is also co-creator of the bawdy card game 'Cards Against Humanity', which this year produced an add-on deck of 30 science-based cards, profits from which will fund a scholarship for women in science.*



### What does your PhD research involve?

I am working in a field called 21-centimetre cosmology. We're trying to get a baby picture of the Universe. We want to measure the characteristics of the Universe from the time when its first galaxies were forming, about a billion years ago. To do this, we use telescope arrays to detect 21-cm radio waves that were emitted by hydrogen atoms, which were abundant between galaxies then. The challenge is that if the signal exists, it's very faint and is obscured by much more powerful signals from galaxies.

### Does this field require new telescopes?

Yes. I've worked on the proposal for a telescope array called HERA (the Hydrogen Epoch of Reionization Array), a huge hexagonal grid of dishes to be built in the Karoo desert of South Africa. We've been using the Murchison Wide-field Array in Western Australia. HERA will be bigger by a factor of about 20, and therefore much more sensitive. These types of array need to be in radio-quiet, remote places; we are monitoring frequencies of 100–200 megahertz, so we want to mitigate interference from FM radio stations that transmit at around 100 megahertz.

### Is it scary to work in an unproven field?

Yes and no. I'm pretty optimistic about the field. It has enormous potential. In the 2010 decadal survey of astronomy and astrophysics conducted by the US National Academy of Sciences ([go.nature.com/i3v1qj](http://go.nature.com/i3v1qj)), HERA was one of the highest-ranked projects for ground-based astronomy. It's risky and may not work out as well as we would like. Our biggest challenge is that we may not be able to detect those radio emissions — but all scientific endeavours have risk, and I'm convinced that 21-cm cosmology is worth the risk given the scientific potential. I'm headed this autumn to the University of California, Berkeley, for a postdoc and will work with the team I've been competing against to find the signal.

### How does Cards Against Humanity fit in?

It's a fun and worthwhile side project outside my astrophysics pursuits. It started when seven of my high-school friends and I played a card

game that we made up at a New Year's Eve party. It is a politically incorrect party game in which players compete to make the funniest combination of cards. In 2010, we launched a Kickstarter campaign to fund the first print run.

### How will the scholarship work?

We formed a board of 40 female scientists to judge a competition to find a candidate who is not only a promising researcher but can also communicate effectively to the public about what she does. We plan to host videos or blog posts to showcase what the winner is doing.

### What has the response been like?

Overwhelmingly positive. To date, we've raised more than US\$374,000, so we'll be able to fund at least one or two women. Hopefully, we'll be able to fund more in years to come, depending on how much we raise and the outlay per student. Funding just one scholarship doesn't move the needle that much, but that's only part of why we're doing this. The whole point is to raise the visibility of women in science.

### What prompted you to create the scholarship?

Cards Against Humanity has backed other charities, including Wikipedia, Donors Choose, which funds teachers who are eager to do a classroom project, and the Sunlight Foundation, which promotes transparency in politics. When we decided to do a science-focused add-on deck, we knew that we would give the sales proceeds to a charity. We decided that a scholarship for women pursuing an advanced science degree was really appealing. As a company that makes a bawdy party game with a broad social-media reach, we can do one thing — we can help to change the perception of who can be a scientist. ■

INTERVIEW BY VIRGINIA GEWIN