

# TURNING POINT

## Louise Glass

In January, Louise Glass, a microbiologist specializing in fungi at the University of California, Berkeley, was awarded a fellowship from the Adolph C. and Mary Sprague Miller Institute for Basic Research in Science, which offers opportunities for Berkeley faculty members and students to explore creative research projects.

### Why did fungi captivate you?

They are weird and eclectic, with almost other-worldly life cycles that we simply don't understand very well. As a result, they are interesting organisms through which to explore fundamental biology.

### Which fungal species do you work on?

*Neurospora crassa*, a filamentous fungus associated with a long history of biochemical and genetic laboratory techniques. It was the perfect organism for me to study because it married my interests in fungi with my aptitude for genetics. For 20 years, I've used it as a model system to understand cell signalling and communication.

### Have you always aspired to be an academic scientist?

No. I studied mycology as an undergraduate at Colorado State University in Fort Collins. After college, I worked as a mycologist at the American Type Culture Collection, a non-profit biological resource centre in Manassas, Virginia. There, I had direct interactions with PhD scientists who encouraged me to continue my schooling. I didn't have any female role models as scientists, but, with continued encouragement from mentors, I ended up pursuing a PhD in plant pathology at the University of California, Davis.

### How did you get interested in bioenergy?

It was an unexpected series of events. After my PhD I kept track of plant-degradation research. The Energy Biosciences Institute (EBI), a joint venture between the University of California, Berkeley, and energy company BP, formed on campus in 2007 and established a focus on *Miscanthus*, a tall perennial grass that is related to sugar cane — the crop in which most *Neurospora* isolates come from. Although little was known about *Neurospora*'s ability to degrade plant cell walls, the EBI funded a proposal to genetically profile this fungus growing on *Miscanthus*. It has worked out well. We discovered several genes previously not known to be associated with cell-wall degradation, and have helped industry



leaders to engineer a cheaper fermentation process yielding higher ethanol production.

### What does the Miller award allow you to do?

It is difficult to take a sabbatical at Berkeley at present because our department will typically not fund a replacement lecturer for courses. The Miller award pays your salary to the department so that they can hire someone to teach your courses. I feel like I'm due a sabbatical, so this is a perfect time for a new project. I'm looking forward to the luxury of being able to give my undivided attention to this topic when my fellowship starts in 2012.

### Do you consider the bioenergy research to be a career turning point?

Yes. I am now able to explore applications of my interests in the basic biology of filamentous fungi. Interestingly, a synergy is developing between the bioenergy work and other research in the lab. For example, we want to understand the cell-signalling pathways that allow *Neurospora* to regulate the secretions of enzymes that degrade plant cell walls.

### What has been the biggest change in science during your career?

The pace. When I was a graduate student, a postdoc across the hall from me sequenced one kilobyte of DNA. We have just finished sequencing the 40-megabyte genome of 100 wild *Neurospora* isolates. In this day and age, it is so easy to get data. The advantage is being able to ask very elegant questions because you are not limited by data. But it is also easy to lose sight of the biological problem you are trying to address. That is the danger. ■

INTERVIEW BY VIRGINIA GEWIN

## BIOINFORMATICS

### UK data-project hiring

A pan-European biomolecular-data storage and access system based in Britain is to hire up to 100 bioinformaticians, biocurators and software developers from 2012. The European Life Science Infrastructure for Biological Information (ELIXIR) will standardize and boost the quality and quantity of genomics and systems-biology data. Funds will come from the UK Large Facilities Capital Fund, but ELIXIR's business plan must be approved by the UK Treasury, says Cath Brooksbank, head of outreach and training at the European Bioinformatics Institute (EBI) in Hinxton, UK, which coordinates ELIXIR. The EBI is seeking funding from the European Commission for recruitment and operation.

## UNIVERSITIES

### Academia feels crunch

US university presidents and executives had a median pay rise of 1.4% in 2010, less than the inflation rate of 1.6%, says a survey published on 21 February. The College and University Professional Association for Human Resources (CUPA-HR) in Knoxville, Tennessee, polled 1,256 institutions for its 'Administrative Compensation Survey Report'. Some 14% of heads of single-campus universities got a bonus in 2010. Respondents foresaw restricted hiring for 2011, with fewer than 1% expecting to fill "significantly more" posts than last year. Andy Brantley, head of CUPA-HR, says that private institutions are planning hires according to conservative predictions of enrolments and revenue, and public ones are struggling because of state governments' economic woes.

## EUROPE

### Rules restrict income

European governments must ease rules to let universities seek extra income, says a report released on 22 February. According to the European University Association (EUA) in Brussels, institutions face financial uncertainty as public funding shrinks. The group surveyed more than 150 universities across 27 nations; 61% said that regulations bar them from industry partnerships, spin-out opportunities and participation in European research programmes. Thomas Estermann, EUA head of governance, autonomy and funding, says that as universities find new revenue, early-career researchers must aggressively seek external funding.