

MOVERS

Craig Hogan, director, Center for Particle Astrophysics, Fermi National Accelerator Laboratory and professor of astronomy and astrophysics, University of Chicago, Illinois



1993–2008 Professor, astronomy and physics departments, University of Washington, Seattle, Washington

2002–05 Vice-provost for research, University of Washington, Seattle

1995–2001 Chair, astronomy department, University of Washington, Seattle

Craig Hogan was hooked on astrophysics the minute he learned that remnant heat from the Big Bang was still detectable. His wide-ranging contributions to the field include the co-discovery of 'dark energy' — the mysterious force behind the acceleration of the expanding Universe. But he hopes that future experiments will reveal an as-yet undetected dimension of the Universe.

"Craig has forged unusually original and versatile theoretical insights into astrophysics," says Martin Rees, Hogan's PhD adviser at the University of Cambridge, UK. "If you look at any number of subjects — from dark energy to how the Universe began — you'll find the earliest papers are from Craig."

After postdocs at the universities of Cambridge and Chicago and at the California Institute of Technology in Pasadena, Hogan helped to build the first theoretical group at the University of Arizona's Steward Observatory. There, he learned the inner workings of telescope-based experiments as they applied to theory projects.

Hogan eventually joined the physics and astronomy department at the University of Washington in Seattle, where it was easier to bridge his interest in those two fields. Despite the clouds and mountains, Washington had a telescope large enough to survey supernovae, key to detecting dark energy. Hogan plays down the discovery. "The tension between the age of the Universe and the velocity of the galaxies had suggested a cosmological constant for a long time," he says. The real surprise, he adds, was how well the experiment actually worked.

Hogan's research focus now includes proposed space-based experiments such as the Laser Interferometer Space Antenna (LISA), designed to detect gravitational waves in space. "So far we've turned snapshots of the Universe into a silent movie," says Hogan. "Detecting gravitational waves would be like adding a soundtrack — and that is potentially much more transformative to science as a whole than discovering dark energy."

As director of Fermilab's Center for Particle Astrophysics, Hogan will push for LISA as well as for other new ways to explore the physics of gravity and space-time. Fermilab will need a new focus once the Large Hadron Collider in Switzerland makes the lab's Tevatron particle collider obsolete. "Fermilab is the premier high-energy physics lab in the United States," says Hogan, "and gravity is the one force of nature it hasn't yet studied." ■

Virginia Gewin

NETWORKS & SUPPORT

The postdoc interview

The following questions should help you get the most out of your postdoc interview and, with luck, out of your postdoc experience as well.

- If the project is independent, will you be able to take it with you when the fellowship ends? Be wary of a 'conditional project' — if you take on project X first, you will get project Y.
- Will you be granted time to participate in a postdoc council, take courses, learn new technologies, improve communication skills, and so on? Does the mentor/principal investigator (PI) have funds for attending scientific meetings?
- How is authorship handled? How often and where does the lab publish?
- Where is the mentor along the tenure-track timeline? Senior PIs with productive track records are safer. But junior faculty members may be more eager to get more publications out.
- Will the mentor help you apply for small grants or fellowships? How stable is the current funding?
- Is your potential mentor receptive to collaborations with other labs?
- How are research supplies acquired and financed?
- Will you be able to meet lab members to talk freely about the lab and the mentor? A PI's pledges in the courtship phase might change once a commitment is made.

- Can you contact lab alumni? If so, ask them for the five best and five worst things about working with the mentor.
 - Is productivity more important than the number of hours you work?
 - What is the vacation schedule? Is there sick time? Is there a maternity/paternity policy or leave?
 - Does the mentor hold regular lab or individual meetings? An individual development plan helps answer these questions in a written, contractual format.
 - Does the institution have a postdoc policy? If so, read it in detail. Are there postdoc term limits?
 - Does the institution have a postdoc office or association? If so, does it review all the offer letters to ensure the terms and stipend levels are fair? If you walk away thinking, "If I could change one or two major things, it would be great", then keep on walking. Reflect on the interview, talk to your mentors, and trust your gut. ■
- Kryste Ferguson is an academic coordinator at the University of Pennsylvania's Office of Biomedical Postdoctoral Programs. Ivonne Vidal Pizarro is a programme administrator at the American Association for Cancer Research. Reprinted by permission of the Society for Advancement of Chicanos and Native Americans in Science.**

POSTDOC JOURNAL

Judging me, judging you

"Good morning," I begin. "It's great to be here presenting my latest research." And it is good to be in front of faculty members and students, despite my sickening nerves. This is judgement day for getting a permanent faculty position.

Someone rustles my handout as I unveil my work, 'Invasions in heterogeneous environments'. Maybe handouts weren't such a good idea after all. Can I convey my interest, inspire people? Much as in a student lecture, I scan faces for some feedback. Nothing. So I catapult everyone into my favourite results.

The interview gets altogether more personal. How would I teach ecological theory? With whom would I collaborate? What resources would I require? Now, I've done my homework. I've spent evenings reading the department's website. I know their research, their courses, their 'future strategic plan', the funding opportunities, and even some of their hobbies. It helps me answer their questions, but it also helps me judge the department. I figure that this could be a long-term partnership, so I'd better know the place.

The implications are huge. For one, my partner and I finally could live in the same country if I get the position. I try and keep a grip on my nerves by judging the department while they are judging me. I pose a final question in my head. "Will you take this researcher to be your lecturer?" I now await their answer. ■

Jon Yearsley is a senior postdoc in evolutionary genetics at the University of Lausanne in Switzerland.