

MOVERS

Neil Turok, executive director, Perimeter Institute for Theoretical Physics, Waterloo, Ontario, Canada



2007-08: Director, Centre for Theoretical Cosmology, University of Cambridge, Cambridge, UK

1996-2008: Professor, then chair, of Mathematical Physics, University of Cambridge, Cambridge, UK

1993-96: Professor of physics, Princeton University, Princeton, New Jersey

Neil Turok wants the freedom to explore new ideas. When he takes the helm of the Perimeter Institute in Waterloo, Ontario, Canada, this autumn he intends to push forward the frontiers of theoretical physics.

After studying theoretical physics at the University of Cambridge, UK, Turok pursued a PhD in mathematical physics at Imperial College London, where he worked with one of the inventors of superstring theory. Eager to make a lasting discovery, he also pursued his growing interest in galaxy formation. "It was evident even then that Neil was an iconoclast — using good judgement to explore alternative ideas," says Paul Steinhardt, a long-time collaborator and theoretical physicist at Princeton University in New Jersey.

Turok was a postdoc at the Institute for Theoretical Physics at the University of California, Santa Barbara, part of a large group that was encouraged to pursue original lines of research. This freedom allowed Turok to work out the physics necessary for more detailed calculations of how galaxies might be formed. Next, he tried to apply string theory to early-Universe formation theories, first at Fermilab in Batavia, Illinois, and then back at Princeton. But after a year, he realized such an application was premature.

Instead, Turok focused on applied cosmology, using existing theories to predict what would be seen by future measures of, for example, cosmic microwave background radiation. He successfully predicted an observable signature of the presence of dark energy. But, eager to continue exploring the Big Bang, Turok accepted an offer to chair the theoretical physics department at the University of Cambridge — a move that led to his fruitful collaboration with Stephen Hawking. They proposed that the Big Bang and an infinite Universe arose from a minuscule particle.

Most recently, Turok has used string theory to suggest that 'bangs', rather than just one Big Bang, occur repeatedly in a cycle of Universe expansion and contraction. "We are at an uncertain point in cosmology — waiting to see how much of the current conventions will remain in the future," says Steinhardt. "Neil's creative, alternative models of the Universe have helped sharpen the focus of both theorists and experimentalists."

But Turok's increasing dismay with the UK government's influence over university research prompted him to jump at the chance to head up the Perimeter Institute. "Perimeter is dedicated to challenging, pure science breakthroughs — without an agenda," he says.

Virginia Gewin

NETWORKS & SUPPORT

The hunt for new US drug regulators

The US Food and Drug Administration (FDA), the regulatory body that certifies the safety of a wide range of consumer products, is recruiting scientists to fill 1,300 positions by October. This hiring surge — the largest FDA expansion since the counter-terrorism hiring initiative after the terrorist attacks in September 2001 — should strengthen its inspection and oversight capacity.

Most positions require advanced science degrees. But newly minted graduates with at least 30 hours of science coursework are eligible for 200 front-line consumer-safety positions.

The largest recruitment effort is that of the Center for Drug Evaluation and Research (CDER), the FDA group charged with reviewing the drug-safety process used to approve prescription and over-the-counter pharmaceuticals. The centre is hiring more than 400 employees in an effort to reduce drug-approval times.

Russell Abbott, director of the FDA's Office of Management, says he is trying to staff the new White Oak federal research campus, near Silver Spring, Maryland, but some positions are proving difficult to fill. These include mathematical statisticians and medical officers with an oncology speciality. He says the demand for

cancer researchers, particularly in the private sector, is hampering recruitment.

Although there is no targeted recruitment overseas, international applicants can apply through the Visiting Scientist Fellowship Program.

So far, the FDA's embattled status — it has been criticized for lax drug-safety monitoring — is not hindering recruitment. It has already hired more than half the staff it needs. And although salaries at the FDA can't compete with those of industry, it can offer recruitment bonuses of up to 25% of pay, according to Kimberly Holden, the agency's assistant commissioner for management.

Abbott notes that FDA experience is a useful stepping stone to industry. "Experience of the FDA regulatory review process makes someone extremely valuable to pharmaceutical companies," he says. Other perks include flexible schedules and working from home.

But Holden and Abbott maintain that the satisfaction of a career in the public health service is their best selling point. "If you want to be part of an agency involved in every aspect of daily life — food, cosmetics, drugs — this is the time to play a part," says Holden.

Virginia Gewin

POSTDOC JOURNAL

I'm an alien

"Naturalisations en masse, STOP," is one of the more startling political posters that I pass as I cycle into work. The poster shows that the rights of foreigners are once more up for debate. This reminds me that I, as a Brit, am an alien in this European society.

When it comes to my research, the environment is as familiar as a decent pint of English ale and BBC Radio 4. The culture of science is truly international, and interesting research is exciting in any language. At the last count, my department was home to 18 nationalities, making it almost as diverse as the flowers in a Swiss alpine meadow. And rather than this turning into a Tower of Babel, science is done, null hypotheses are refuted, papers are published and impact factors are recorded.

My research gives a welcome dose of the familiar in what can sometimes be an unfamiliar culture. I wasn't brought up with alpine cows, wrapping my lips around french vowels or trying the odd yodel. The unfamiliar is fun, but I'm glad that my habitual pursuit, science, is an important one. Arguably, scientific method crosses national boundaries. I like to think that even a bug-eyed alien postdoc from a distant planet would find some common currency with earthling academics.

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