

MOVERS

Tim de Zeeuw, director-general, European Southern Observatory, Garching, Germany



2003-07: Director, Leiden Observatory, Leiden, the Netherlands

1993-2007: Director, Netherlands Research School for Astronomy (NOVA), Leiden, the Netherlands

1990-2007: Professor of theoretical astronomy, Leiden University, the Netherlands

While fighting the third-year PhD blues at Leiden University in the Netherlands, Tim de Zeeuw, a student in theoretical astronomy, came across an intriguing problem. Until then, galaxies were assumed to have similar elliptical shapes. "But new observations at the time showed the shapes were not as symmetric as scientists once thought," he says. Over three years, he worked with astronomer Martin Schwarzschild, based at Princeton University, New Jersey, who was developing numerical models to describe one particular galaxy shape. In 1982, de Zeeuw offered an explanation for the full orbital structure and variety of observed motions for the entire range of possible galaxy shapes — complementing Schwarzschild's approach. The experience spurred him to seek more new observations that led to interesting problems.

He later went to the Institute for Advanced Study in Princeton, New Jersey, to do theoretical work detailing the structure of galaxies. Next he and his wife, astrophysicist Ewine van Dishoeck, moved to the California Institute of Technology. In 1990 they accepted offers from Leiden University, where de Zeeuw helped to create a research school, NOVA, from existing astronomy departments. Now proud of the school's success, he admits that "you never know with new initiatives — whether to go for it and put the energy in or not". As director of NOVA, de Zeeuw secured ten years' funding from the Netherlands Ministry of Education, Culture and Science. He also served on advisory committees for the Hubble Space Telescope — a pivotal move that fostered excellent relations with US scientists.

In the mid-1990s, he helped garner international support to build a replacement instrument for the William Herschel Telescope in the Canary Islands, which was earmarked for retirement. Dubbed SAURON, the instrument surveys spectra across galaxies to study galaxy formation. That experience spurred de Zeeuw to design other instruments.

From September, he will be director-general of the European Southern Observatory (ESO). "Tim's international experience puts him in a good position to lead the ESO, a European organization that operates globally," says Richard Wade, president of the ESO council.

His first challenge will be to complete the Atacama Large Millimetre Array (ALMA) in Chile on time and on budget. By fostering new opportunities to learn about the formation of stars and planets, ALMA could be as transformational as the Hubble telescope, says de Zeeuw. ■

Virginia Gewin

BRICKS & MORTAR

Hub of alternative energy

The Energy Biosciences Institute isn't built yet, but it is already transforming the field of renewable energy and creating new research positions for scientists. The US\$500-million agreement was announced on 8 February by energy giant BP with the University of California, Berkeley, the Lawrence Berkeley National Laboratory (LBNL) and the University of Illinois at Urbana-Champaign.

At least 25 research groups — comprising some 200 scientists, technicians, postdocs and graduate students — will need a broad range of expertise. Interest is already high, and recruitment will begin later this year. Topics include synthetic biology, plant genetic engineering, functional genomics, microbiology, biochemistry and even carbon sequestration in a comprehensive, carbon-neutral approach to biofuel development.

"This is like the Manhattan Project for bioenergy," says one of the project's coordinators Jay Keasling. Lee Lynd, a biofuels expert at Dartmouth College in Hanover, New Hampshire, estimates that the project roughly doubles the cumulative investment in energy biotechnology worldwide.

One focus will be on developing energy-producing crops. Berkeley wants to hire seven new faculty members, particularly in plant-based

research, says Keasling. The main thrust for Illinois will be feedstock development of potential energy crops, including switch grass, and assessing their environmental impact. It plans to fund at least three faculty positions as well as the 30-45 postdocs and postgraduate support staff supported by BP. Participants at Illinois will use the new Institute for Genomic Biology, designed for cross-disciplinary research.

"One of the reasons BP wanted to do this is the lack of trained scientists in biofuels development," says Fleming Graham, deputy director of the LBNL. But some have met BP's involvement with scepticism (see *Nature* **445**, 688; 2007). "When a university and a national lab get involved with a big company, sometimes hackles can be raised," acknowledges Graham, although he adds that the response so far has largely been positive.

The Energy Biosciences Institute is likely to have a strong influence on future biofuels development. Meanwhile, Graham and others are already seeking federal funding for a separate, six-partner Joint Bioenergy Institute, in the hope of making California's Bay Area the world leader in fundamental energy research. ■

Virginia Gewin

POSTDOC JOURNAL

On resilience

If doing cutting-edge research is like running a marathon, then in the field of molecular biology, DNA cloning — inserting known sequences of DNA into an organism to amplify them — is the equivalent of tying your shoelaces. A basic skill that you learn as an undergraduate, DNA cloning is usually the starting point for getting more complex experiments up and running. This procedure is a familiar routine. So when I recently encountered a problem it was like falling over my own two feet. I was surprised and embarrassed.

Getting my momentum back was a process. First there was denial: "This can't be happening." Then came anger: "*\$#!#*&%! protocol!" Bargaining and abject begging followed: "Please, just let this experiment work..." Next came depression: "I'm never going to finish this project — my career is over." And, finally, acceptance settled in: "It's time to re-evaluate my strategy and to move on."

I had to get back on track after being thrown off course by this unexpected obstacle. Despite a slightly bruised ego, I picked myself up, dusted myself down and kept going, and my resilience paid off. Relief and redemption came in the form of small bacterial colonies. Back on my feet, I'm up and running once again. ■

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