

MOVERS

Edward Seidel, director, Office of Cyberinfrastructure, National Science Foundation, Arlington, Virginia



2003-08: Director, Center for Computation and Technology, and professor of floating point systems in the departments of physics and astronomy, and computer science, Louisiana State University, Baton Rouge

1996-2003: Professor of numerical relativity, Max Planck Institute for Gravitational Physics, Potsdam, Germany

Edward Seidel has been fascinated by space exploration since he was an 8-year-old *Star Trek* fan, a passion that he retained as a young man. But as time went by, his attention turned from space travel to computational astrophysics.

He began his career studying mathematics and physics at the College of William and Mary in Williamsburg, Virginia, before going on to earn a PhD in relativistic astrophysics at Yale University in New Haven, Connecticut. Seidel followed this up with postdoctoral positions at Washington University in St Louis and the University of Illinois at Urbana-Champaign, before computer guru Larry Smarr hired him as a research scientist for the latter institution's National Center for Supercomputing Applications. The move turned out to be one of the most important of Seidel's career. Smarr was at the vanguard of computational astrophysics research, and showed Seidel the importance of supercomputing networks.

After seven years in Illinois, Seidel moved to Germany to help set up the Max Planck Institute for Gravitational Physics, which was founded in 1995 as part of the eastward expansion of the Max Planck Society started after Germany's reunification in 1990. Former colleague Bernard Schutz, now head of the institute's department of astrophysical relativity, lauds not only Seidel's work on black holes, but also his help in advancing communications among European astrophysicists as co-founder of the EU Astrophysics Network.

In 2003, Seidel returned to the United States to become director of the newly established Center for Computation and Technology at Louisiana State University. There, he advanced the use of vast computer networks for studies of complex natural phenomena such as black holes. But what he enjoyed most was the interdisciplinary research, seeing the potential of cyberinfrastructure to reach far beyond astrophysics.

In Seidel's new position at the National Science Foundation's Office of Cyberinfrastructure, he will deal with similar issues but on a more international scale. He will be responsible for dispensing money to scientists for computer facilities. "I will get the chance to work with investigators from many scientific fields to develop cyberinfrastructure," says Seidel. "The position requires the ability to listen carefully to everyone in the community." This seems like the perfect vocation for Seidel, says Schutz, who adds: "He respects everyone, from principal investigators right down to the youngest graduate student." ■

Maria Rossbauer

NETWORKS & SUPPORT

Boosting Brazilian bioenergy

The aim of Brazil's US\$46-million bioenergy research programme (BIOEN) is to keep the country at the cutting edge of biofuels research and development — in part by attracting bright young minds.

After the United States, Brazil is the world's largest ethanol producer. Maintaining its position as a biofuels leader will require improved biofuel-processing techniques, says Carlos Henrique de Brito Cruz, the scientific director of the State of São Paulo Research Foundation (FAPESP), which runs BIOEN. "We need to build a critical mass of top scientists in the fields of plant physiology, bioinformatics and enzymatic hydrolysis to achieve this goal," he says.

BIOEN's projects aim to foster an interdisciplinary approach that enhances biofuels processing at every stage — from plants' photosynthesis to the enzymatic fermentation of sugar cane to create ethanol. The programme will also focus on the social impacts of biofuels production — such as unintended effects on agricultural markets — says Glauca Souza, BIOEN's biomass programme coordinator.

The funds — from FAPESP, Brazil's National Council for Scientific and Technological Development, the State of Minas Gerais Research Foundation,

and Dedini, one of the private companies involved — will promote cooperation between academia and industry.

The Young Investigator Award is the cornerstone of BIOEN, and will fund about 20 scientists' first independent research programmes. Each will receive at least \$200,000 for projects lasting up to four years, including an annual salary of \$39,000. The monies are intended to help the young researchers to establish laboratories in Brazil — an achievement that will enhance their future employment opportunities.

BIOEN's partner companies are hiring as well, augmenting São Paulo's career opportunities. Bioenergy equipment manufacturer Dedini supports university-based research projects, and is hiring senior researchers and chemical engineers with higher degrees in energy science to help produce ethanol from cellulose. "With BIOEN, we hope to continue improving our hydrolysis efforts to reach the commercial scale," says José Olivério, Dedini's vice-president of research and development.

BIOEN is expected to gain \$130 million of investment during the next five years, which should mean additional opportunities for engineers and scientists. ■

Virginia Gewin

POSTDOC JOURNAL

Diagnosing mysteries

For the first time in three years, something stopped me thinking about my research. The other week, I woke up with a severe headache and numbness on the right side of my face. These symptoms sent me to the emergency room, and then to a team of neurologists, whose care I have been under. After a slew of tests, including a clean MRI scan, there was no precise diagnosis of my ailment. I was sent home with pain medication and a recommendation for a facial X-ray, a bone scan and a spinal tap. In other words, the doctors are now shooting in the dark, with little idea as to the source of my illness.

On reflection, my thoughts returned to my own research. Although biologists and medical doctors have made great strides in resolving some of life's mysteries, there is so much more we do not yet know. Lying in the hospital bed sipping cold chicken soup, I realized that I have less control over my research direction than I once believed. In truth, as I explore the mechanistic nuances of plant growth, I simply expose more of the unexplored, which often leads me to shoot in the dark to get to the next step.

My intuition as to where I should aim can only take me so far and, ultimately, like my doctors, I am often left scratching my head in wonder and amazement. ■
Zachary Lippman is a postdoctoral fellow at the Hebrew University of Jerusalem's faculty of agriculture.