worked together in Vancouver, Canada, when the actor was taping the short-lived Canadian Broadcasting Corporation (CBC) sitcom *Leo and Me*. All of the patients except Fox are being treated by PD specialist Donald Calne, former director of the Neurodegenerative Disorders Centre at the University of British Columbia (UBC) in Vancouver.

On the case. Donald Calne thinks an "event" triggered the Fox cluster.

Scientists have long known that PD, characterized by tremors and muscle rigidity, results from cell death in the substantia nigra, a brain region that produces the neurotransmitter dopamine. The vast majority of PD cases, many researchers believe, occur when genetic or environmental factors accelerate a gradual die-off of nigral neurons. Gene mutations are thought to be responsible for many cases of the early-onset form.

Calne and some others, however, argue that a brief environmental exposure, or "event," may kill some neurons in the substantia nigra and damage many others. "As these wounded soldiers die, you start to see symptoms," says Calne, who argues that a toxin or a virus could trigger such a cascade. Calne believes that the Fox cluster fits that hypothesis. All four patients first showed symptoms 7 to 13 years after working together—a lag one would expect to follow an event, he says. In addition, Calne says, "concern has been expressed about the ventilation" in the new, CBC sound-insulated studio they were working in at the time. CBC confirms that it has called in a UBC epidemiologist to examine this concern. To Calne, these facts represent "intriguing straws in the wind that the cause could be viral"—although he cautions that a toxin or other environmental factor is equally plausible.

The explosive mix of Michael J. Fox and speculation about a possible PD virus proved irresistible for many news organizations, including CNN. The coverage has triggered a "deluge" of inquiries, says Langston, who is also chief scientific adviser to the Michael J. Fox Foundation for Parkinson's Research in New York City. The foundation has posted a statement on its Web site, signed by Langston, that plays down a viral link. "Lacking strong scientific evidence, ... the viral theory is not widely held by PD researchers and clinicians," the statement asserts.

The Fox cluster may turn out to be mere coincidence, but neurotoxicologist Peter Spencer of Oregon Health & Science University in Portland says a search for potential toxins or pathogens "should be vigorously pursued. Sure, it could theoretically have been something in the building, but TV crews eat, drink, and perhaps experience other things together." Langston agrees. If you could unravel just one cluster, he says, "boy, you could learn a tremendous amount."

–RICHARD STONE

ENVIRONMENTAL HEALTH

National Tracking Plan Picks Up Speed

Parkinson's disease, autism, childhood leukemia, lupus, asthma: They are all chronic diseases caused by multiple factors—including, some suspect, environmental pollutants. Now an ambitious, $200-million-plus-per-year national plan to ferret out such disease links is gaining momentum among agencies and Congress. At a public meeting last week in Washington, D.C.,* the proposal met with enthusiastic support, although a few participants voiced caveats—such as the need to define environment broadly to include lifestyle factors as well as chemicals.

The Nationwide Health Tracking Network, as it's known, was first proposed as a federal project 2 years ago by a group of environmental health researchers funded by the Pew Charitable Trusts. They wanted to find ways to firm up suspected links between diseases like cancer and pollutants such as heavy metals and pesticides. "We need to move away from speculation about disease to interventions and action," says commission member Lynn Goldman of the Johns Hopkins School of Public Health in Baltimore, former chief of the pesticides office at the U.S. Environmental Protection Agency (EPA).

ELEMENTS OF PROPOSED HEALTH TRACKING NETWORK

National and state tracking of chronic diseases and environmental exposures

Nationwide environmental health rapid response service

National environmental health report

At least five biomonitoring labs; five environmental health centers; an environmental health scholarship program

To do this, the Pew commission proposed that the federal government spend $275 million a year to build or expand mandatory state registries of diseases such as cancer, Parkinson's, and autism. The money would also be used to add more pollutants to databases such as EPA's inventory of chemical releases by industry. It would add more local data and more contaminants to existing exposure studies, such as a Centers for Disease Control and Prevention (CDC) national survey that measures levels of lead and other pollutants in participants' blood. And it would train a corps of experts to investigate whether potential environmental disease outbreaks are linked to the hazard data that has been amassed. The data would be available (with privacy protections) to the public and researchers. But just how the various databases would be connected "is still in evolution," says Shelley Hearne of the Trust for America's Health, a nonprofit in Washington, D.C., promoting the network.

CDC has put its weight behind the plan and received $17.5 million in 2002 as an earmark from Congress. Richard Jackson, head of CDC's National Center for Environmental Health, says the agency will fund pilot projects such as state tracking of immune diseases. The plan has also won the support of lawmakers such as Senator Hillary Rodham Clinton (D–NY), who in March co-introduced a bill to establish a national network that mirrors the Pew report (see table). Clinton says it "will help get to the bottom of" problems such as unusually high cancer rates in Fallon, Nevada, and on Long Island.

At the meeting last week, several participants, who included attorneys and toxicologists, cautioned that environment in the strictest sense could miss the bigger picture, because diet and lifestyle factors such as occupation and smoking are just as likely to contribute to these chronic diseases. "We may miss the actual" trigger if the network assumes that pollutants are to blame, said Carol Henry of the American Chemistry Council, an industry group. Others worried that epidemiology simply can't deliver the kinds of answers policy-makers want, because it may be impossible to pinpoint cause and effect for some diseases. "Some of the promises we're making make me a bit uneasy," said EPA toxicologist Harold Zenick.

At a logistical level, participants also pointed to the difficulty of coordinating activities in at least a half-dozen agencies. Some said that a federal-level committee is needed. "This is a very broad and complex initiative, a very ambitious idea. It's going to take a lot of patience and time, not just one or two symposia," said Sam Wilson, deputy director of the National Institute of Environmental Health Sciences.

Those familiar with the Clinton proposal say it already addresses most of these concerns: For example, it mentions collecting lifestyle data. "It's all been thought of," says Susan Polan of the Trust for America's

CREDITS: (TOP TO BOTTOM) THE MEDIA GROUP/UBC; SOURCE: NATIONAL HEALTH TRACKING ACT OF 2002

* Environmental Health Indicators, sponsored by the Roundtable on Environmental Health Sciences, Research, and Medicine, Institute of Medicine, 10–11 April.

Health. Supporters are hoping that Congress will allocate $100 million for 2003.

–JOCELYN KAISER

BIOMEDICAL RESEARCH

Dexter to Step Down At Wellcome Trust

LONDON—The Wellcome Trust, the $16 billion charitable foundation that dominates British biomedical research, has a year to find a new leader. Mike Dexter has announced that he will not extend his 5-year term.

Dexter, 57, was a respected cancer researcher and newly named director of the Paterson Institute in Manchester when he took the reins of the trust in 1998, after a sale of holdings in the Wellcome drug company turned it into the world's largest medical charity. Many observers say the trust under Dexter's leadership used its money to help save British science, often shaming the government into increasing its own support. Over the next 5 years the trust plans to spend about $4.3 billion, 85% in the United Kingdom, supporting biomedical research and related activities. "[Now] is the right time to begin the search for a successor," Dexter said in a statement about his decision not to seek an optional 2-year extension.

Moving on. Mike Dexter is keeping his options open.

John Bell, head of Oxford University's Department of Clinical Medicine, calls Dexter's decision "a healthy way to run biomedical science. You find people of real quality, but they shouldn't be there forever. A lot was done in 5 years." Dexter has made no plans for what to do next and is "not going to think about it until [his term ends] next year," says a Wellcome spokesperson.

Observers give Dexter credit for charting the trust's recent course, which has included improving salaries and career paths for scientists and coaxing the government into matching an $800 million initiative for modernizing research infrastructure in British universities after years of neglect. Dexter also emphasized the importance of public awareness, says Diana Garnham of the Association of Medical Research Charities. "[The trust] has played an important role in building public confidence in medical research," she says, and has been outspoken on behalf of the use of animals in research and embryonic stem cell research.

But Dexter's work to secure Britain's place in international genomics and large-scale biology may be his most significant accomplishment. Under his direction, the trust pumped hundreds of millions into the Sanger Centre, now Europe's largest sequencing and biological computing facility. The Sanger Centre, in Hinxton, U.K., predates Dexter's arrival, but he "had the vision" to continue pushing for large-scale biology funding, says Bell. Sanger director Allan Bradley says Dexter's presence "played a key role" in his decision to move from the Baylor College of Medicine in Houston.

The biggest challenge facing the trust may be sustaining its planned growth. The trust had allocated at least $160 million to expand its genome-research campus outside Cambridge, where the Sanger Centre is located, but the local council rejected the initial plans on environmental grounds. A new plan proposes to build a smaller post-genomic research facility with a greater emphasis on basic research and less space for start-up companies.

–MELISSA MERTL

Melissa Mertl is a freelance writer in London.

UNITED KINGDOM

Hard Sciences in Terminal Decline?

LONDON—Physical scientists may not yet be extinct in the United Kingdom, but they are rapidly becoming an endangered species.

This week a high-profile government report* describes how enrollment in physics, engineering, and chemistry courses at British universities fell sharply between 1995 and 2000, despite a rise in the number of graduates across all disciplines. The decline is rippling through the whole supply chain of scientists: Schools cite a dearth of physics teachers, while universities and companies complain of a lack of physical science talent at all experience levels. The United Kingdom is "seriously in danger" of being unable to sustain world-class science, argues Peter Cotgreave of the pressure group Save British Science.

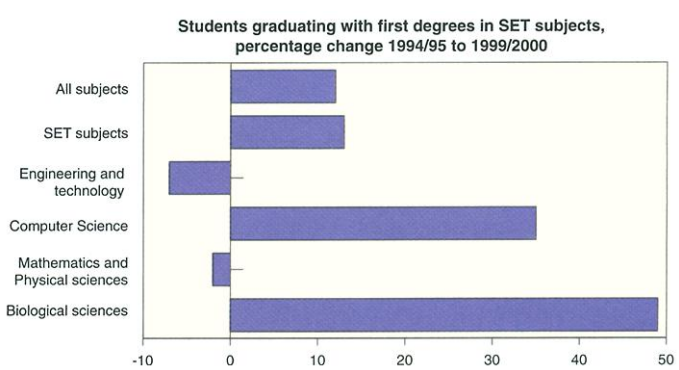
Concerned about the supply of research talent, the Treasury commissioned the report last year and tapped physicist Gareth Roberts to lead the study. Roberts, president of Wolfson College in Oxford, found a scientific community out of balance. Worldwide, only France, New Zealand, and Finland produce more science and engineering graduates per capita than the United Kingdom. But that lead is built upon a 49% rise in the past 5 years in biology, which has masked a 7% decline in physics and engineering graduates and a 16% drop in chemistry over the same period. Such losses have led to "a number of serious problems," says Roberts. Not least the fact that about two-thirds of physics teachers in British schools have no training in physics.

The report calls for a thorough overhaul of the U.K. educational system. One "very urgent" recommendation, Roberts says, is for schools to recruit local university students as teaching assistants, which he calls a better use of their expertise than "filling supermarket shelves." The idea has been kicking around for awhile, but Roberts says it might be taken seriously if the assistants are paid.

The report also urges the Treasury to raise pay for physical scientists at all levels. "It is vital that Ph.D. stipends keep pace with graduate salary expectations," Roberts says. Whereas a new graduate entering employment can expect to take home on average $17,000, a physical scientist staying on in academia gets only $11,000. Postdocs also need a leg up to permanent academic posts, says Roberts, who wants the government to provide funding for 200 new 5-year university fellowships each year. "They should be focused very much on shortage areas," he says.

While welcoming the report, Cotgreave is disappointed that "it doesn't put any figures on how much it's going to cost" to implement. That omission, he says, will make it very difficult to judge the Treasury's response. Science Minister David Sainsbury has promised that the government "will consider" the recommendations in an upcoming spending review, and he notes that the looming shortfall of physical scientists is plaguing many other industrialized nations. "The country that gets this right," Sainsbury says, "has a real opportunity."

–KIRSTIE URQUHART



Hard fall. The physical sciences and engineering are increasingly unpopular majors for British undergraduates.

* www.treasury.gov.uk/Documents/Enterprise_and_Productivity/Research_and_Enterprise/ent_res_roberts.cfm

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