

Ideas on the Edge

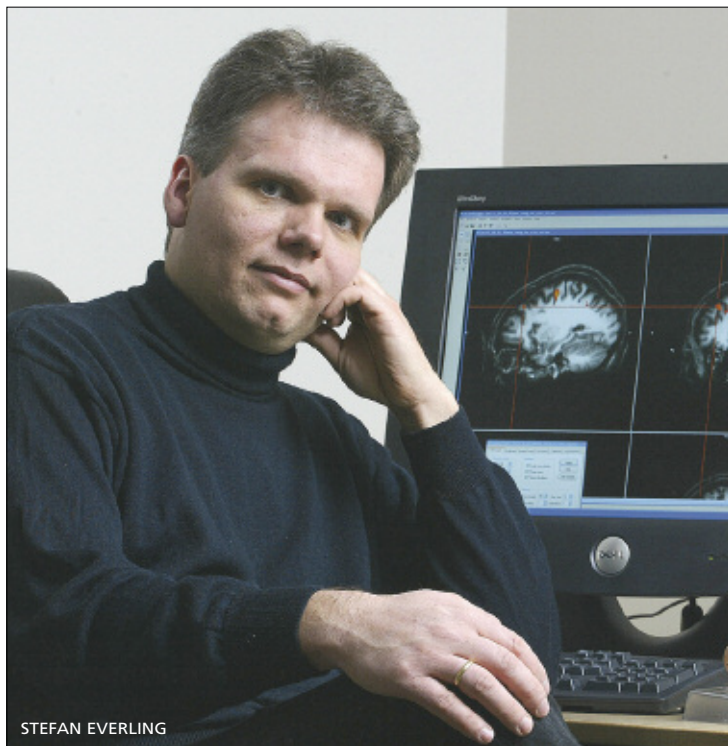
He Won't Look Away

STEFAN EVERLING HAS HAD HIS EYE ON SCHIZOPHRENIA SINCE GRADUATE SCHOOL. AND NOW HIS RESEARCH ON EYE-MOVEMENT AND THE BRAIN AT THE UNIVERSITY OF WESTERN ONTARIO MAY LEAD TO BETTER TREATMENTS.

Ever since an encounter with a schizophrenic patient in the early 1990s, the focus of Dr. Stefan Everling's research has been unwavering.

The decisive moment came while the University of

Western Ontario brain scientist was working on his Ph.D. in brain physiology in Germany. His dissertation involved a study of patients suffering from schizophrenia. During an interview, one of them turned to him and said, "You people have to do something. These medications are so terrible, there are so many side-effects. You really have to find something."



Western Ontario brain scientist was working on his Ph.D. in brain physiology in Germany. His dissertation involved a study of patients suffering from schizophrenia. During an interview, one of them turned to him and said, "You people have to do something. These medications are so terrible, there are so many side-effects. You really have to find something."

Ever since then, Dr. Everling has been looking stead-

fastly at a disease from which society often averts its eyes. And ironically, his research into the ability of the brain to maintain an unwavering gaze may offer clues about how schizophrenia works.

Brain researchers have long known that people who suffer from schizophrenia, as well as other brain disorders like attention deficit, show telltale eye movements under certain conditions. Told to fix their gaze on a visual target, for example, they're unable to resist the reflexive urge to glance away at a peripheral stimulus, like a flash of light. Subjects without the disorder can override the impulse.

Dr. Everling is using nuclear magnetic resonance imaging technology to look at what areas of a subject's brain "light up" with activity at those moments. Since these areas seem to respond differently in schizophrenics, it's a reasonable assumption that they're somehow implicated in how the disease works—and that treatment focused on these areas might be

especially effective. "The biggest problem with today's medications for schizophrenia," explains

Dr. Everling, "is that we give them all systemically. We flood the whole brain. If we could know which area is actually responsible, we might be able to target drug treatments with more precision and cause fewer side effects."

RESEARCH THAT MATTERS REAL-WORLD BENEFITS FOR ONTARIANS:

- future treatments for schizophrenia with far fewer side effects
- reduced financial costs of health care and lost productivity

Using equipment funded in part by the Ontario Innovation Trust, Dr. Everling has pinpointed two or three such candidate areas. But he cautions that the road to any kind of treatment will be a long one. "I don't want to put a time line on it. We're still doing really basic research."

Asked about the importance of that research for **Graduate students Benjamin Nagy and Jessica Phillips check imagery of brain activity captured by nuclear magnetic resonance scanner.**



Ontario, Dr. Everling cites the fact that one in every hundred Canadians suffers from schizophrenia. He also points out that the costs to the health care system are actually higher to treat psychiatric patients than those with cancer.

Whatever the statistics, however, it's clear that schizophrenia will always have a personal face for this researcher. "When you think about the patients, the families...the really great cost is there."



Project: Centre for Brain and Mind: A Facility for Neurophysiology and Neuroimaging
Research Sector: Life Sciences
Institution: The University of Western Ontario
Principal Investigator: Dr. Melvyn Goodale
Trust Investment: \$2,381,300
CFI Investment: \$2,381,300
Total research investment from all sources: \$5,953,251



Ontario
Innovation
Trust

MaRS Centre, Heritage Building
 101 College Street, Suite HL20
 Toronto, ON M5G 1L7
 416-977-9188 Fax: 416-977-9460
 innovation@oit.on.ca
 www.oit.on.ca

Infrastructure for Innovation About the Ontario Innovation Trust

The Ontario Innovation Trust was created in 1999 by the Government of Ontario to invest in research equipment and facilities at Ontario's universities, colleges, hospitals and other non-profit research institutions. The Trust is governed by a volunteer Board of Directors, according to the terms of a Trust agreement established by the Ontario government. A small permanent staff looks after day-to-day operations.

Since its inception, the Trust has committed almost \$843 million to strengthen Ontario's position in the global marketplace of ideas. This represents more than a third of the \$2.44 billion in total funding that has been invested in Trust-supported projects.