

SHARED SCIENCE

Researchers in Canada and Europe are collaborating on leading-edge science.

Some 50,000 Canadians suffer every year from stroke, a crippling affliction triggered by the rupture of blood vessels or the reduction of blood circulation in the brain. Now scientists in Canada and Germany are working together to better understand why.

Through an international partnership between Canada's National Research Council (NRC) and Berlin's Institute for Molecular Pharmacology, a team of researchers is looking for new ways to prevent and manage the damage caused by strokes.

Dr. Danica Stanimirovic, a neurologist at the NRC Institute of Biological Sciences, says that the scientists are combining their expertise in proteomics and genomics, technologies used to follow changes in genes in a diseased state, in order to establish the properties of brain blood vessels in strokes. Their findings could be used to avert strokes or to apply therapies that allow blood vessels affected by strokes to start functioning again.

"Together we can create a more complete picture of the dynamic changes in the brain," she explains. "It's an exchange of technological capabilities and very specific expertise, so it's a nice marriage."

David Stevenson, senior advisor in NRC's International Relations Office, says that Dr. Stanimirovic's research is an example of the explosion of teamwork between leading scientists in Canada and Europe. These partnerships strengthen research on both sides of the Atlantic, avoiding dupli-

cation while combining expertise, knowledge and equipment.

"When you bring people together, there's a doubling or tripling or even quadrupling of your investment and your results and a shortening of time-frames," he says. "It furthers scientific knowledge and speeds up the commercialization process. And of course, good scientific relations often lead to enhanced business opportunities for Canadian companies."

The NRC has negotiated five research agreements with the U.K., France, Germany, Spain and the Czech Republic, encompassing 42 jointly financed research projects. They include collaboration with scientists in France on a new generation of semiconductor materials and work with researchers in Spain on bioinformatics, the merging of computer sciences and biotechnology.

The Partnership Agenda agreed to at the Canada-EU Summit in Ottawa last March cited the importance of raising awareness of collaborative opportunities and of creating new science and technology partnerships.

Through International Trade Canada (ITCan), Canada has struck four science and technology agreements with France, Germany, Japan, and the EU. Since 1996, Canada has had an agreement with the EU that encourages teamwork between Canadian and European scientists for multi-year, multinational research projects.

Key areas of study between Canada and Europe include biotechnology, specifically health and genomics applications such as the area where Dr. Stanimirovic works; information technologies; intelligent materials and new production processes; aeronautics



photo: Maria Moreno and Tom Devcseri/NRC-IBS

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and space; food safety and health risks; and sustainable development.

The program at ITCan strengthens Canada's science and technology capacity, helping collaborators in universities, research institutes and science-related government departments and agencies reach the point where they can commercialize their work. Science and technology counsellors at a number of Canadian missions in Europe learn about science projects in their host countries and promote research partnerships with Canada.

"We have to get the message across that Canada is not just a resource-based economy," says Walter Davidson, a nuclear physicist and administrator at NRC, who recognized the value of cross-Atlantic collaboration as a Science and Technology Counsellor at the Canadian Embassy in Germany in the 1990s. "The bottom line for me was to present Canada as an advanced science and technology-based nation with whom one could have cooperation and partnerships." ♦

For more information on the National Research Council, see www.nrc.gc.ca.

Visit www.infoexport.gc.ca/science to learn about International Trade Canada's Science and Technology Division.

Neurologist Danica Stanimirovic: Exchanges of expertise and technological capabilities "can create a more complete picture of the dynamic changes in the brain."