

OPINION

THE KYOTO PRIZE SYMPOSIUM

San Diego's strong ties to Canada

By Sean Barr
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Since 2002, San Diego has been home to a program that brings international recognition to its high-tech and biotech industries — the Kyoto Prize Symposium. San Diegans have had the opportunity to participate in public presentations by some of the world's greatest researchers and scientists — the Kyoto Prize laureates.

For years, we have been hearing San Diego patriarch Malin Burnham advocate the importance of the Kyoto Prize Symposium to relations between the United States, Japan and Mexico — and to the region at large. This year his message hit home. With the awarding of the first two Kyoto Prizes to Canadian citizens, the symposium has expanded its reach to include all of North America — and has illuminated San Diego's strong trade and biotech ties to Canada, furthering important relationships between our two nations.

Perhaps the strongest of these relationships lies in science and medicine. Canadian Tony Pawson, the newest winner of the Kyoto Prize for Lifetime Achievement in Basic Sciences, represents another example of the ever-growing Canada-California connection. Pawson's groundbreaking work at the University of Toronto underscores the regions' complementary interests, strengths, talents and efforts in medical research and drug development.

Pawson's discovery in 1985 of an "adapter" molecule and subsequent identification of its role in cell signaling has revolutionized scientific understanding of the ways in which cells talk to each other. Pawson's work has impacted nearly every aspect of biomedical research — including developmental biology, endocrinology, immunology, hematology, neurobiology, and cancer and cardiovascular research. It has contributed to the development of new drugs, including a life-saving medicine for leukemia.

The California-Canada relationship makes sense on many levels. California and Canada have similar-sized populations and economies,

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and both economies are based on high-tech and innovation. Canada and California share \$39 billion in bilateral trade, which supports more than 800,000 California jobs. California is Canada's second-largest market, and the total exports of goods from California to Canada are larger than those from Germany, the United Kingdom, France and Italy combined. San Diego-Canada connections abound. San Diego's unique position as a mecca for biotech and pharmaceutical companies is personified in partnerships among Canadian and California scientists that have expanded over the years to include not just academic, but also business relationships, including local San Diego companies such as Gen-Probe, Inverness Medical, Isis Pharmaceuticals, Invitrogen, Fqubed, Illumina, Adavance Technologies, and ProQuest Investment, among others. Gen-Probe, for example, collaborated with a Canadian company, DiagnoCure, to develop a potentially better way to screen for prostate cancer, while an experimental drug from Canada's Oncogenex and San Diego's Isis Pharmaceuticals is helping some men with prostate cancer live longer. Another partnership is aimed at new therapies for ovarian cancer.

In a larger-scale project, Canadian research groups such as McGill University and Genome Quebec, as well as Genome Canada, partnered with San Diego's Illumina in an international collaboration to create a special kind of map of our genes, providing a key resource for researchers to find genes affecting health, disease and responses to drugs and environmental factors.

The Canadian Consulate has helped foster these growing relationships. Hundreds of Canadian senior executives, research pioneers and government officials have come to San Diego to work with local business and research communi-

ties. The Canadian Consulate has organized a number of initiatives designed to facilitate bi-directional science and technology exchanges between San Diego and Canada. One of the newest and most comprehensive programs is the Canada-California Strategic Innovation Partnership, a program established to oversee and foster collaborations in areas ranging from health care to cancer stem cells to computer networks to environmental change. Last June at the BIO2008 International Convention in San Diego, Canada dedicated \$110 million toward a Canada-California Strategic Partnership in Cancer Stem Cells. This collaboration brings together Canada's leading stem cell researchers with those from California, including Moores UCSD Cancer Center and the Burnham Institute.

More recently, stem cell scientists and blood cancer experts from the Moores UCSD Cancer Center and the University of Toronto have pooled their talents, in conjunction with Pfizer, in a proposed project to look at new biological models of cancer development and behavior. They would like to address the question of whether all leukemias can be explained by a stem cell model — that is, a small group of stem cells is resistant to therapy and responsible for tumor growth. They are seeking funding from various sources, including the California Institute for Regenerative Medicine.

The combination seems ideal: The UCSD group has particular experience in translational research, rapidly moving findings in the laboratory to the cancer patient's bedside; the Canadian team is strong in innovation and discovery. In addition, the Toronto team focuses more on acute leukemias, whereas the Moores Cancer Center scientists have expertise in chronic disease.

By combining resources and complementary areas of interest and expertise — along with seed money from Canada and other funding sources, researchers hope to make inroads in understanding cancer stem cells and devising new treatments to attack them. It could be the beginning of a host of future collaborations in the field.

When Tony Pawson arrives in San Diego for the March 18-20 Kyoto Prize Symposium, we are reminded once again that California-Canada connections are well-worth pursuing.

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