

**BRIDGING THE
COMMERCIALIZATION**

GAP

ONE PART RESEARCH INFRASTRUCTURE, ONE PART COMMERCIAL ENTERPRISE,
THE CENTRE FOR DRUG RESEARCH AND DEVELOPMENT IS TAKING A UNIQUE
APPROACH TO HELPING DEVELOP BC'S BURGEONING BIOTECH INDUSTRY



Dr. Sandra Dunn, an Assistant Professor at UBC Vancouver's Department of Pediatrics, Experimental Medicine and Medical Genetics, knew her research had stumbled onto something extraordinary when she discovered a new protein that cancer cells absolutely require in order to survive. By inhibiting the activation pathway of this protein, cancer cells could effectively be destroyed, all without disrupting healthy cells in the process.

The challenge was finding an effective means to block that pathway: an objective that required considerable expertise in chemistry. Without an inhibitor, Dunn could not secure the funding to advance her research to the next level. Even despite a significant effort and the promise her discovery held, her request for a proof-of-principle grant from the Canadian Institutes of Health Research (CIHR) was turned down.

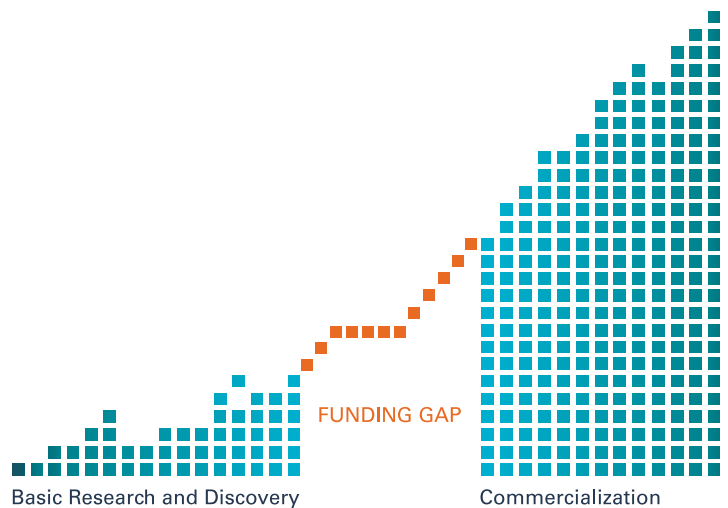
With help from UBC's University-Industry Liaison Office (UILO), Dunn met with the Centre for Drug Research and Development (CDRD) executives Dr. Pieter Cullis and Natalie Dakers who introduced her to a collaboration with Dr. Marco Ciufolini, a professor in the Department of Chemistry at UBC and head of the Division of Drug Design and Synthesis at CDRD. With a track record in creating complex molecules and in developing new medicines, especially anti-cancer agents, Ciufolini started to formulate a solution based upon the location of key amino acids in Dunn's newly discovered protein.

Having overcome the first research obstacle, Dunn, Ciufolini and Dr. Martin Gleave, Director of the Prostate Cancer Centre at Vancouver General Hospital, jointly re-applied to CIHR. Within six months, the team received a \$150,000 grant which has since significantly advanced the research, producing the first-ever inhibitors for Dunn's protein. The new compounds first saw light in Ciufolini's laboratory and then were evaluated in Dunn's laboratory.

"This story is a classic example of how we see CDRD working," says Natalie Dakers, CEO of CDRD. "We have the resources, expertise, contacts and collaborative opportunities needed to make an idea more competitive, allowing researchers to secure the funding necessary to advance their idea."

Supported by universities, teaching hospitals, research institutes and several biotechnology companies in BC, CDRD is a hybrid non-profit organization that integrates an academic research infrastructure with a private company focused on drug commercialization. The Drug Research Institute (DRI) is the

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research arm of CDRD and focuses on enabling BC researchers to further develop promising early-stage discoveries. The commercialization arm of CDRD is DDI Drug Development Inc. (DDI), which advances ideas assisted by CDRD by either licensing these discoveries to existing companies or helping create spin-off companies based on the discovery. It also generates income to provide CDRD with long-term self-sustainability.

Originally conceived by UBC's Dr. Pieter Cullis and Dr. David Dolphin, the concept for CDRD came in response to the need to address the growing commercialization gap between early- and later-stage drug developments. As a result of the high-tech market collapse in 2000, venture capitalists have become hesitant to inject serious dollars into early-stage technology unless the drug has advanced to clinical trials. But advancing a drug to clinical trials can only be achieved by developing its early-stage research, leaving many researchers in a catch-22.

“We have great science in the province. BC has three of the profitable biotech companies out of 20 worldwide. But investors are looking for a much lower risk when investing in these early-stage ideas,” says Dakers. “That’s where CDRD comes in. We help researchers get over the proof-of-concept stage by helping them advance their discoveries to a point where the investment risk is minimized. Without CDRD, we are really concerned about how these ideas can move forward.”

As a result, CDRD declares its primary operating goal is to provide a collaborative platform that makes research facilities, expertise and resources available to all BC researchers. This infrastructure will then help mature technologies developed at CDRD's research institutes to a point where they are able to attract investors' interest, and then be commercialized by the private sector. According to Dakers, collaboration on multiple levels is at the heart of what makes CDRD the only centre of its kind in Canada in that it provides the hub of a research facility where scientists can connect to and benefit from expertise and drug development infrastructure not readily accessible in the province.

Dakers stresses that CDRD is a complement not a competitor to existing technology transfer offices like UBC's UILO, which protects intellectual property developed at UBC and manages the licensing of the technology. “CDRD is not a granting agency

so it does not evaluate projects to give funds out,” says Dakers. “Rather, CDRD provides expertise in the form of grant facilitation, project management and technical experience.”

So far, the response to CDRD has been one of overwhelming support. In April 2007, the Province of BC provided an unprecedented \$25 million in operating funds, which secured the official launch of the organization this year. To date, Dakers says CDRD has raised a total of \$60 million, which is just about halfway towards its total funding requirements. Those funds will immediately be directed towards hiring 30 new employees by the end of the year and providing support to get the laboratories up and running. “It’s not just having the equipment,” says Dakers. “It’s about having experienced people associated with that equipment to really have it work.”

In five years, Dakers and the CDRD team hope to have several new companies created, significant partnerships with the pharmaceutical industry including licenses signed and a fully operational centre that is facilitating 30 to 40 projects in CDRD and supporting 10 technologies in the DDI pipeline on an annual basis. CDRD is also looking forward to securing a permanent home in a proposed new building for UBC's Faculty of Pharmaceutical Sciences, a project that is a top priority for UBC.

Although now a regional centre that incorporates multiple partnerships with its affiliated institutions across BC, CDRD credits UBC as a founding institution that has been instrumental in getting the concept off the ground. As the source of nearly 80 per cent of the research in the province, UBC will continue to be a major contributor to CDRD's future success.

The Centre for Drug Research and Development (CDRD) receives funding from a variety of governmental and industrial sources. Recent funding includes \$700,000 from Western Economic Diversification Canada, \$1 million from the Michael Smith Foundation, \$8 million from the Canada Foundation for Innovation (CFI), \$8 million from the BC Knowledge Development Fund and \$25 million from the Province of BC. CDRD invites all researchers across the province to become CDRD members and benefit from its equipment and expertise by registering on the website: www.cdrd.ca ■