PROMISING NEW RESEARCH AND DEVELOPMENT IN HEALTHCARE TECHNOLOGIES EMERGES FROM THE CORE’S RESEARCH UNIVERSITY PARTNERS

Universities are more than steadfast employers and educators. They are community partners. A university’s highest purpose may be the ability to shape local and regional economies through the research and activities it sponsors. Universities promote and support “networks of knowledge” that convene faculty, students, researchers, investors, entrepreneurs, and others who can share ideas and dream up new ventures. These networks are the foundation of Idaho’s emerging “knowledge economy” and the seeds of new business growth.

A case in point is the recent announcement by researchers from Duke Cancer Institute of a promising new experimental breast cancer treatment – a “smart bomb” – that delivers a toxic payload to tumor cells while leaving healthy cells alone. In a key test involving 1,000 women with very advanced disease, the treatment extended by several months the time women lived without their cancer getting worse and raised projections of survival rates for several cancers.

Researchers combined Herceptin – the first gene-targeted therapy for breast cancer – with chemotherapy so toxic that it cannot be delivered by itself, plus a chemical to keep the two linked until they reach a cancer cell where the poison can be released to kill it.

ImmunoGen Inc. made the technology combining the drugs and Genentech hopes to commercialize the treatment by seeking approval this year to sell the drug in the United States.

The “smart bomb”-type of research, development and commercialization has an undercurrent in the work being done by members of The CORE. Both co-founder Idaho State and member Boise State are working in collaboration with The CORE to develop and advance exciting breakthrough healthcare technologies within their respective mandates from the State Board of Education.

There’s a great example of this at the Idaho State University Idaho Accelerator Center: Here, in this research and development facility that provides opportunities for scientists and engineers from the university, the private sector and the national laboratories to utilize specialized nuclear facilities, researchers are, metaphorically speaking, turning lead into gold. In this case, the element zinc is used to produce a medical isotope of copper – Copper-67 – which has the potential to become a two-edged weapon for fighting cancers including Hodgkin’s Lymphoma, bladder, colorectal and ovarian cancers, and has both therapeutic and diagnostic applications.

The ISU IAC will team with International Isotopes, Inc. – an Idaho Falls-based company licensed by the Nuclear Regulatory Commission – to produce Copper-67, which has not been consistently available in the United States. The International Isotopes facility is also registered with the U.S. Food and Drug Administration as a manufacturing facility for drug products, a classification that will help facilitate the commercial development of the Copper-67 product.

Health care has become an important focus area at Boise State University, too.
Inside BSU’s Office of University and Industry Ventures [www.boisestate.edu/research/tech], specialists support faculty in research activities, and manages industry relations and intellectual property commercialization for the university. The Office is responsible the assessment, protection, development and marketing of new inventions for commercial use and facilitates the internal and external relationships that contribute to the process. The Office also supports entrepreneurship and economic development initiatives on campus.

New inventions are generated each year that are available to license and for industry to utilize in starting a new business or sustaining competitive advantages in an existing business.

BSU has been issued patents for a number of cancer therapies that include the following:

- Triclosan – a first-of-its-kind compound that reduces the negative permanent side effects of the chemotherapy drug anthracycline;
- Fluorescent/ZnO multifunction smart nanoparticles used for particle tracking, cell imaging, antibacterial treatments, and cancer therapy;
- Unique Zinc Oxide nanoparticles (ZnO-NPs) to deliver anticancer therapy in a cell-specific manner, and;
- Unique class of CyanOX-CRI inhibitors that prevents or reduces heart damage by the chemotherapy anthracycline.

Universities do shape – indeed, transform – local and regional economies through the research and activities they sponsor and the talent stream they produce. Collaboration among them is one of the great promises of The CORE. The CORE and its research partners are working everyday to help realize Idaho’s highest purpose of a sustainable knowledge-based economy.