Margin of excellence

As the U's Biomedical Discovery District nears completion, the research within it is already opening doors to better health

BY NICOLE ENDRES

IMAGE: COURTESY OF ARCHITECTURAL ALLIANCE

In a state with a thriving biosciences industry and rich history of innovation, it only made sense for the 2008 Minnesota Legislature to invest in a state-of-the-art research park at the University of Minnesota. The Biomedical Discovery District's six buildings—the last one will open in 2015—will provide 700,000 square feet of space for more than 1,000 investigators and personnel to collaborate on research leading to lifesaving discoveries in cancer, cardiovascular diseases, diabetes, brain sciences, vision, hearing, immunology, and infectious diseases.

PHOTO: SCOTT STREBLE

THE FULL SPECTRUM

Research in the Biomedical Discovery District covers the lifespan and a wide range of diseases.

MOLECULAR TO CELLULAR, CARDIOLOGY TO NEUROLOGY

Working across disciplines ensures that even small discoveries in one area have the maximum impact on research happening throughout the district.

Accelerating discovery

A groundbreaking idea can come from anywhere—from silence, from a brainstorm, from a chance encounter with someone new. That's why the Biomedical Discovery District purposefully incorporates flexible, open laboratory spaces and common areas for those who work there: to make collaboration easier. By sharing knowledge and building one another's discoveries, basic science researchers and clinicians working side by side here can find new treatments for some of today's most challenging and complex health conditions, faster than ever before.

IMAGE: COURTESY OF BWBR

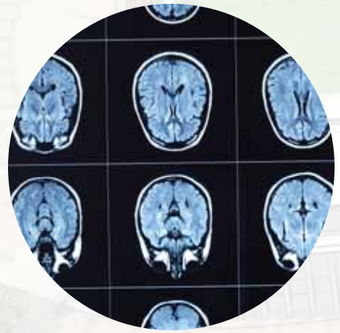
By clustering and interconnecting all buildings in the Biomedical Discovery District—including the 80,000-square-foot Microbiology Research Facility (6), now under construction—the University is maximizing resources and fostering collaboration among disciplines.

1 LIONS RESEARCH BUILDING

Built in 1992 as the initial anchor to the Biomedical Discovery District, this facility is home to researchers focused, for example, on creating a brain cancer vaccine, understanding and treating age-related hearing loss, and examining how changes in the eye can cause macular degeneration.

2 McGUIRE TRANSLATIONAL RESEARCH FACILITY

Scientists in this building, which opened in 2005, are devoted to "translational research," which bridges basic science discoveries and breakthrough clinical care. It houses the Stem Cell Institute (led by Jakub Tolar, M.D., Ph.D.), Orphan Drug Center, and Center for Infectious Diseases and Microbiology Translational Research.



3 CENTER FOR MAGNETIC RESONANCE RESEARCH

Opened in 1999 and expanded in 2010, this internationally acclaimed center contains some of the most powerful human and animal imaging magnets in the world, upholding its reputation as the preeminent center of its kind. It also houses the Center for Clinical Imaging Research, where both research and patient care happen.

4 WINSTON AND MAXINE WALLIN MEDICAL BIOSCIENCES BUILDING

Named in honor of two steadfast University supporters, this is home to world-leading research into Alzheimer's disease (led by Karen Hsiao Ashe, M.D., Ph.D.), ataxia, muscular dystrophy, and other neurodegenerative disorders, as well as the Center for Immunology, where investigators are figuring out how to help the immune system fight off disease.

5 CANCER AND CARDIOVASCULAR RESEARCH BUILDING

Designed as the gateway to the Biomedical Discovery District, this building, which opened in June, features advanced laboratories, instrumentation, and support facilities for research programs focused on cancer prevention, genetic mechanisms of cancer, tumor biology, vascular biology, heart tissue repair, and hypertension. Its first floor is open to the public.

BY THE NUMBERS

12

Football fields worth of state-of-the-art research space in the Biomedical Discovery District

50

Years since the University campus has seen an expansion this large

40

Millions of dollars the Biomedical Discovery District is expected to attract in new annual research funding

4

Displays of public art incorporated into the district's design

WEB EXTRAS

Visit www.give.umn.edu/mb/bdd to find:

- an interactive map of the BDD
- a special feature about the district's public art
- video interviews with cancer expert David Largaespada, Ph.D., about the new labs, and a family that has participated in BDD research

To learn how you can support research in the Biomedical Discovery District, contact Patricia Porter at 612-626-6703 or pkporter@umn.edu.

Fulfilling the promise

At the very core of the Biomedical Discovery District is translational research—bringing breakthroughs in the laboratory to patients as quickly as possible. Ultimately, that's the value of the work that happens here. And that's the goal driving the University's best and brightest thinkers to keep pursuing better treatments and cures.

PHOTO: SCOTT STREBLE

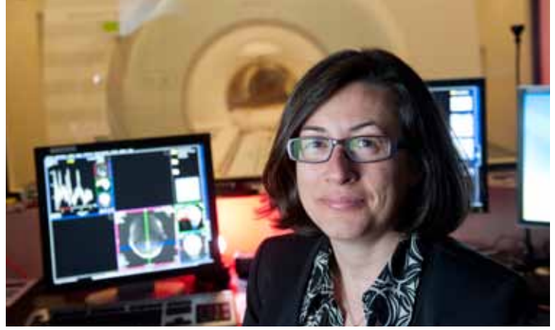


PHOTO: SCOTT STREBLE

PART OF THE SOLUTION

The world-renowned Center for Magnetic Resonance Research specializes in pushing the limits of imaging technologies to get previously unattainable information. Using the center's high-field spectroscopy technologies and expertise, Gülin Öz, Ph.D., and colleagues James Cloyd, Pharm.D., and Paul Tuite, M.D., found that a natural product that's available over the counter increases antioxidant levels in the brains of people who have Parkinson's disease—which could eventually slow the course of the disease. Öz says the medication needs further study, "but it could be part of the solution and keep patients healthy a little longer."

EXPONENTIAL IMPACT

Working in the University-affiliated Adult Congenital and Cardiovascular Genetics Center, Cindy Martin, M.D., sees how heart and blood vessel abnormalities affect her patients' quality of life. And through her lab investigations in the new Cancer and Cardiovascular Research Building, she aims to make their lives better. Martin acknowledges that she's just one physician and can treat only a finite number of patients. "But the beauty of science and innovation," she says, "is that what we can potentially discover has the capacity of logarithmically affecting people."

A SPECIAL CONTRIBUTION

Ten-year-old Caroline Schlehuber remembers the day that she and her mother volunteered to have a "cookie cutter" punch small skin samples out of their arms. Caroline summoned her bravery to make a donation to stem cell research focused on type 1 diabetes at the University with a larger goal in mind: "In any way I can, I always want to help find a cure." Mom Michelle takes pride in the tiny scars that she and Caroline took away from the experience. "She and I both have that badge of honor that we contributed in a very unique way," she says of the research, which will use stem cells made from skin samples to look for clues about why some people develop diabetes while their relatives don't. "We have high hopes for the work they're doing."

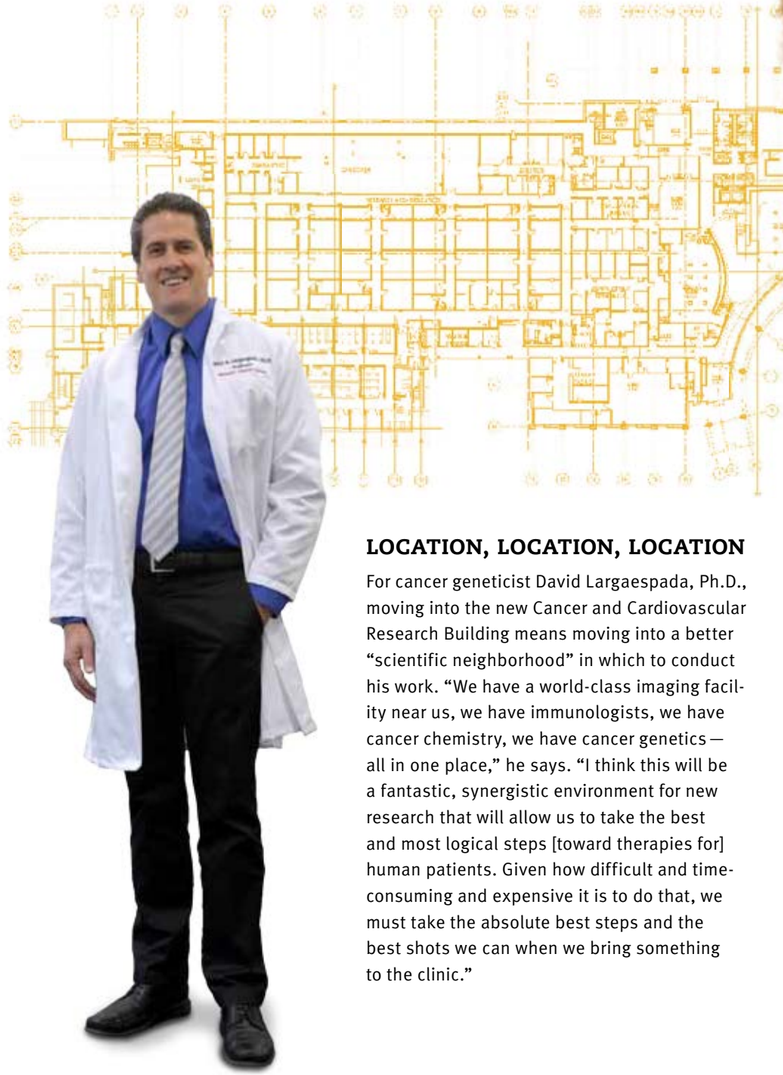


PHOTO: JIM BOVIN

PHOTO: BRADY WILLETTE

LOCATION, LOCATION, LOCATION

For cancer geneticist David Largaespada, Ph.D., moving into the new Cancer and Cardiovascular Research Building means moving into a better "scientific neighborhood" in which to conduct his work. "We have a world-class imaging facility near us, we have immunologists, we have cancer chemistry, we have cancer genetics—all in one place," he says. "I think this will be a fantastic, synergistic environment for new research that will allow us to take the best and most logical steps [toward therapies for] human patients. Given how difficult and time-consuming and expensive it is to do that, we must take the absolute best steps and the best shots we can when we bring something to the clinic."

PHOTO: JIM BOVIN