

## Greetings from IUPUI

March 2008

A year ago in my January "Greetings from IUPUI," I first told you about Executive Vice Chancellor Uday Sukhatme's Signature Center initiative. Simply stated, it is an innovative way for the campus to make strategic investments that take IUPUI's research to a higher level.

As part of his academic planning process, Uday asked the faculty to propose interdisciplinary research centers that would bring academic distinction to the campus, be distinctly identifiable with IUPUI (such as engaging in work that takes advantage of our urban location and establishes partnerships with the community), and attract significant external funding so as to have the capacity to become self-sufficient in three to five years. Three years' funding offers continuity to the centers as they grow their distinctive strengths. The seed funding may also be used more flexibly than is common with federal grants and other research funding sources tied to specific projects.

Achieving campuswide research excellence and enhancing multidisciplinary research are the main drivers behind the \$7.5 million investment, which involves a 50/50 matching program between campus administration and school deans.

The first round of applications last year yielded 19 Signature Centers, which were granted seed money of \$300,000 each spread over three years. The centers have used the funding in a variety of ways: faculty and staff hires, graduate student support, equipment purchases, space renovations, and more. Some, such as the Lugar Center for Renewable Energy, have already reported major federal and corporate funding success.

The announcement of a second round of Signature Centers funding yielded 54 proposals, of which the following 10 are being funded.

1. The **Biomechanics and Biomaterials Research Center** will foster collaborations among scientists, engineers, doctors, and dentists in the fields of mechanobiology and tissue engineering. Multidisciplinary teams will perform basic research in bone and tissue growth and function to develop novel ways to engineer the repair or replacement of damaged tissues and organs.
2. The **Transportation Active Safety Institute** will advance automotive safety through systems that are effective in both preventing crashes and saving lives. Faculty with expertise in vehicle control, sensor networks, wireless communications, and physiology will collaborate to bridge the gap between research and consumer applications.
3. The **Android Science Center**, the first of its kind in the U.S., will build and test more functional, realistic androids and explore human-android interactions. Researchers will use androids to explore cognition and learning as well as identify areas where androids may be used to enhance the quality of

human life.

4. The **Indiana Center for Systems Biology and Personalized Medicine** will bring new discoveries in disease biology to clinical applications that offer cost-effective, personalized diagnosis and treatment of patients. Scientists will connect with clinicians to speed the translation of research into practice.
5. The **Center for Health Geographics** will use high-resolution social, environmental, and health data to understand the role of the environment in human health. Research will assist clinicians investigating the environmental causes of geographic variations in human health.
6. The **Center for Atopic Dermatitis** will bring together a team of scientists and clinicians to develop an integrated approach to the care of patients with chronic inflammatory skin diseases. The objective is to create a clinic which will facilitate research, specialized patient care, and clinical trials for new treatments.
7. The **Institute for Intrinsically Disordered Proteins** is dedicated to understanding the role of protein structure in disease. Cancer and neurodegenerative disease may be linked to the function of proteins with relatively greater intrinsic disorder. The investigation of disordered proteins seeks to accelerate the discovery of disease-fighting drugs.
8. The **Vascular and Cardiac Center for Adult Stem Cell Therapy** will conduct multidisciplinary research aimed at repairing and enhancing the function of cardiovascular tissues. The unique collaborative expertise of both basic and clinical scientists will allow the rapid translation of advances in adult stem cell research to clinical trials of new therapies.
9. The **Assertive Community Treatment Center** will evaluate the effectiveness of mental health programs and prepare mental health specialists to implement effective interventions that assist families dealing with mental illness. The center will also serve as an advocate for public policies that encourage effective and affordable support services for people with mental illness and their families.
10. The **Center for Membrane Biosciences** will explore the interactions of proteins and membrane structures in the control of cellular signaling processes, allowing better understanding of cell membrane function in diabetes and breast cancer and promoting the design of more effective chemotherapeutic interventions to halt the progress of these diseases.

The health and life sciences emphasis is apparent, especially in this second round, but a variety of other disciplines are represented among the total of 29 Signature Centers funded thus far. Most of the research is connected to drivers on the economic scene—just what is needed in the Knowledge Economy—and just where, we hope, IUPUI's Signature Centers are destined to have a profound impact in the future.

---

**Charles R. Bantz**  
**Chancellor**

[Manage your subscription to the Chancellor's newsletter](#)