

The Welch Foundation and Rice University Announce Creation of The Welch Institute

\$100 million gift to establish Houston as a worldwide hub for advanced materials research

Houston, TX – September 2, 2020 – The Robert A. Welch Foundation announced today a \$100 million gift to Rice University to establish **The Welch Institute**, a sweeping strategic partnership focused on world-leading advanced materials research.

The Welch Institute, which will be located on the Rice University campus, will combine fundamental research in chemistry and materials science with the latest in machine learning and artificial intelligence to accelerate the discovery, design and manufacture of the next generation of materials with applications to new energy systems, sustainable water, space systems, telecommunications, manufacturing, transportation, security and more.

The goal of The Welch Institute is to attract top researchers from around the world to collaborate with Rice University’s internationally renowned faculty and scientific resources, making the Institute a center of intellectual discovery, innovation and transformation in advanced materials. The Institute will be governed by an independent Board of Directors and advised by a Scientific Advisory Board.

“The Welch Institute will focus on the development of advanced materials for the good of society and to advance the vision of Robert A. Welch, who believed in basic chemical research as a powerful force for transformative breakthroughs and improving the quality of life,” said Welch Foundation Chair and Director Carin Barth. “It will bring together top minds across all disciplines to catalyze innovation and center leadership in the field right here in the Houston area.”

Why is advanced materials research so important? The major milestones of civilization have been defined by new materials. The Bronze Age. The Iron Age. Even the present Information Age was enabled by the development of advanced materials that resulted in the semiconductor.

Until recently, new materials were often discovered by serendipity. Recent examples include Kevlar, solar panels, lithium batteries, the quantum dots that enabled HDTV and the composites used in knee and hip replacement. But collaboration across disciplines has enabled more intentional discoveries.

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Although the theoretical and computational sciences have played an ever-expanding role in the discovery process, recent advances in data mining, computational chemistry and quantum theory have produced breakthroughs in creating “materials by design” with predictable properties -- new, *de novo*, from-the-molecules-up materials that can help usher in a new era of progress on humanity’s major challenges.

The Welch Institute will be the first such effort in which the goals, the scientific strategy, the scientific team, and the facilities and equipment are constituted at the outset to utilize basic research to drive the design of advanced materials. Researchers at the institute might, for example, explicitly design materials that would be rigid or flexible, to conduct heat, to emit light or to advance quantum computation. In the not-too-distant future developments such as these could lead to solar cells that cheaply and efficiently provide abundant clean energy. Other devices stemming from the Institute’s research might compute at the speed of light or exploit the quantum properties of matter, solving problems that are impossible to overcome on today’s computers.

“Rice University is an ideal foundry for the next generation of advanced materials because of our strengths in both materials and computational sciences,” said Rice University President David Leebron. “The Welch Institute will foster an ecosystem of exploration, drawing from diverse disciplines to drive a new materials-based era to advance human welfare and progress, a multi-faceted successor to previous eras defined by stone, iron, bronze and silicon.”

For The Welch Foundation, the new institute represents a logical next step, building on its established programs, which have had a significant impact on the scientific community. For the past 65 years, the Foundation has supported basic research in chemistry and related fields in Texas colleges and research universities. The Foundation also bestows two annual awards: The Welch Award in Chemistry recognizes substantial achievements in chemical research, and the Norman Hackerman Award in Chemical Research recognizes the accomplishments of scientists early in their careers. Those programs will continue full force.

“The Foundation has contributed more than \$1 billion, endowing 48 chairs at 21 Texas universities and supporting the work of hundreds of world-class research chemists,” said Peter Dervan, chairman of the Scientific Advisory Board of The Welch Foundation and Bren Professor of Chemistry at the California Institute of Technology (Caltech). “We want to develop the Institute while maintaining all of our legacy grant programs and awards, which have served Texas scientists so well over the years.”

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The Foundation considered funding a dedicated research institute several times in the past. **The opportunity to partner with Rice University played an important role in the decision to move forward now. The Rice faculty is world-renowned, and collaboration between disciplines has been integral to the school's culture since its inception.** That collaboration was fundamental to the 1985 discovery of buckminsterfullerene (a new form of carbon) at Rice, which won the Nobel Prize in Chemistry in 1996 and laid the foundation for nanotechnology.

“As a member of The Welch Foundation’s Scientific Advisory Board, I am thrilled the Foundation is investing in such a meaningful way in a field of research that holds so much promise for solving the world’s problems,” said Catherine Murphy, Larry R. Faulkner Endowed Chair in Chemistry at the University of Illinois at Urbana-Champaign.

Sixty-five years ago, Robert A. Welch said, “I have long been impressed with the great possibilities for the betterment of mankind that lay in the field of research in the domain of chemistry.” A half century earlier, Rice University’s first President, Edgar Odell Lovett, proclaimed that there should “be no upper limit” to the ambitions of this Rice University. **Those two visions unite as one in the new institute.**

“The establishment of The Welch Institute represents a new benchmark in the realization of their ambitions, a boon to Houston, and by intention a great benefit to mankind,” added Barth.

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About the Welch Foundation

The Welch Foundation, based in Houston, is one of the nation’s largest private funding sources for fundamental chemical research. Since 1954, the organization has contributed more than \$1 billion to the advancement of chemistry through research grants, departmental grants, endowed chairs and support for other chemistry-related programs in Texas. For more information on the Foundation, please visit www.welch1.org.

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About Rice University

Located on a 300-acre forested campus in Houston, Rice University is consistently ranked among the nation’s top 20 universities by U.S. News & World Report. Rice has

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highly respected schools of Architecture, Business, Continuing Studies, Engineering, Humanities, Music, Natural Sciences and Social Sciences and is home to the Baker Institute for Public Policy. With 3,962 undergraduates and 3,027 graduate students, Rice's undergraduate student-to-faculty ratio is just under 6-to-1. Its residential college system builds close-knit communities and lifelong friendships, just one reason why Rice is ranked No. 1 for lots of race/class interaction and No. 4 for quality of life by the Princeton Review. Rice is also rated as a best value among private universities by Kiplinger's Personal Finance.

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The Welch Institute Media Contacts

Dancie Perugini Ware Public Relations

Dancie Ware: dancie@dpwpr.com

Laura Jones: ljones@dpwpr.com

713.224.9115