

UC SANTA BARBARA

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UC Santa Barbara Staff

## **Kavli Gives \$7.5 Million to Institute of Theoretical Physics To Be Named in His Honor**

Fred Kavli, through the auspices of the recently established Kavli Foundation, has given \$7.5 million to the Institute for Theoretical Physics at the University of California at Santa Barbara (UCSB), which will be named at a future ceremony in honor of the donor.

Kavli is the founder and former chairman and CEO of the Moorpark, Calif.-based Kavlico Corp.

The Institute for Theoretical Physics hosts the world's leading physicists at conferences and programs designed to provoke interactions leading to insights into the most intellectually provocative scientific questions of the day.

The Kavli gift will provide for two pressing needs: program flexibility and additional space.

The National Science Foundation (NSF) allocates \$4 million annually towards the running of the Institute for Theoretical Physics.

Another \$1 million annually comes from the UCSB operating budget.

The scientific programs supported by federal funds are determined at five-year intervals in conjunction with an arduous NSF review process.

The last review in 1999 resulted in the largest federal grant--\$17.3 million--ever made to UCSB.

Need for Flexibility"Our challenge," said David Gross, director of the Institute for Theoretical Physics, "is that scientific progress cannot be anticipated in five-year intervals.

Discoveries happen!

Somebody observes something new in a lab---e.g., high temperature superconductivity; or somebody makes an analytical breakthrough---the dualities of string theory.

The discoveries then stimulate intense intellectual inquiry.

It is as if new territory were suddenly revealed and opened, and the prospectors rush to exploration.

However glorious the stimulus of the unexpected to the advancement of science, it is precisely the unexpected that cannot be foreseen and therefore accommodated by a five-year funding cycle."

Said Gross, "To be really effective as the lightning rod for physics and all its unfolding 21st-century ramifications (in terms of quantum computing, nanoscience, bioinformatics, and neural networks, as well as the more traditional fields of 20th-century physics), the Institute for Theoretical Physics must have the ability to respond rapidly to breakthroughs.

Fred Kavli's gift has given us that ability.

Fred is both remarkably generous and remarkably visionary.

And that combination has proved a great boon to the soon-to-be Kavli Institute for Theoretical Physics.

We are very grateful."

The facility exists on the UCSB campus because Santa Barbara's proposal to the NSF over 20 years ago to establish an institute for theoretical was selected over competing proposals from 50 other institutions, including Berkeley, Stanford, Princeton, and Harvard.

The building, designed by Michael Graves, has been named Kohn Hall, after the Institute's founding director, physicist Walter Kohn, winner of the 1998 Nobel Prize in Chemistry.

Need for SpaceBut, according to Gross, "The Institute's programs have been so successful that we have more scientists who want to attend than we have places to put them."

Of the 190 scientists who wanted to participate in the Institute's fall 2001 nanoscience program, only 76 could actually attend the program because there was no room to accommodate the other applicants.

Over 200 scientists applied to be participants in the fall 2001 quantum information program; only 45 could be squeezed into the existing facility.

"We had to turn away some of the best scientists in the world because we didn't have enough ordinary office space," said Gross.

"Fred Kavli's gift will enable us to build an addition to Kohn Hall so that we do not have to run international science programs on a first-come, first served basis."

"This major gift will have a lasting impact on our Institute for Theoretical Physics and the world's scientific community," said UCSB Chancellor Henry Yang. "The gift will help enhance the vision shared by Mr. Fred Kavli, Professor David Gross, and our colleagues at the Institute for Theoretical Physics in pursuit of scientific discoveries at many new frontiers. The gift will help us build an addition to Kohn Hall so that we can accommodate more outstanding scientists who would otherwise not be able to come.

We are honored to have our ITP named after Fred Kavli in appreciation of his vision and generosity."

Kavli, who studied physics at the Norwegian Institute of Technology before coming to the United States to launch his own business, said, "I have a great appreciation of physics.

My physics studies gave me fundamental knowledge that later bolstered my own efforts to start a high tech business.

Insights into fundamental reality form the basis for technological innovation.

So physics has its practical uses.

But I am also deeply intrigued by cosmology.

I am curious about the unfolding of the universe.

Supporting the Institute for Theoretical Physics appeals both to the practical and to the philosophical sides of not only my own nature, but also, I suspect, human nature."

Less than two years after Kavli arrived in the United States, he started Kavlico, initially to make linear feedback position sensors for aircraft.

Most planes today are equipped with Kavlico sensors.

These devices detect the position of an aircraft's control surfaces such as the rudder.

The sensors provide a feedback signal for positioning of these surfaces.

In 1975 Kavlico began to design pressure sensors for automobiles.

Now used in many areas in cars, pressure sensors detect pressure differentials in, for instance, automotive exhaust recirculation or fuel-injection systems.

That information is relayed to the car's computer which regulates the combustion processes.

Pressure sensors---Kavlico manufactures around 10 million a year--- comprised 80 percent of the company's business at the time of its sale by Kavli in 2000.

He set up the Kavli Foundation to encourage and support the pursuit of knowledge with likely long-term benefits for all peoples.

The Foundation aims to establish endowed chairs at the world's best universities.

Kavli has endowed two chairs in the UCSB College of Engineering, one in Optoelectronics and Sensors and the other in MicroElectroMechanical Systems (MEMS).

A resident of Santa Barbara, Kavli is a trustee of the UCSB Foundation.

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Note to editors: Professor Gross can be reached at 805-893-7337 or [gross@itp.ucsb.edu](mailto:gross@itp.ucsb.edu).

For photographs of Mr. Kavli, Professor Gross, and the Kavli Institute for Theoretical Physics, visit the KITP web site

<http://www.kitp.ucsb.edu/>.

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## **About UC Santa Barbara**

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.