



*Science and the
University-Government
Partnership*

CALIFORNIA INSTITUTE OF TECHNOLOGY

Thursday, October 23, 2014
8 p.m.
Beckman Auditorium
Pasadena, California

ROBERT J. ZIMMER



Robert J. Zimmer is the 13th president of the University of Chicago, appointed in July 2006.

As president of the university, he serves as chair of the board of governors of Argonne National Laboratory and chair of the board of directors of Fermi Research Alliance LLC, the operator of Fermi National Accelerator Laboratory.

He is a member of the National Science Board, the governing body of the National Science Foundation, and also served on the President's Committee on the National Medal of Science from 2008 to 2010. He is on the executive committee of the Council on Competitiveness and is a fellow of the American Academy of Arts and Sciences and the American Association for the Advancement of Science.

Zimmer's expertise is in the mathematical field of geometry, particularly ergodic theory, Lie groups, and differential geometry. He has held numerous administrative positions at the University of Chicago, including appointments as chairman of the mathematics department, deputy provost, and vice president for research and for Argonne National Laboratory. He served as provost at Brown University from 2002 to 2006.

President Zimmer is the author of two books, *Ergodic Theory and Semisimple Groups* (1984) and *Essential Results of Functional Analysis* (1990), as well as more than 80 mathematical research articles. He served on the Board on Mathematical Sciences and their Applications of the National Research Council as well as on its executive committee. He held the title of Max Mason Distinguished Service Professor of Mathematics at the University of Chicago before leaving for Brown University, where he was the Ford Foundation Professor of Mathematics in addition to being provost.

President Zimmer earned an AB, summa cum laude, from Brandeis University in 1968 and a PhD in mathematics from Harvard University in 1975. He joined the Chicago faculty as an L. E. Dickson Instructor in the mathematics department in 1977. He was also on the faculty of the U.S. Naval Academy and has held visiting positions at Harvard University and at institutions in Israel, France, Australia, Switzerland, and Italy.

Caltech is pleased to present "Science and the University-Government Partnership," a panel discussion organized on the occasion of the inauguration of Thomas F. Rosenbaum as the Institute's ninth president.

The discussion is moderated by Robert J. Zimmer, president of the University of Chicago, chair of the board of governors of Argonne National Laboratory, and member of the National Science Board.

MAJOR GENERAL CHARLES F. BOLDEN



Charles F. Bolden, Jr. (USMC-Ret.), was confirmed as the 12th Administrator of the National Aeronautics and Space Administration in July 2009.

At NASA, General Bolden has overseen the transition from space shuttle missions to full utilization of the International Space Station and space and aeronautics technology development. During General Bolden's tenure, the agency's science activities have included an unprecedented Mars landing, launch of a spacecraft to Jupiter, enhancement of Earth-observing satellites, continued progress toward the 2018 launch of the James Webb Space Telescope, and support of commercial space transportation systems.

Earlier in his career, General Bolden served with the U.S. Marine Corps for 34 years, including 14 years as a member of NASA's Astronaut Office. After joining the office in 1980, he traveled to orbit four times (1986–1994), commanding two missions and piloting the others. His flights included deployment of the Hubble Space Telescope and the first joint U.S.-Russian shuttle mission.

Prior to his nomination as NASA administrator, General Bolden was chief executive officer of Jack and Panther LLC, a business enterprise providing leadership, military, and aerospace consulting as well as motivational speaking.

General Bolden earned a BS in electrical science from the U.S. Naval Academy (1968) and was commissioned as a second lieutenant in the Marine Corps. He became a naval aviator and flew more than 100 combat missions. He then earned an MS in systems management from the University of Southern California (1977) and, one year later, was assigned to the Naval Test Pilot School.

During General Bolden's career as an astronaut, he served in many technical assignments, including as technical assistant to the director of flight crew operations, chief of the safety division at Johnson (where he oversaw efforts to return the shuttle to flight after the 1986 Challenger accident), and assistant deputy administrator at NASA Headquarters. After his final shuttle flight, General Bolden left NASA and returned to active duty with Marine Corps operating forces. He was promoted to his final rank of major general in 1998 and named deputy commander of U.S. forces in Japan. General Bolden retired from the Marine Corps in 2003. Among his many military decorations are the Defense Superior Service Medal and the Distinguished Flying Cross. General Bolden was inducted into the U.S. Astronaut Hall of Fame in May 2006.

SUBRA SURESH



Subra Suresh is the ninth president of Carnegie Mellon University, where he began his tenure in July 2013. Prior to assuming this role, he served as director of the National Science Foundation (NSF).

A distinguished engineer and scientist, President Suresh is the only current university president to be elected to all three National Academies—the Institute of Medicine (2013), the National Academy of Sciences (2012), and the National Academy of Engineering (2002). He is also one of only 16 Americans with membership in all three.

At the NSF, he established several new initiatives, including INSPIRE (Integrative NSF Support Promoting Interdisciplinary Research and Education), PEER Science (Partnerships for Enhanced Engagement in Research Science, in collaboration with USAID), the NSF Career-Life Balance Initiative, the NSF Science Across Virtual Institutes (SAVI) program, GROW (Graduate Research Opportunities Worldwide), and the NSF Innovation Corps.

Before joining NSF, President Suresh served as the dean of the school of engineering and as the Vannevar Bush Professor of Engineering at the Massachusetts Institute of Technology (MIT). His experimental and modeling work on the mechanical properties of structural and functional materials, innovations in materials design and characterization, and discoveries of possible connections between cellular nanomechanical processes and human disease states have shaped new fields at the intersections of traditional disciplines.

In addition to the three National Academies, President Suresh has been elected to the Spanish Royal Academy of Sciences, the Spanish Royal Academy of Engineering, the German National Academy of Sciences, the Royal Swedish Academy of Engineering Sciences, the World Academy of Sciences, the Indian National Academy of Engineering, the Indian Academy of Sciences, and the Chinese Academy of Sciences.

President Suresh received his bachelor of technology degree from the Indian Institute of Technology, Madras, in first class with distinction; a master's degree from Iowa State University; and a PhD from MIT. Following postdoctoral research at the University of California, Berkeley, and the Lawrence Berkeley National Laboratory, he joined the faculty of engineering at Brown University in December 1983 and was promoted to full professor in July 1989. He joined MIT in 1993 as the R. P. Simmons Professor of Materials Science and Engineering and has served as head of MIT's Department of Materials Science and Engineering.

ELLEN WILLIAMS



Ellen Williams was named senior advisor in the office of the secretary of energy in April 2014 and stands as the nominee to serve as director of the Advanced Research Projects Agency-Energy (ARPA-E). As senior advisor, Dr. Williams develops strategic plans for technology transfer across the U.S. Department of Energy.

Most recently, Dr. Williams served as chief scientist for British Petroleum (BP). She was responsible for the company's long-range scientific plans and activities as well as its major university research programs around the world. She provided strategic scientific advice to BP's senior executives on all matters of significance.

Prior to joining BP, Dr. Williams built a 30-year career in academia, obtaining her PhD in chemistry from Caltech in 1981 and then moving to the University of Maryland, where she is Distinguished University Professor in the Department of Physics and the Institute of Physical Science and Technology. Her research expertise is in nanoscience and lies at the intersection of physics, chemistry, and materials science. Dr. Williams leads investigations that identify the positions of individual atoms in very small structures and that test the consequences of nanoscale fluctuations. She also studies applications that include the control of nanoscale materials fabrication, electromigration, electrical noise in nanoelectronic devices, and flexible electronics. Dr. Williams founded the University of Maryland Materials Research Science and Engineering Center and served as its director for 15 years. Throughout her academic career, she has provided extensive technical advice to the U.S. government, primarily through the Departments of Energy and Defense. She is now on leave from her faculty position.

Dr. Williams has published widely in peer-reviewed journals and has served on a large number of professional committees. She is a member of the National Academy of Sciences and a fellow of the American Academy of Arts and Sciences, the American Physical Society, and the American Vacuum Society.