



The Inauguration of

Thomas F. Rosenbaum

as the Ninth President of the
CALIFORNIA INSTITUTE OF TECHNOLOGY

Friday, October 24, 2014
2 p.m.
Beckman Mall
Pasadena, California

PROCESSIONAL

CHIEF MARSHAL

*Fiona A. Harrison, Chair of the Presidential Search Committee
and Benjamin M. Rosen Professor of Physics*

CONVOCATIONS MARSHAL

*Konstantinos P. Giapis,
Professor of Chemical Engineering*

NOBEL AND CRAFOORD LAUREATES

*Led by Robert H. Grubbs,
Victor and Elizabeth Atkins Professor of Chemistry*

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CALTECH ALUMNI ASSOCIATION BOARD OF DIRECTORS

*Led by Julia A. Kornfield (BS '83), Professor of Chemical Engineering;
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Professor of Control and Dynamical Systems and Bioengineering*

DELEGATES FROM ACADEMIC INSTITUTIONS

*Led by Paul E. Dimotakis (BS '68, MS '69, PhD '73), John K. Northrop
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and Jonas Zmuidzinas (BS '81), Merle Kingsley Professor of Physics
and Chief Technologist, Jet Propulsion Laboratory*

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Mechanical Engineering and Executive Officer for Chemical Engineering;
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THE PLATFORM PARTY

THE FACULTY

THE CHAIRS OF THE DIVISIONS

*Led by Dennis A. Dougherty, George Grant Hoag Professor of Chemistry;
and Dianne K. Newman, Professor of Biology and Geobiology and
Investigator, Howard Hughes Medical Institute*

THE PROVOST

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PRESIDENT'S EMERITI

THE TRUSTEES

SPEAKERS

THE PRESIDENT

THE CHAIR OF THE BOARD OF TRUSTEES

*Led by Richard C. Flagan, Chair of the Faculty and
Irma and Ross McCollum-William H. Corcoran
Professor of Chemical Engineering
and Environmental Science and Engineering*

PROGRAM

PRESIDING

David L. Lee (PhD '74), Chair of the Board of Trustees

ORGAN PRELUDE

*Leslie J. Deutsch (BS '76, MS '77, PhD '80), Chief Technologist
for the Interplanetary Network Directorate, Jet Propulsion Laboratory*

PROCESSIONAL

*The Caltech Convocation Brass and Percussion Ensemble
Directed by William W. Bing, Lecturer in Concert Band and Jazz Band*

GREETINGS FROM THE INSTITUTE

Faculty

*Richard C. Flagan, Chair of the Faculty and Irma and Ross
McCollum-William H. Corcoran Professor of Chemical Engineering
and Environmental Science and Engineering*

Undergraduate Students

*Catherine Jamshidi, President of the Associated Students
of the California Institute of Technology*

Graduate Students

Sunita Darbe, Chair of the Graduate Student Council

Alumni

*Samantha Foster (BS '98),
President of the Caltech Alumni Association*

KEYNOTE SPEAKER

*Don Michael Randel, Chair of the Board of the
American Academy of Arts and Sciences and President Emeritus of the
Andrew W. Mellon Foundation and the University of Chicago*

MUSICAL SELECTION

*"Gaudeamus Igitur," traditional college song (c. 1287)**

Commissioned arrangement by Robert A. M. Ross

Performed by the Caltech Glee Club

Conducted by Nancy Sulahian, Director of Choral Activities

**Please refer to page 17 of this program*

INVESTITURE OF THE PRESIDENT

David L. Lee (PhD '74), Chair of the Board of Trustees

Assisted by Benjamin M. Rosen (BS '54), Chair Emeritus;

and Kent Kresa, Chair Emeritus

INTRODUCTION OF PRESIDENT ROSENBAUM

Fiona A. Harrison, Chair of the Presidential Search Committee

and Benjamin M. Rosen Professor of Physics

INAUGURAL ADDRESS

Thomas F. Rosenbaum, President

Sonja and William Davidow Presidential Chair

and Professor of Physics

ALMA MATER

*"Hail CIT"**

Led by the Caltech Glee Club

**Please refer to page 17 of this program*

RECESSIONAL

The Convocations Brass and Percussion Ensemble and Organ

ORGAN POSTLUDE

*"The Throop Institute March," composed by E. C. Kammermeyer
in 1900 for the Throop Institute Guitar and Mandolin Society*

*You are welcome to attend a reception
on the Olive Walk following the program.*

THOMAS F. ROSENBAUM

Thomas F. Rosenbaum was formerly the John T. Wilson Distinguished Service Professor of Physics at the University of Chicago, where he served as the university's provost for seven years. As Chicago's provost, he had responsibility for a broad range of institutions and intellectual endeavors across the sciences, arts, and professional schools. He was deeply engaged with Argonne National Laboratory as the university's vice president for research from 2002 to 2006 and as a member of its Board of Governors.

Dr. Rosenbaum is an expert on the quantum mechanical nature of materials—the physics of electronic, magnetic, and optical materials at the atomic level—that are best observed at temperatures near absolute zero. He conducted research at Bell Laboratories and at IBM Watson Research Center before joining the University of Chicago faculty. Dr. Rosenbaum is an elected fellow of the American Physical Society, the American Association for the Advancement of Science, and the American Academy of Arts and Sciences. He received his bachelor's degree in physics with honors from Harvard University and an MA and PhD in physics from Princeton University.

Dr. Rosenbaum is joined at Caltech by his wife, Katherine T. Faber, who has been appointed the Simon Ramo Professor of Materials Science in the Division of Engineering and Applied Science.

DON MICHAEL RANDEL

Don Michael Randel serves as chair of the board of the American Academy of Arts and Sciences, one of the nation's oldest and most prestigious learned societies. He is president emeritus of the Andrew W. Mellon Foundation and of the University of Chicago, and he has served as provost of Cornell University and as dean of Cornell's College of Arts and Sciences. Prior to his administrative service, Dr. Randel served for 32 years as a member of Cornell's faculty in the department of music.

A prominent musicologist, Dr. Randel earned his degrees (bachelor's, master's, and doctorate in music) at Princeton University. His scholarly expertise is in Spanish and French music of the Middle Ages and Renaissance. As a music historian, Dr. Randel is widely published, particularly on medieval liturgical chant. He has also written on topics as varied as Arabic music theory, Latin American popular music, and 15th-century French music and poetry.

From July 2006 to March 2013, Dr. Randel was president of the Andrew W. Mellon Foundation, an organization dedicated to supporting the arts and humanities as well as higher education. For the preceding six years, he served as president of the University of Chicago. There, he led efforts to strengthen the humanities and the arts on campus while supporting a broad range of interactions with the city of Chicago and further strengthening the university's programs in the physical and biomedical sciences and its relationship with Argonne National Laboratory. He also led the university's two-billion-dollar campaign, the largest in its history.

Dr. Randel has served as the editor of the *Journal of the American Musicological Society*; *The Harvard Dictionary of Music*, 4th ed.; *The Harvard Biographical Dictionary of Music*; and *The Harvard Concise Dictionary of Music and Musicians*. He is also a member of the editorial board of Encyclopedia Britannica.

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<i>Walter Burke</i>	<i>Richard M. Rosenberg</i>
<i>Jewel Plummer Cobb</i>	<i>Robert J. Schultz</i>
<i>Harry M. Conger</i>	<i>Mary L. Scranton</i>
<i>Richard P. Cooley</i>	<i>Dennis Stanfill</i>
<i>Camilla Chandler Frost</i>	<i>Charles H. Townes</i>
<i>Arthur L. Goldstein</i>	<i>Virginia V. Weldon</i>
<i>Philip M. Hawley</i>	

HONORARY LIFE MEMBER

Betty I. Moore

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Mary L. Webster, Secretary, Board of Trustees, and Executive Assistant to the President

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<i>Mary Baker (MS '67, PhD '72)</i>	<i>Benjamin M. Rosen (BS '54)</i>
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<i>Uma R. Chowdhry (MS '70)</i>	<i>David W. Thompson (MS '78)</i>
<i>Andrea M. Ghez (MS '89, PhD '93)</i>	<i>Charles R. Trimble (BS '63)</i>
<i>David L. Lee (PhD '74)</i>	<i>Alvin W. Trivelpiece (MS '55, PhD '58)</i>
<i>Douglas D. Osheroff (BS '67)</i>	<i>Charles E. Wheatley III (BS '56)</i>

NOBEL AND CRAFOORD LAUREATES

David Baltimore, Nobel Prize in Physiology or Medicine, 1975
Andrea M. Ghez, Crafoord Prize in Astronomy, 2012
Robert H. Grubbs, Nobel Prize in Chemistry, 2005
Rudolph A. Marcus, Nobel Prize in Chemistry, 1992
Douglas D. Osheroff, Nobel Prize in Physics, 1996
Hugh David Politzer, Nobel Prize in Physics, 2004
Gerald J. Wasserburg, Crafoord Prize in Geosciences, 1986
Ahmed H. Zewail, Nobel Prize in Chemistry, 1999

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<i>Samantha Foster (BS '98)</i>	<i>Thomas W. Workman (BS '86, MS '87, PhD '92)</i>

DELEGATES IN ATTENDANCE

ACADEMIC INSTITUTIONS

1167
University of Oxford
Michael Collins

1583
University of Edinburgh
Timothy O'Shea

1636
Harvard University
Woodward Fischer
Jeffrey S. Rubin

1701
Yale University
Peter Dervan
John Mark Hansen

1740
University of Pennsylvania
Paul Williams

1746
Princeton University
Eric Edmunds

1754
Columbia University
Anne Kim

1764
Brown University
Bethany L. Ehlmann

1787
University of Pittsburgh
John Gordon

1789
The University of North Carolina
at Chapel Hill
Cathy Watts

1794
Bowdoin College
David Reilly

1794
École Polytechnique
Jacques Biot

1817
University of Michigan
William Bogaard

1819
University of Virginia
Charles Plott

1820
Indiana University
Alex L. Sessions

1821
McGill University
Rudolph Marcus

1826
Case Western Reserve University
James Breckinridge

1827
University of Toronto
Marni Wiesbofer

1837
Mount Holyoke College
Nina Chomsky

1838
Duke University
Joel W. Burdick

1839
Boston University
Jean Morrison

1842
Ohio Wesleyan University
Keith Rozanski

1846
University at Buffalo,
The State University of New York
Wayne Blank

1847
The University of Iowa
Sherree Wilson

1851
Northwestern University
Daniel Linzer

1853
Washington University in St. Louis
Kevin Hays Baines

1855
Michigan State University
Jared R. Leadbetter

1861
Massachusetts Institute of Technology
Marc Kastner

1865
Cornell University
Raymond Deshaies

1868
University of California, Berkeley
Michael E. Brown

THE MEANING OF ACADEMIC DRESS

The costumes of those in the academic procession have a specific symbolism that dates back to at least the 14th century. Academic institutions in the United States adopted a code of academic dress in 1895 that has been revised from time to time. The dress of institutions in other countries varies, and there is not a worldwide code, but the basic elements are present in all academic costumes. Caltech's David Elliot (1917–2007), professor of history, emeritus, wrote the following about academic costumes:

Of particular interest is the cap or mortarboard. In the form of the biretta, it was the peculiar sign of the master. Its use has now spread far beyond that highly select group to schoolgirls and choirboys and even to the nursery school.

The gown, of course, is the basic livery of the scholar, with its clear marks of rank and status—the pointed sleeves of the bachelor, the oblong sleeves of the master, the full sleeves and velvet trimmings of the doctor. The doctors, too, may depart from basic black and break out into many colors—Harvard crimson or Yale blue or the scarlet splash of Oxford.

Color is the very essence of the hood: color in the main body to identify the university; color perhaps in the binding to proclaim the subject of the degree—orange for engineering, gold for science, the baser copper for economics, white for arts and letters, green for medicine, purple for law, scarlet for theology, and so on.

With this color and symbolism, which is medieval though mutated, we stage our brief moment of pageantry, paying homage to that ancient community of scholars in whose shadow we stand, and acknowledging our debt to the university as one of the great institutional constructs of the Middle Ages.

THE ROBERT A. MILLIKAN HOOD

The passing of Robert A. Millikan's academic hood to the new president has become a Caltech inaugural tradition. While he never accepted the title of president, Millikan was the administrative head of modern-day Caltech. In 1921, he left his professorship at the University of Chicago to become director of Caltech's new Norman Bridge Laboratory of Physics. Together with George Ellery Hale and Arthur Amos Noyes, he formed the executive council that molded the Institute into a preeminent research university, serving as chairman of the council from 1921 until 1945.

One of the towering figures of 20th-century physics, Millikan was also Caltech's first Nobel Prize winner. He received the prize for physics in 1923 for isolating the electron and measuring its charge. An impressive experimentalist, Millikan is credited with the verification of Einstein's photoelectric equations and with the numerical determination of Planck's constant. He also initiated serious study of cosmic rays, and in fact gave them their present name.

GAUDEAMUS IGITUR

Traditional college song (c. 1287)

<i>Gaudeamus igitur</i>	So let us rejoice while we're young
<i>Juvenes dum sumus.</i>	Singing out in gleeful tones.
<i>Post iucundam iuventutem</i>	After youth's delightful frolic
<i>Post molestam senectutem</i>	And old age (so melancholic)
<i>Nos habebit humus.</i>	Earth will cover our bones.
<i>Ubi sunt qui ante nos</i>	Where are those who trod this globe
<i>In mundo fuere?</i>	In the years before us?
<i>Transeas ad superos</i>	They in hellish fires below
<i>Abeas ad inferos</i>	Or in Heaven kindly glow
<i>Quis si vis videres.</i>	Swell th' eternal chorus.
<i>Vita nostra brevis est</i>	Life is short and all too soon
<i>Brevi finietur;</i>	We emit our final gasp;
<i>Venit mors velociter;</i>	Death ere long is on our back;
<i>Rapit nos atrociter;</i>	Terrible is his attack;
<i>Nemini parcetur.</i>	None escapes his dread grasp.
<i>Vivat academia!</i>	Long live our academy!
<i>Vivant professores!</i>	Professors whom we cherish!
<i>Vivat membrum quodlibet!</i>	Long live all the graduates!
<i>Vivant membra quaelibet!</i>	And the undergraduates!
<i>Semper sint in flore.</i>	Ever may they flourish.

HAIL CIT

Composed by Manton Barnes (BS '21)

*In Southern California with grace and splendor bound,
Where the lofty mountain peaks look out to lands beyond,
Proudly stands our Alma Mater, glorious to see;
We raise our voices proudly, hailing, hailing thee.
Echoes ringing while we're singing over land and sea,
The halls of fame resound thy name, noble CIT.*