



Distinguished Lectures
in the Life Sciences
Fourteenth Edition

NOBEL LAUREATE

MICHAEL ROSBASH

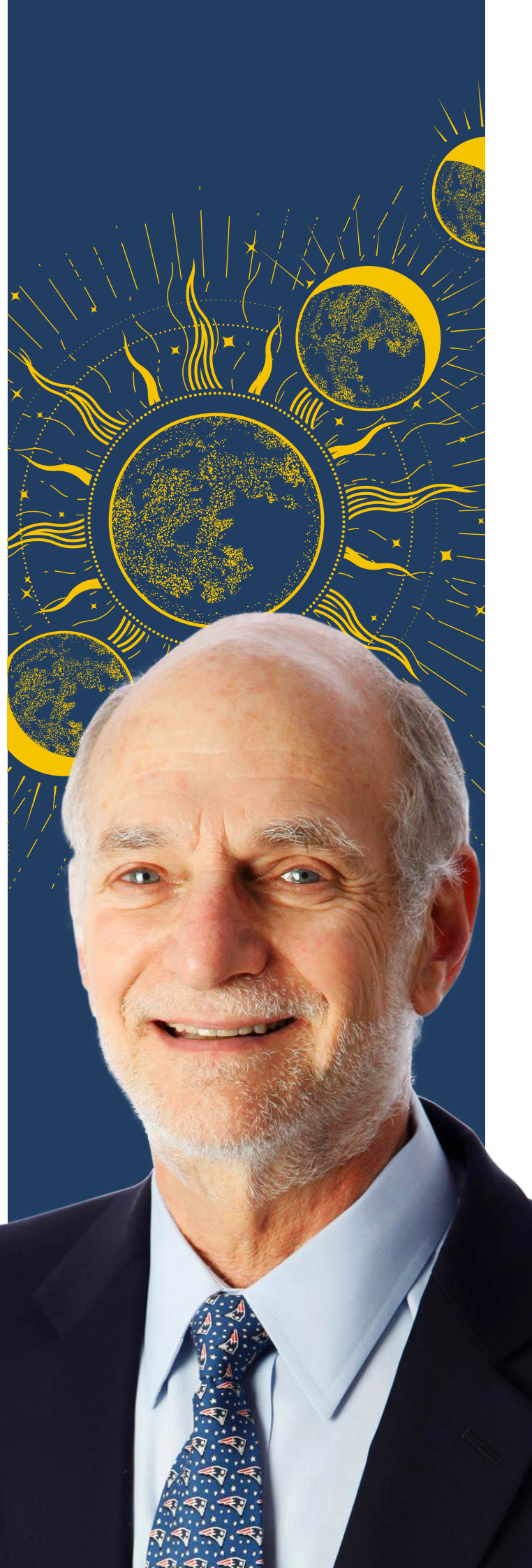
**'THE CIRCADIAN RHYTHM
STORY: PAST, PRESENT
AND FUTURE'**


New Delhi

Register online here:
tnqdistinguishedlectures.org

Admission is free and
open to all who register.

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register





The 2017 Nobel Laureate
Michael Rosbash is the
2025 speaker of the TNQ
Distinguished Lectures in
the Life Sciences.

Michael Rosbash, together with Jeffrey C. Hall and Michael W. Young, received the 2017 Nobel Prize in Physiology or Medicine ‘for their discoveries of molecular mechanisms controlling the circadian rhythm’.

Professor Michael Rosbash’s lecture will be delivered in Mumbai, Bengaluru, and New Delhi in February 2025 and is titled ‘The Circadian Rhythm Story: Past, Present and Future’.

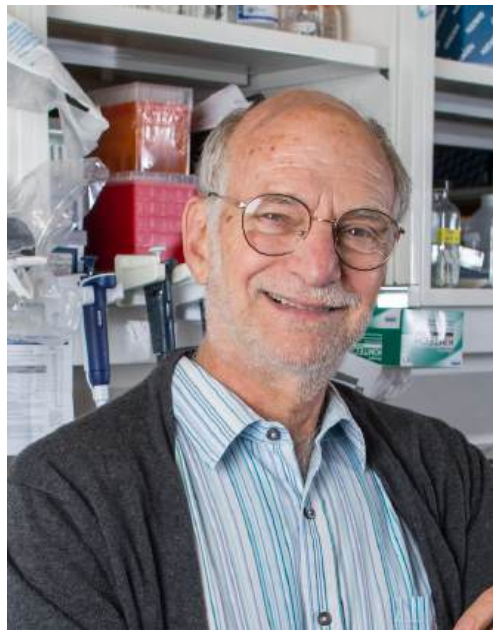
As always, admission to these lectures is free, on a first-come, first-seated basis, and is open to all who register.

ABOUT PROFESSOR MICHAEL ROSBASH

Born in Kansas City, Missouri, in 1944, Michael Rosbash did his schooling in Boston, Massachusetts. He studied at the California Institute of Technology (Caltech) and Biologie Physico-Chimique in Paris and then obtained his doctor's degree at the Massachusetts Institute of Technology in 1970. He spent three years as a post-doc in John Bishop's lab in the Department of Genetics at the University of Edinburgh. In 1974, Rosbash moved to Brandeis University as a member of the faculty where he became Professor of Biology in 1986. He became an investigator of the Howard Hughes Medical Institute in 1989. Today, Michael Rosbash is the Peter Gruber Endowed Chair in Neuroscience and Professor of Biology at Brandeis University.

Rosbash researches circadian rhythms, molecular neuroscience, sleep, genetics and gene expression. He has made fundamental contributions to our understanding of the post-transcriptional regulation of gene expression, especially RNA metabolism in yeast. He is best known however for his work in *Drosophila* (fruit flies) that illuminated our current understanding of the molecular

mechanisms that underlie circadian rhythms, the intrinsic clock that controls daily oscillations of many different processes. The same biological



principles, molecular machines, and molecules that control *Drosophila* circadian clocks also control this ubiquitous process of circadian rhythmicity throughout the animal kingdom. This circadian clock also controls much of cell physiology and metabolism, again in all animals – from humans to *Drosophila*.

Rosbash's current circadian work has three main goals:

1. To understand in mechanistic detail how the *Drosophila* circadian timing occurs
2. To understand how circadian gene expression regulation takes place
3. To understand the neural circuit(s) relevant to circadian timekeeping within the fruit fly brain and the functions of individual circadian neurons

AWARDS & HONOURS

1989	Investigator of the Howard Hughes Medical Institute
1997	Elected Member of the American Academy of Arts and Sciences
2003	Elected Member of the National Academy of Sciences, USA
2007	Elected Fellow of the American Association for the Advancement of Sciences
2009	Peter and Patricia Gruber Foundation Neuroscience Prize (shared with Jeffrey C. Hall and Michael W. Young)
2011	Louisa Gross Horwitz Prize from Colombia University (shared with Hall and Young)
2012	Canada Gairdner International Award (shared with Hall and Young)
2012	Massry Prize (shared with Hall and Young)
2013	Shaw Prize in Life Science and Medicine (shared with Hall and Young)
2013	Wiley Prize in Biomedical Sciences (shared with Hall and Young)
2017	Nobel Prize in Physiology or Medicine (shared with Hall and Young)
2018	Peter C. Farrell Prize in Sleep Medicine (shared with Young)

Other Resources

<https://www.nobelprize.org/prizes/medicine/2017/rosbash/facts/>

<https://www.brandeis.edu/biology/faculty/rosbash-michael.html>

<https://www.hhmi.org/scientists/michael-rosbash>

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LECTURE **SCHEDULE 2025**

New Delhi
Friday,
February 7,
2025

Jawaharlal Nehru Auditorium,
All India Institute of Medical Sciences
(AIIMS) campus

4:30 pm

**Introduction by
Professor Nikhil Tandon**

The TNQ Distinguished Lectures in the Life Sciences

This lectureship series was established by TNQ in 2008 with the aim of bringing internationally renowned scientists face-to-face with the Indian scientific community.

Previous Speakers

- 2008** **David Baltimore**, President Emeritus and Judge Shirley Hufstedler Professor of Biology at Caltech. Baltimore, along with Howard Temin and Renato Dulbecco, won the 1975 Nobel Prize in Physiology or Medicine ‘for their discoveries concerning the interaction between tumour viruses and the genetic material of the cell’.
- 2009** **Elizabeth Blackburn**, Professor, Biochemistry and Biophysics, School of Medicine, UCSF. She was awarded the 2009 Nobel Prize in Physiology or Medicine with Carol Greider and Jack Szostak ‘for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase’.
- 2012** **Shinya Yamanaka**, Director Emeritus & Professor, Center for iPS Cell Research and Application, Kyoto University and Professor of Anatomy, School of Medicine, UCSF. He and John Gurdon were awarded the 2012 Nobel Prize in Physiology or Medicine ‘for the discovery that mature cells can be reprogrammed to become pluripotent’.
- 2014** **Huda Zoghbi**, Professor at Baylor College of Medicine and Director of the Jan and Dan Duncan Neurological Research Institute at Texas Children’s Hospital. She was awarded the 2017 Breakthrough Prize in Life Sciences ‘for discoveries of the genetic causes and biochemical mechanisms of spinocerebellar ataxia and Rett Syndrome’.
- 2015** **Eric Lander**, Core Institute Member & Founding Director of the Broad Institute. He was awarded the inaugural 2013 Breakthrough Prize in Life Sciences ‘for the discovery of general principles for identifying human disease genes, and enabling their application to medicine through the creation and analysis of genetic, physical, and sequence maps of the human genome’.

- 2016** **Karl Deisseroth**, D.H. Chen Professor of Bioengineering and of Psychiatry and Behavioral Sciences at Stanford University. He was awarded the 2016 Breakthrough Prize in Life Sciences ‘for the development and implementation of optogenetics – the programming of neurons to express light-activated ion channels and pumps, so that their electrical activity can be controlled by light’.
- 2017** **Mary-Claire King**, Professor of Genome Sciences and of Medical Genetics and the American Cancer Society Professor, University of Washington. She was awarded the 2018 Shaw Prize in Life Science and Medicine ‘for her mapping the first breast cancer gene’.
- 2018** **David Anderson**, Seymour Benzer Professor of Biology and Director, Tianqiao and Chrissy Chen Institute for Neuroscience at Caltech. He has been at the forefront of research in the neurobiological foundations of emotion.
- 2019** **Helen Hobbs**, Director, McDermott Center for Human Growth and Development and Dallas Heart Ball Chair in Cardiology Research at the University of Texas Southwestern Medical Center. She was awarded the 2016 Breakthrough Prize in Life Sciences ‘for the discovery of human genetic variants that alter the levels and distribution of cholesterol and other lipids, inspiring new approaches to the prevention of cardiovascular and liver disease’.
- 2020** **Venki Ramakrishnan**, Research Leader of the MRC Laboratory of Molecular Biology in Cambridge, UK. He was the recipient of the 2009 Nobel Prize in Chemistry along with Thomas Steitz and Ada Yonath ‘for studies of the structure and function of the ribosome’.
- 2023** **Ron Vale**, Emeritus Professor of Cellular and Molecular Pharmacology at UCSF. Along with Ian Gibbon he won the 2017 Shaw Prize in Life Science and Medicine ‘for their discovery of microtubule-associated motor proteins, cellular engines that drive nerve cell growth and chromosome segregation’.
- 2024**
January **David Julius**, Professor and Chair of the Department of Physiology, UCSF. Julius along with Ardem Patapoutian won the 2021 Nobel Prize in Physiology or Medicine ‘for their discoveries of receptors for temperature and touch’.
- 2024**
February **John Jumper**, Director, Google DeepMind. Along with Demis Hassabis he won the 2023 Breakthrough Prize in Life Science ‘for developing a deep learning AI method that rapidly and accurately predicts the three-dimensional structure of proteins from their amino acid sequence’. In 2024, again with Demis Hassabis, John Jumper was awarded the 2024 Nobel Prize in Chemistry ‘for protein structure prediction’. They shared the prize with David Baker who received it ‘for computational protein design’.



TNQ Foundation is a not-for-profit foundation set up to provide support for 1) the life sciences 2) mathematics 3) the arts 4) issues of social inequality, and 5) animal welfare.

The Foundation's main outreach programme is an annual series of lectures in both the life sciences and mathematics called the 'TNQ Distinguished Lectures in the Life Sciences' and the 'TNQ Distinguished Lectures in Mathematics', respectively. It also manages the TNQ Inspiring Science Awards for the life sciences and TNQ Numbers & Shapes for mathematics.