THE KAVLI PRIZE

Celebrating 10 years of pioneers in science

The Kavli Prize honors scientists for their outstanding research in **ASTROPHYSICS, NANOSCIENCE** and **NEUROSCIENCE.**

Here is a look at the first 10 years of Kavli Prize Laureates and their extraordinary discoveries, pioneering science that has illuminated our understanding of existence at its **BIGGEST, SMALLEST** and most **COMPLEX** scales.

READ MORE

Introduction
by **BRIAN GREENE**
Author, *The Elegant Universe*

Announcement of the 2018 Kavli Prize Laureates
by **OLE M. SEJERSTED**
President, Norwegian Academy of Science and Letters

2018 Awards
31 May, 8:30–10:00am ET

Announcement of the 2018 Kavli Prize Laureates
Live stream from New York and Oslo
Details and live stream on **www.kavliprize.org**

Since 2008, the Kavli Prize has been honoring scientists for their seminal research in **astrophysics, nanoscience and neuroscience.** Now watch as the 2018 Kavli Prize Laureates are announced live from Oslo, with a special program from New York.

The Kavli Prize awards $1 million in each of the three fields.

Laureates are chosen by international committees whose members are recommended by six of the world's most renowned science societies and academies.

The Kavli Prize is a partnership between **The Norwegian Academy of Science and Letters**, **The Kavli Foundation** (United States), and **The Norwegian Ministry of Education and Research**.

THE NORWEGIAN ACADEMY OF SCIENCE AND LETTERS

THE KAVLI FOUNDATION

Norwegian Ministry of Education and Research

LEVEL OF DETAIL

What determines how we think, feel and act?

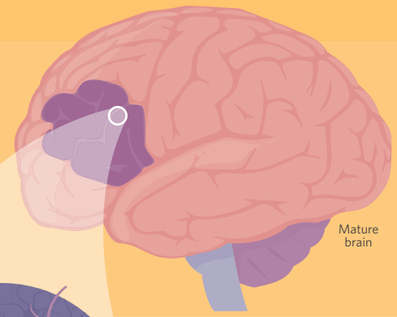
What sparks a memory, enables us to compose music or be sociable? The Kavli Prize for Neuroscience celebrates advances in understanding the exquisite workings of the nervous system.

WHOLE ORGAN

2008
A SENSE OF PLACE AND PURPOSE
Identification of the molecular cues used by nerve cells to organize themselves within embryonic tissue to form complex 3-D brain and spinal cord structures.

NETWORKS

2014
PRECISION MAPPING
The discovery of specialized brain networks and cells that perform complex mental tasks such as attention, spatial awareness and planning.



CIRCUITS

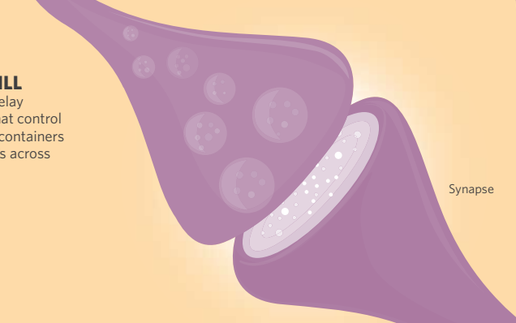
2012
COORDINATION IS KEY
For determining how brain circuitry can control behaviors such as movement, eating, and habits.

NEURONS

2016
USE IT OR LOSE IT
Elucidation of the mechanisms that remodel nerve cell circuits throughout adulthood, to allow them to learn or recover from injury.

SYNAPSES

2010
RELEASE, REUSE, REFILL
The discovery that the rapid relay of signals relies on proteins that control the movement of bubble-like containers (vesicles) that carry chemicals across nerve endings.



KAVLI PRIZE WINNERS
NEUROSCIENCE

2016


Eve Marder


Michael M. Merzenich


Carla J. Shatz

2014


Brenda Milner


John O'Keefe


Marcus E. Raichle

2012


Cornelia Isabella Bargmann


Winfried Denk


Ann Martin Graybiel

2010


Richard H. Scheller


Thomas C. Südhof


James E. Rothman

2008

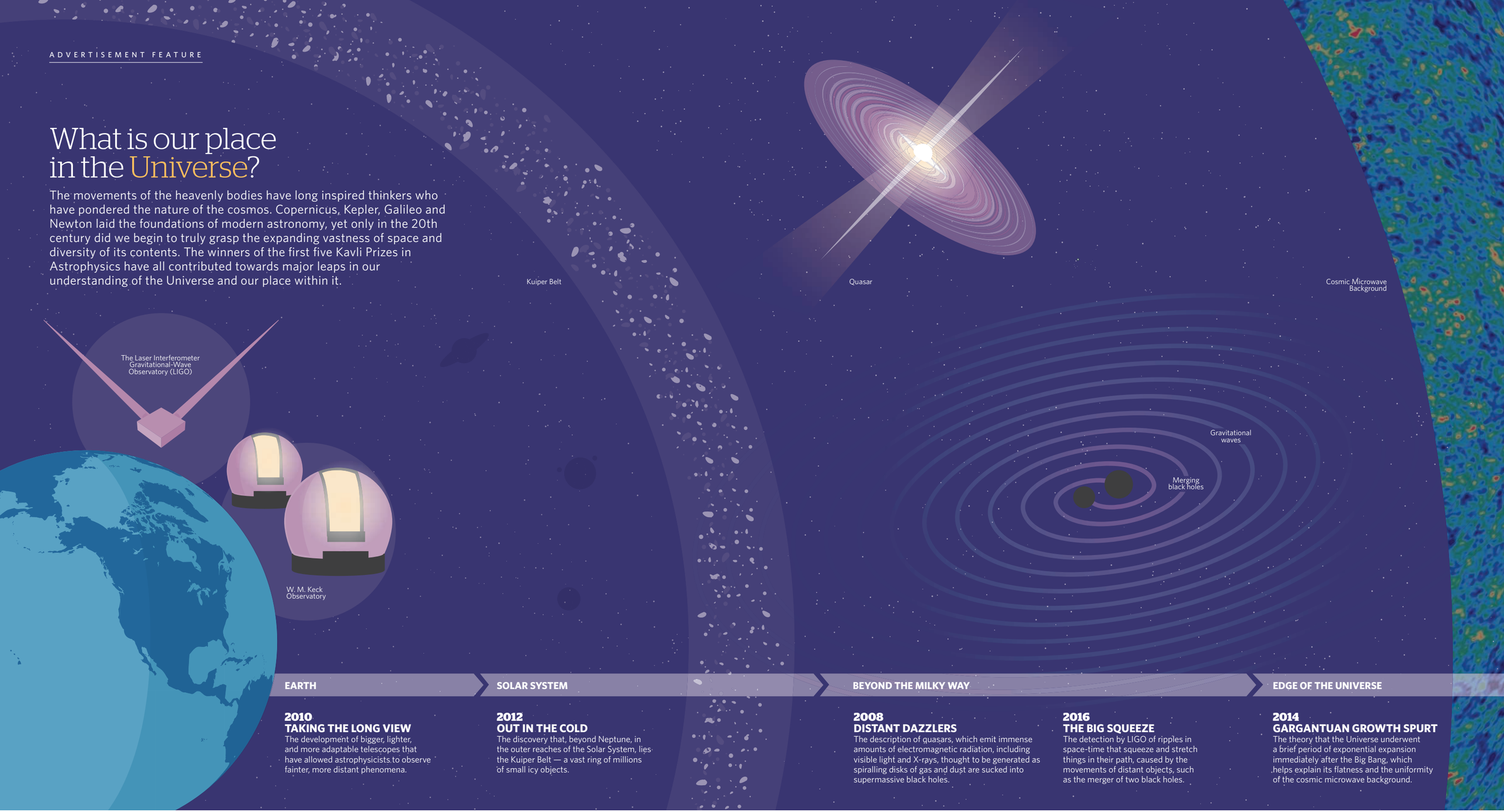

Pasko Rakic


Thomas Jessell


Sten Grillner

What is our place in the Universe?

The movements of the heavenly bodies have long inspired thinkers who have pondered the nature of the cosmos. Copernicus, Kepler, Galileo and Newton laid the foundations of modern astronomy, yet only in the 20th century did we begin to truly grasp the expanding vastness of space and diversity of its contents. The winners of the first five Kavli Prizes in Astrophysics have all contributed towards major leaps in our understanding of the Universe and our place within it.



EARTH

2010
TAKING THE LONG VIEW
The development of bigger, lighter, and more adaptable telescopes that have allowed astrophysicists to observe fainter, more distant phenomena.

SOLAR SYSTEM

2012
OUT IN THE COLD
The discovery that, beyond Neptune, in the outer reaches of the Solar System, lies the Kuiper Belt — a vast ring of millions of small icy objects.

BEYOND THE MILKY WAY

2008
DISTANT DAZZLERS
The description of quasars, which emit immense amounts of electromagnetic radiation, including visible light and X-rays, thought to be generated as spiralling disks of gas and dust are sucked into supermassive black holes.

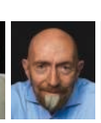
2016
THE BIG SQUEEZE
The detection by LIGO of ripples in space-time that squeeze and stretch things in their path, caused by the movements of distant objects, such as the merger of two black holes.

EDGE OF THE UNIVERSE

2014
GARGANTUAN GROWTH SPURT
The theory that the Universe underwent a brief period of exponential expansion immediately after the Big Bang, which helps explain its flatness and the uniformity of the cosmic microwave background.

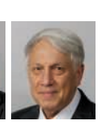
KAVLI PRIZE WINNERS
ASTROPHYSICS

2016

Ronald W.P. Drever

Kip S. Thorne

Rainer Weiss

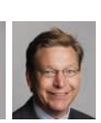
2014

Alan H. Guth

Andrei D. Linde

Alexei A. Starobinsky

2012

David C. Jewitt

Jane X. Luu

Michael Edwards Brown

2010

Jerry E. Nelson

Raymond N. Wilson

James Roger Prior Angel

2008

Maarten Schmidt

Donald Lynden-Bell

KAVLI PRIZE WINNERS

NANOSCIENCE

2016


Gerd Binnig


Christoph Gerber


Calvin Quate

2014


Thomas W. Ebbesen


Stefan W. Hell


Sir John B. Pendry

2012


Mildred S. Dresselhaus

2010


Donald M. Eigler


Nadrian C. Seeman

2008


Louis E. Brus


Sumio Iijima

10 YEARS OF PRIZES FOR THE FUTURE • THE KAVLI PRIZE 2008-2018 •

How will the 2018 prizes deepen our understanding of our Universe? **Find out on 31 May at www.kavliprize.org**

What happens at the smallest scales?

Pioneering researchers have expanded our understanding of the unique properties of materials at atomic and molecular scales, enabling a range of applications.

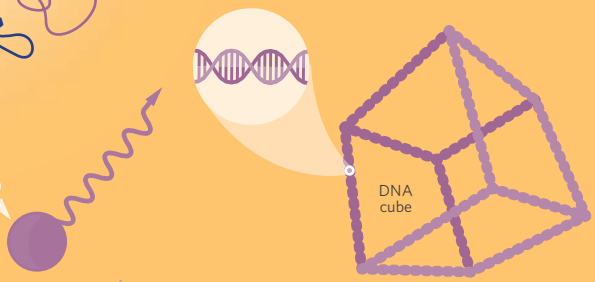
100 – 1,000 nanometers (nm)

Abbe Diffraction Limit (~200 nm)

*The resolution of optical microscopes is limited to approximately half the wavelength of visible light.

2014
BREAKING THE LIMIT
The invention of techniques that exploit quantum phenomena to image nano-sized objects and control light at unprecedented resolution.

10 – 100 nm

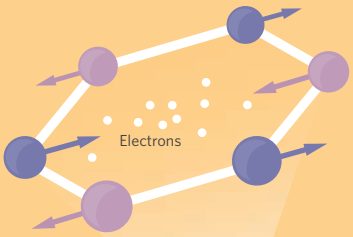


2008
CHANGING PERSPECTIVES
The discovery that nanostructures have size-dependent properties, which can be exploited in applications ranging from electronic displays to targeted drug delivery.

2010
FINE CONTROL
For the ability to manipulate atoms and molecules into structures, revealing details of fundamental physical properties of matter.

1 – 10 nm

2012
ENERGY FLOW
The discovery of the type of interaction between electrons and atomic vibrations in nanostructures, such as graphene, which can be engineered to harvest thermal energy more effectively.



2016
MEASURING ATOMS AND MOLECULES
Invention of atomic force microscopy, which utilizes the small force between the atoms and molecules in a sample and a very fine tip to image with atomic resolution.