

JACOB HESKEL

GABBAY AWARD

IN BIOTECHNOLOGY

AND MEDICINE

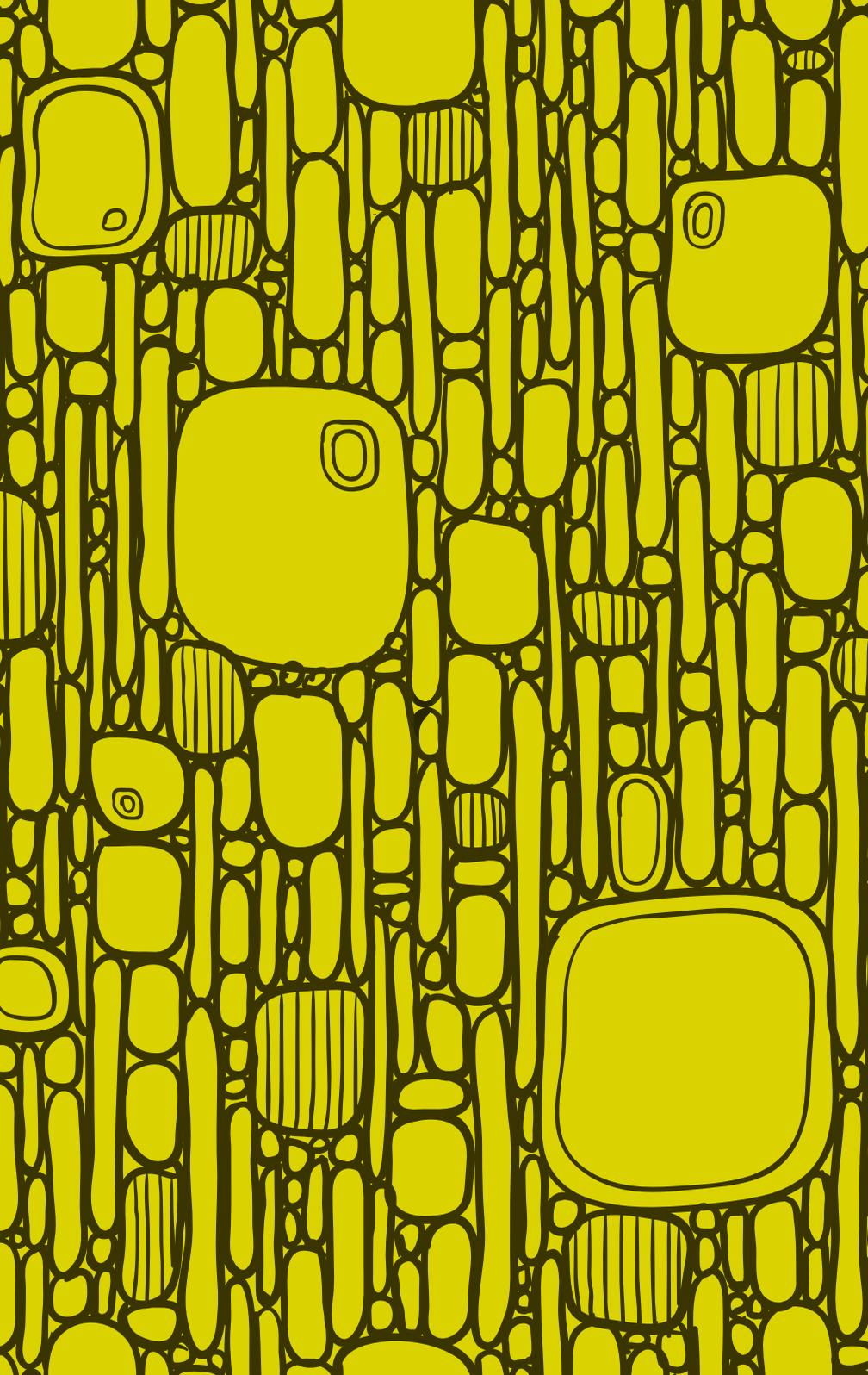
JACOB HESKEL
GABBAY AWARD
IN BIOTECHNOLOGY
AND MEDICINE

Brandeis University

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PRESENTATION CEREMONY
MONDAY, OCTOBER 27, 2014
WALTHAM, MASS.
BRANDEIS UNIVERSITY

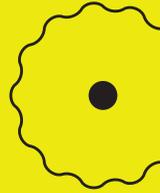


Early in 1998, the trustees of the Jacob and Louise Gabbay Foundation decided to establish a major new award in basic and applied biomedical sciences. The foundation felt that existing scientific awards tended to honor people who were already well-recognized or to focus on work that had its primary impact in traditional basic research fields. Yet the history of science suggests that most scientific revolutions are sparked by advances in practical areas such as instrumentation and techniques or through entrepreneurial endeavors. The foundation therefore created the Jacob Heskel Gabbay Award in Biotechnology and Medicine to recognize, as early as possible in their careers, scientists in academia, medicine or industry whose work had both outstanding scientific content and significant practical consequences in the biomedical sciences. Because of their long association with Brandeis University, the trustees of the foundation asked the Rosenstiel Basic Medical Sciences Research Center at Brandeis to administer the award.

The award, given annually, consists of a \$15,000 cash prize (to be shared in the case of multiple winners) and a medallion. The honorees travel to Brandeis University each fall to present lectures on their work and attend a dinner at which the formal commendation takes place. This year, a committee of distinguished scientists selected Feng Zhang of the McGovern Institute for Brain Research at the Massachusetts Institute of Technology; Jennifer Doudna of the Department of Biochemistry, Biophysics and Structural Biology at the University of California, Berkeley; and Emmanuelle Charpentier of the Department of Molecular Biology at Umeå University and of the Department of Regulation in Infection Biology at the Helmholtz Centre for Infection Research for their work on the CRISPR/cas system.

The Jacob and Louise Gabbay Foundation was founded by its namesakes in 1969. The late Jacob Gabbay, a physician, moved his family from Baghdad to the United States in 1952, maintaining a medical practice in New York City until 1982. The foundation, originally intended to help students of Iraqi descent pursue higher education in Israel, has subsequently funded computer education for Israeli high schoolers and various medical projects. Louise Gabbay established the Gabbay Award, the foundation's first American endeavor, in honor of her husband, who passed away in 1995.

PRESENTATION CEREMONY



PRESIDING

Dagmar Ringe

Professor of Biochemistry, Chemistry and
Rosenstiel Basic Medical Sciences Research Center

WELCOME

Dr. Kenneth Gabbay

PRESENTATION OF MEDALLIONS AND AWARDS

Dagmar Ringe

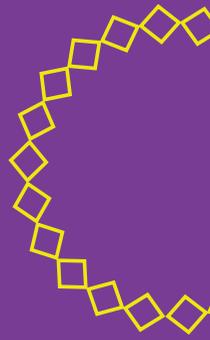
RESPONSE

Feng Zhang

Jennifer Doudna

Emmanuelle Charpentier

2014 WINNER



Feng Zhang

Feng Zhang is a core member of the Broad Institute of MIT and Harvard and the W. M. Keck Career Development Professor of Biomedical Engineering at MIT. As a graduate student at Stanford University, Zhang worked with adviser Karl Deisseroth to invent a set of technologies for dissecting the functional organization of brain circuits.

His lab works on developing and applying disruptive technologies, including optogenetics and genome engineering (TALEs and CRISPR), to understand nervous system function and disease. Zhang's long-term goal is to develop novel therapeutic strategies for disease treatment.

He obtained a bachelor's degree from Harvard University and a PhD in chemistry and bioengineering from Stanford University. Before joining the MIT faculty, he was a junior fellow of the Harvard University Society of Fellows. He is a recipient of the National Science Foundation's Alan T. Waterman Award, the Perl/UNC Prize in Neuroscience and the Director's Pioneer award from the National Institutes of Health. He has also received awards from the Searle Scholars Program and the McKnight, W. M. Keck and Damon Runyon foundations.

2014 WINNER

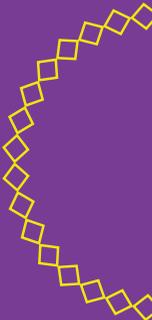
Jennifer Doudna

Jennifer Doudna is a professor of chemistry, biochemistry and molecular biology at the University of California, Berkeley. Her research seeks to understand how non-coding RNA molecules control the expression of genetic information.

She holds a PhD in biological chemistry from Harvard University. After serving as a member of the Yale University faculty for eight years, during which time she was promoted to Henry Ford II Professor of Molecular Biophysics and Biochemistry, she joined the UC Berkeley faculty in 2002.

She has been a Howard Hughes Medical Institute investigator since 1997 and a member of the National Academy of Sciences since 2002. She was named to the American Academy of Arts & Sciences in 2003 and elected to the Institute of Medicine in 2010. She is a recipient of the Lurie Prize from the Foundation for the Foundation for the National Institutes of Health and a co-recipient of the Dr. Paul Janssen Award for Biomedical Science. Doudna has served as a consultant to pharmaceutical companies including Gilead and Merck, and she is on the scientific advisory board of several biotechnology companies, including EFFECTOR Therapeutics and Caribou Biosciences.

2013 WINNER



Emmanuelle Charpentier

Emmanuelle Charpentier studied biochemistry and microbiology at the University Pierre and Marie Curie, Paris, and received a PhD in microbiology for research she performed at the Institut Pasteur. She then moved to the United States, where she held research associate positions at The Rockefeller University, New York University's Langone Medical Center and the Skirball Institute of Biomolecular Medicine (all in New York) and at St. Jude Children's Research Hospital in Memphis. Charpentier returned to Europe to establish her own research group at the Max F. Perutz Laboratories of the University of Vienna in Austria, where she habilitated in the field of microbiology. She was then recruited as an associate professor at the Laboratory for Molecular Infection Medicine Sweden (MIMS, EMBL Partnership for Molecular Medicine) at Umeå University, where she habilitated in the field of medical microbiology. In 2012, Charpentier was appointed professor at Hannover Medical School and head of the Regulation in Infection Biology department at the Helmholtz Centre for Infection Research in Germany. Charpentier is recognized as a world-leading expert in regulatory mechanisms underlying processes of infection and immunity in bacterial pathogens. Her work has led to a number of seminal discoveries and insights into pathways governing drug resistance and virulence of bacterial pathogens. With her recent groundbreaking findings in the field of

RNA-mediated regulation based on the CRISPR-Cas9 system, Charpentier has laid the foundation for the development of a novel, highly versatile and specific genome editing tool that is deemed capable of revolutionizing life sciences research and could open up whole new opportunities in biomedical gene therapies. The new field, recently referred to as the "CRISPR Craze" (Science (2013) 341:833-836), is developing at dazzling speed with new, exciting aspects emerging almost weekly. Charpentier has been awarded prestigious honors, including an Alexander von Humboldt Professorship, an EMBO Membership, the Erik Fernström Prize, the Göran Gustafsson Prize, Grand Prix Jean-Pierre LeCocq and the Dr. Paul Janssen Award for Biomedical Science.

PREVIOUS WINNERS OF THE JACOB HESKEL GABBAY AWARD IN BIOTECHNOLOGY AND MEDICINE



2000

for his leadership in genome sequencing

J. Craig Venter

Founder and Chief Scientific Officer
Celera Genomics Corporation
Rockville, Md.

2001

*for his pioneering achievements in miniaturization
of fundamental biochemical experiments*

J. Michael Ramsey

Chemical and Analytical Sciences Division
Oak Ridge National Laboratory
Oak Ridge, Tenn.

2002

*Dr. Rastetter for his pioneering contributions in the
development of antibody-based drugs; Dr. Slamon
for his role in the development of the HER-2
immunotherapy against certain types of breast
cancer, a pioneering contribution to medicine; and
Dr. Winter for his pioneering role in the development
of humanized monoclonal antibodies, and for the
founding of the company Cambridge Antibody
Technology (CAT) in the United Kingdom*

William H. Rastetter, PhD

Chairman, and Chief Executive Officer
IDEC Pharmaceuticals Corp.
San Diego, Calif.

Dennis J. Slamon, MD, PhD

Executive. Vice Chair for Research and
Professor of Medicine
UCLA School of Medicine
Los Angeles, Calif.

Gregory P. Winter, CBE, FRS

Joint Head of Division of Protein & Nucleic
Acid Chemistry
MRC Laboratory of Molecular Biology
Cambridge, England

2003

*for their development of yeast two-hybrid and yeast mat-
ing interaction traps*

Roger Brent

President and Research Director
The Molecular Sciences Institute
Berkeley, Calif.

Stanley Fields

Howard Hughes Medical Institute
Department of Genome Sciences and Medicine
University of Washington
Seattle, Wash.

2004

for his many contributions to the biotechnology industry

George M. Whitesides

Woodford L. and Ann A. Flowers
University Professor
Harvard University
Cambridge, Mass.

2005

for their roles in the development and use of molecular beacons as a diagnostic tool in vivo, and in the detection of RNA in living cells

Fred R. Kramer

Professor of Microbiology and Molecular Genetics
New Jersey Medical School; and Member,
Public Health Research Institute
Newark, N.J.

Sanjay Tyagi

Professor, Department of Medicine,
New Jersey Medical School; and Member,
Public Health Research Institute
Newark, N.J.

2006

for their role in the development of contrast agents used in cardiodiagnostic procedures

Dr. Alan Davison

Professor Emeritus of Chemistry
Massachusetts Institute of Technology
Cambridge, Mass.

Dr. Alun Gareth Jones

Professor of Radiology
Harvard Medical School &
Brigham and Women's Hospital
Boston, Mass.

2007

for pioneering the technology of gene targeting in mouse embryo-derived stem (ES) cells that allows scientists to create mice with mutations in any desired gene by choosing which gene to mutate and how to mutate it

Dr. Mario Capecchi

Howard Hughes Medical Institute
Professor of Human Genetics
University of Utah, School of Medicine
Salt Lake City, Utah

2008

for his seminal basic-science discoveries, including regulated protein turnover in bacteria and mitochondria and, most importantly, the development of proteasome inhibitors as a treatment for cancer

Dr. Alfred Goldberg

Professor of Cell Biology
Harvard Medical School
Boston, Mass.

2009

for their significant contributions in the field of assisted human reproduction

Dr. Alan H. Handyside

Visiting Professor
University of Leeds, and
Director of the London Bridge Fertility,
Gynaecology and Genetics Centre
London, England

Dr. Ann A. Kiessling

Associate Professor
Harvard Medical School, and
Director of the Bedford Stem Cell
Research Foundation
Bedford, Mass.

Dr. Gianpiero D. Palermo

Professor
New York Presbyterian Hospital,
Weill Medical College of Cornell University, and
Director of Assisted Fertilization and
Andrology at the Center for
Reproductive Medicine and Infertility
New York, N.Y.

2010

*for her work on aromatase inhibitors for
breast cancer*

Dr. Angela Hartley Brodie

Professor of Pharmacology
University of Maryland
Marlene and Stewart
Greenebaum Cancer Center
Baltimore, Md.

2011

*for his work on the immune responses by T cells,
a type of lymphocyte*

James P. Allison

Howard Hughes Medical Institute Investigator
and Chair of the Immunology Program
Memorial Sloan-Kettering Cancer Center
New York, N.Y.

2012

*for their work in identifying the negative cellular
effects of bisphenol in plastics, and for alerting the
commercial sector in order to prevent its further use*

Patricia Hunt

Professor, School of Molecular Biosciences
Washington State University
Pullman Wash.

Ana M. Soto

Professor, Department of Anatomy and
Cellular Biology
Tufts University School of Medicine
Boston, Mass.

Carlos Sonnenschein

Professor, Department of Anatomy
and Cellular Biology
Tufts University School of Medicine
Boston, Mass.

2013

*for their contributions to the discovery and applications
of a method called optogenetics.*

Edward Boyden

Associate Professor of Biological Engineering and
Brain and Cognitive Sciences
MIT Media Lab and McGovern Institute

Karl Deisseroth

D.H. Chen Professor of Bioengineering and of Psychia-
try and Behavioral Sciences
Stanford University

Gero Miesenböck

Waynflete Professor of Physiology and Director of the
Centre for Neural Circuits and Behaviour
University of Oxford