

JACOB HESKEL GABBAY AWARD IN BIOTECHNOLOGY AND MEDICINE

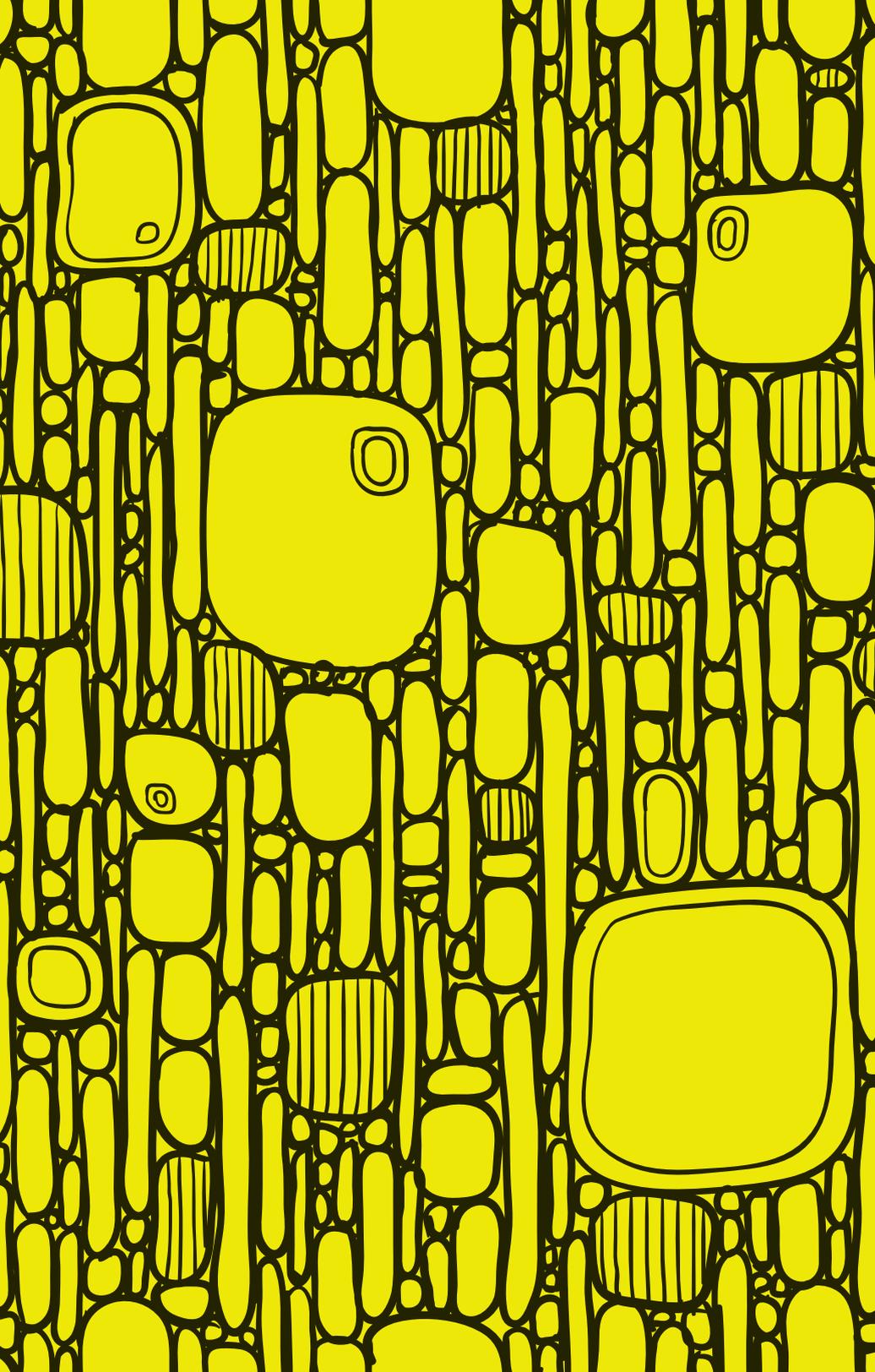
JACOB HESKEL
GABBAY AWARD
IN BIOTECHNOLOGY
AND MEDICINE

Brandeis University

OFFICE OF COMMUNICATIONS ©2012 BRANDEIS UNIVERSITY C209



PRESENTATION CEREMONY
OCTOBER 22, 2012
WALTHAM, MASS.
BRANDEIS UNIVERSITY

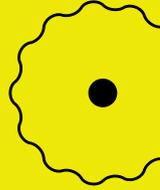


Early in 1998, the trustees of the Jacob and Louise Gabbay Foundation decided to establish a major new award in basic and applied biomedical sciences. The foundation felt that existing scientific awards tended to honor people who were already well-recognized or to focus on work that had its primary impact 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 Heskell 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, which is given annually, consists of a \$15,000 cash prize (to be shared in the event 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 Patricia Hunt of Washington State University, Ana M. Soto of Tufts University School of Medicine and Carlos Sonnenschein of Tufts University School of Medicine 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.

The Jacob and Louise Gabbay Foundation was founded by the Gabbays 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 and Chemistry
Rosenstiel Basic Medical Sciences Research Center
Brandeis University

WELCOME

Kenneth H. Gabbay

The Jacob and Louise Gabbay Foundation

PRESENTATION OF MEDALLIONS AND AWARDS

Dagmar Ringe

RESPONSE

Patricia Hunt

Professor, School of Molecular Biosciences
Washington State University

Ana M. Soto

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

Carlos Sonnenschein

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



2012 WINNER

Patricia Hunt

Patricia Hunt is the Meyer Distinguished Professor in Life and Environmental Science at Washington State University's School of Molecular Biosciences. Her research focuses on human chromosome abnormalities, with the aim of uncovering the basic mechanisms responsible for chromosome errors. Chromosome abnormalities are the most common cause of pregnancy loss and birth defects. More generally, Hunt is interested in understanding why the incidence of chromosomally abnormal embryos is so high in humans, and her work on human eggs has provided valuable new information about the effect of maternal age on the genetic quality of human eggs. More recently, her studies have focused on the effects of exposure to environmental toxins. Her research has

been featured in print and electronic media, including The Washington Post, the Los Angeles Times, USA Today, NPR and CBS. In 2007, she was named one of the top 50 researchers of the year by Scientific American. Hunt's research has been continuously funded by the National Institutes of Health (NIH) for more than 20 years, and she is currently supported by grants from the National Institute of Environmental Health Sciences. She participates in professional activities at the local, national and international level, including serving on editorial boards of several journals, NIH review panels and strategic planning groups; organizing and chairing international conferences; and testifying before state legislative panels.

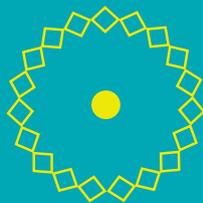
2012 WINNER

Ana M. Soto

Ana M. Soto is a professor in the Department of Anatomy and Cellular Biology at Tufts University School of Medicine in Boston and a professor of cancer development at the University of Ulster in the United Kingdom. She is also a fellow of the Collegium Ramazzini. Soto's research interests have centered on four main topics: the control of cell proliferation by sex steroids; the fetal origins of adult disease, particularly the role of endocrine disruptors on carcinogenesis and reproductive and behavioral disorders; the role of stroma/epithelial interactions on organogenesis and carcinogenesis; and the role of biomechanics on epithelial organization. Soto is currently using a systems biology approach to investigate and better understand morphogenesis. In collaboration with Professor Carlos Sonnenschein, she co-authored "The Society of Cells" (Taylor & Francis, 1999), in which they theorize that the default state of cells in all organisms is proliferation and propose the tissue

organization field theory of carcinogenesis — a view of cancer as development gone awry. They also have cowritten various invited reviews in journals such as *Seminars in Cancer Biology*, *Nature Reviews Endocrinology*, *BioEssays*, *Endocrine Reviews*, *Cancer Research*, and *Progress in Biophysics and Molecular Biology*. Soto also works on epistemological issues arising from the study of complex biological phenomena and on theoretical biology. In collaboration with Giuseppe Longo (École Normale Supérieure, Paris), Paul-Antoine Miquel (Université de Provence, France) and Sonnenschein, she is working on a theory of organisms. She is frequently invited to speak at national and international meetings, and she testified before the U.S. Congress and the French National Assembly regarding endocrine disruption.

2012 WINNER



Carlos Sonnenschein

Carlos Sonnenschein is a professor in the Department of Anatomy and Cellular Biology at Tufts University School of Medicine in Boston. For more than three decades, Sonnenschein's research interests have centered on the control of cell proliferation by estrogens and androgens; the impact of endocrine disruptors on organogenesis and the reproductive function; and carcinogenesis during adult life, specifically on the role of stroma/epithelial interactions on rat and human mammary carcinogenesis.

In collaboration with Professor Ana M. Soto, he co-authored "The Society of Cells" (Taylor & Francis, 1999), in which he and Soto critically evaluate the status of research in the fields of control of cell proliferation and carcinogenesis. The major contributions discussed in the book are that the default state of all cells in both unicellular and multicellular organisms is proliferation, and that the so-called sporadic cancers (95 percent of all clinical cases) represent diseases specifically anchored at the tissue level of biological organization. These postulates are at the core of their theory of carcinogenesis and metastases.

Also in collaboration with Soto, Sonnenschein has written a number of invited reviews in journals such as *Seminars in Cancer Biology*, *Nature Reviews Endocrinology*, *BioEssays*, *Endocrine Reviews*, *Cancer Research*, and *Progress in Biophysics and*

Molecular Biology. He is frequently invited to speak at national and international meetings.

Toward the end of the 1980s, Sonnenschein and Soto developed two in vitro bioassays capable of reliably identifying xenoestrogens and androgens agonists and antagonists (E-Screen and A-Screen, respectively) that are being used worldwide to detect the presence of natural and man-made estrogenic and anti-androgenic compounds. Sonnenschein was a member of the SACATM, a National Institute of Environmental Health Sciences advisory panel that deals with the approval of bioassays in the field of environmental toxicology. He has also consulted for the European Commission in the fields of contamination of foods and water resources by environmental endocrine disruptors, and for the EPA on in vitro bioassays for cell toxicity.

Sonnenschein was invited to deliver lectures at the annual E-Hormone Symposium in New Orleans and at the Biophysical Aspects of Complexity in Health and Disease symposium in Milan (2010), Lugano, Switzerland (2012), and Almora, India (2012). In recent years, he also delivered seminars at numerous universities, including the Université de Paris VI, École Normale Supérieure and the Harvard School of Public Health.

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 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 role in the develop-
ment of humanized monoclonal antibodies and for
the founding of the company Cambridge Antibody
Technology in the United Kingdom:*

William H. Rastetter

Chairman and Chief Executive Officer
IDEC Pharmaceuticals Corp.
San Diego

Dennis J. Slamon

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

Gregory P. Winter

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

2003

*For their development of yeast two-hybrid and
yeast mating 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

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 of the
Public Health Research Institute
Newark, N.J.

Sanjay Tyagi

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

2006

For their role in the development of contrast agents used in cardiodiagnostic procedures:

Alan Davison

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

Alun Gareth Jones

Professor of Radiology
Harvard Medical School and
Brigham and Women's Hospital
Boston

2007

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

Mario Capecchi

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

2008

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

Alfred Goldberg

Professor of Cell Biology
Harvard Medical School
Cambridge, Mass.

2009

For their significant contributions in the field of assisted human reproduction:

Alan H. Handyside

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

Ann A. Kiessling

Associate Professor
Harvard Medical School and Director of
the Bedford Research Foundation
Boston

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

2010

*For her work on aromatase inhibitors for
breast cancer:*

Angela Hartley Brodie

Professor of Pharmacology

University of Maryland

Marlene and Stewart Greenebaum Cancer Center
Baltimore

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

