2015 Annual Report

THE WISE USE OF EMERGING TECHNOLOGIES



The Hastings Center is an independent, nonpartisan, and nonprofit bioethics research institute founded in 1969. Hastings' mission is to address fundamental ethical issues in the areas of health, health care, life sciences research, and the environment as they affect individuals, communities, and societies.

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2015 HASTINGS CENTER ANNUAL REPORT

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FROM THE PRESIDENT



Mildred Z. Solomon President and CEO

Shaping the future ~ wisely

Dear Friends and Colleagues,

We live in an age of transformative scientific powers, capable of changing the very nature of the human species and radically remaking the planet itself. These new powers hold great promise for enhancing health and well-being. However, no technology is neutral. As Stephen Hawking recently put it, "Our future is a race between the growing power of technology and the wisdom with which to use it."

The Hastings Center's goal is to help forge that wisdom. We have been doing so consistently ever since our inception in 1969. In 2015, we won many new grants, which are enabling us to wrestle with a wide array of choices we humans face today—choices related to new genetic technologies, human reproduction, artificial intelligence, brain science, big data.

No matter the technology, there is a common set of questions we always ask. Which of our many choices will most promote human flourishing? What is the best way to demonstrate respect for one another? What is fair and how do we achieve justice? Can we balance the human drive to master nature with the wisdom of living in harmony with it? The answers to these questions play out in innumerable ways across different technologies, but they are the core questions that drive our inquiry and allow us to work across many contexts.

You'll see that financially 2015 was an especially strong year. In addition to our new grants, we received generous support from very special people who see the value of embracing (and the terrible cost of ignoring) a future that is quickly changing.

After you read about our work on these pages, please visit our new website at www.thehastingscenter.org. Our site has been redesigned to support our commitment to going beyond scholarship to engage the public. You will find a list of upcoming events, reports of our current and past projects, summaries of our scholars' testimony before public commissions, and links to the talks we give at conferences around the world.

I hope you will subscribe to our journals, the *Hastings Center Report* and *IRB: Ethics & Human Research*, and read the *Hastings Bioethics Forum Blog*. Visit our YouTube channel. Check out Hastings on Twitter and Facebook. These are some of the ways you can engage with us, so that through scholarship, dialogue, and actions, we can collectively shape the future ~ wisely.

Yours Sincerely,

Mildred ZSolomon_

Mildred Solomon

confluence of developments in 2015 led us to focus much of our research and project proposals on the wise use of emerging technologies. Gene editing with Crispr-Cas9 was causing a revolution—a term that geneticists themselves were using—in genetic research. In addition, new, noninvasive prenatal tests would soon enable women to get far more information about their unborn children, far earlier than ever before. Artificial intelligence was advancing, with applications ranging from self-driving cars to computer algorithms. With each of these technologies came the potential for good, but also the risk of harms and the weight of big ethical questions. In other words, guidance was needed on how to use these technologies responsibly—the very sort of guidance that The Hastings Center has been providing for nearly 50 years.

Our capacity to carry out this important work was greatly expanded in 2015 by **The Boger Initiative for the Wise Use of Emerging Technologies**, a generous, \$1 million gift from Joshua Boger, a former Hastings Center board member. This funding supports an ongoing program to engage visionary scientists, humanists, artists, and bioethicists in the exploration of how best to maximize benefits, minimize potential harms, and ensure fair access to emerging technologies from fields such as genomics, neuroscience, synthetic biology, and informatics.

While this annual report highlights our work on emerging technologies, our research and public engagement span five program areas: Health and Health Care; Children and Families; Aging, Chronic Conditions, and End-of-Life Care; Science and the Self; and Humans and Nature. Our 2015 activities and accomplishments in each of these areas are described in these pages.

HASTINGS PROGRAM AREAS

HEALTH & HEALTH CARE

CHILDREN AND FAMILIES

AGING, CHRONIC CONDITIONS, AND END-OF-LIFE CARE

SCIENCE AND THE SELF

HUMANS AND NATURE



NEW GENETIC TECHNOLOGIES

In spring 2015, the world learned about a revolutionary new genetic technology: Crispr-Cas9. It gives scientists the power to change, or edit, the genes of plants and animals—including humans—more easily, more precisely, and more extensively than ever before. Possible benefits include treating or even preventing genetic illnesses. But this new power also raises profound ethical concerns, including the potential to change the "germline" genes that are passed from one generation to the next. With gene editing, we might create enhanced babies and even alter the course of human evolution. These concerns prompted some of the scientists who developed Crispr-Cas 9 to call for a moratorium on its use in humans, providing time to consider when, and how, to deploy it.

The Hastings Center has a long history of examining ethical issues in genetic science, and advising policymakers on the wise use of new technologies, so we were well-positioned to examine the challenges posed by Crispr-Cas9. Therefore, we developed an ambitious international project, Gene Editing and Human Flourishing, to explore the potential social and ethical implications of using gene editing on human germline cells (sperm, eggs, and embryos). The three-year project, led by research scholars Erik Parens and Josephine Johnston with funding from the Templeton Foundation and The Boger Initiative on the Wise Use of Technology, is producing original scholarship with an interdisciplinary group of experts from around the world, including the development of a scholarly volume on the ways in which emerging reprogenetic technologies can both thwart and promote human flourishing. Public events and educational programs for journalists and teachers are also planned.

With other new genetic technologies, scientists are aiming for a wide range of other goals, including bringing back extinct animals. As is often the case, the science is ahead of the ethics. Aiming to close that gap, The Hastings Center hosted an event in February at which research scholar Gregory Kaebnick laid out the issues raised by "de-extinction" and later began a project, De-Extinction: Restoring Nature? Supported by the Gaylin Fund and private donors, the project is exploring the values at stake in national and international policy recommendations.

In addition, Kaebnick was named to a National Academy of Science committee on the responsible use of gene drives, new technologies that make genetic changes to an organism that are designed to spread to future generations and eventually throughout the organism's entire population. Gene drives hold promise for addressing persistent problems, such as eradicating Zika and other mosquito-borne diseases and conserving endangered species, but they also risk extinguishing whole species and harming entire ecosystems.

PROGRAM AREAS

SCIENCE AND THE SELF

HUMANS AND NATURE



Steve Jurvetson

IC.

ARTIFICIAL INTELLIGENCE

Artificial intelligence is making its way into daily life in some ways that are obvious—think self-driving cars. But much more of its presence is hidden: in machines that collect data about us from our smartphones and purchases, algorithms that formulate conclusions about us based on that data, and corporations and governments that use those assumptions to influence our behavior. How can we ensure that these systems are demonstrably beneficial, safe, controllable, and sensitive to human values? As AI advances, what if machines can be programmed to take on the kinds of morally significant, life-and-death actions that until now have been reserved for human beings? Can autonomous systems be adequately controlled, and who will be responsible for their choices and actions?

Recognizing the need to consider answers to these important questions, The Hastings Center began a project, "Control and Responsible Innovation in the Development of Autonomous Machines." The project, led by Wendell Wallach, senior advisor at The Hastings Center, is supported by the Future of Life Institute under a program funded by Elon Musk dedicated to keeping AI beneficial to humanity. The Hastings Center's project will make recommendations to ensure that autonomous systems will be beneficial and that innovative research to develop them will progress in a responsible manner. Wallach is an internationally recognized expert on the ethical and governance concerns posed by emerging technologies. His latest book, *A Dangerous Master: How to Keep Technology from Slipping Beyond Our Control*, was published in 2015.



Wendell Wallach, a senior advisor at The Hastings Center and an internationally recognized expert on ethical and governing concerns posed by emerging technology, is the principal investigator of The Hastings Center's project, "Control and Responsible Innovation in the Development of Autonomous Machines."

PROGRAM AREA



BIG DATA

From improving the diagnosis of life-threatening diseases to developing targeted therapies, advances in medical science depend on data from millions of individuals who donate genetic samples and other information about themselves to research. But the use of Big Data in biomedical research raises many ethical and policy questions. Who has access to the data? How is the privacy of individual donors maintained? Do donors have a right to request and receive genetic information about them that is discovered during research? In 2015, The Hastings Center concluded a multiyear project—"Advancing Collaborative Genetic Research"-that examined the research ethics policies of academic health centers around the country that collect, store, use, and share genetic samples and associated data. Leaders of institutional review boards (IRBs) at these institutions expressed uncertainties and challenges about how to protect human volunteers in biobank-related research. The data also showed more similarities than differences across IRBs regarding their approach to protecting volunteers. However, scientists at these institutions revealed a high degree of variability in their experiences with IRBs when seeking approval to conduct biospecimen research, as well as differences in approaches to informed consent when collecting biospecimens. Some scientists expressed concern that the risks of biospecimen research may be overestimated by IRBs. The findings of this study reflect concerns others have raised about whether regulatory requirements for human research protections are too rigid with regard to the collection, use, and sharing of biospecimens and data. Research scholar Karen Maschke was The Hastings Center investigator on the project, which was led by Case Western Reserve University and funded by the National Human Genome Research Institute.

The ethical issues around Big Data are amplified when they involve children. And yet data from children and adolescents is essential to advancing the diagnosis and treatment of pediatric illnesses. Maschke served as a consultant to Le Bonheur Children's Hospital in Memphis to help the hospital improve its research ethics policies involving genetic samples and other data from children.

EVENT

■ **Big Data Ethics and Policy.** In October, Maschke spoke on governance issues for biobanks and biospecimen research at "Specimen Science Conference: Ethics and Policy Implications," at symposium at Harvard Law School. She said that biobanks need to take seriously claims some have made that individuals who donate their genetic samples and associated data should have a decision-making role in who gets access to their samples and data. The proceedings will be published by MIT Press in 2017.

PROGRAM AREAS



Karen Maschke, a research scholar at The Hastings Center, works on projects concerned with ethical use of genetic samples and related personal data.

HEALTH & HEALTH CARE

SCIENCE AND THE SELF



BRAIN SCIENCE

Can new findings from moral psychology help us better understand and manage our disagreements? Against the backdrop of extreme polarization in our government and general discourse, The Hastings Center embarked on a project to explore this question. Led by Erik Parens, research scholars analyzed recent literature from moral psychology that drew on brain imaging studies to help explain how we make moral judgments. They then deliberated on the ways that insights from these studies might enable people with very different views to better understand one another and work together. The project, funded by Chuck Kahn and Nancy Maruyama, involved planning a day-long public symposium in New York City in 2016.

Parens and colleagues also recognized that internationally there is a growing interest among brain researchers in exploring the genetic predictors of human intelligence. Given the problematic history of studies on intelligence, Parens realized that new research on the topic is likely to raise ethical concerns. Can it be socially "neutral?" How might it be done in a trustworthy way? Could it lead to beneficial educational interventions?

Hastings convened an outstanding interdisciplinary work group to examine these questions. The project was a collaboration of The Hastings Center; the Center for Research on Ethical, Legal and Social Implications of Psychiatric, Neurologic and Behavioral Genetics at Columbia University Medical Center; and The Center for Talented Youth and The Berman Institute of Bioethics, both at Johns Hopkins. Funding came from the Willard Gaylin and Daniel Callahan funds at Hastings, The Center for Talented Youth, and the National Human Genome Research Institute of the National Institutes of Health. A special report was funded by The Boger Initiative for the Wise Use of Emerging Technologies at The Hastings Center.

EVENTS

Brain Stimulation. In March, Erik Parens addressed the Institute of Medicine on ethical questions raised by brain stimulation devices being marketed to consumers for cognitive enhancement.

Ethics and Enhancement. In October, The Hastings Center and The Center for the Study of Bioethics in Belgrade, Serbia cosponsored a well-attended international conference on ethics and enhancement, held in Belgrade. Erik Parens was a keynote speaker, and Mildred Solomon opened the conference with a prerecorded welcome, stressing how the proceedings would advance international thinking about enhancement, moving beyond simple pro-con positions to a more nuanced understanding.

■ Genetics of Intelligence. A public symposium based on the "Genetics of Intelligence" special report took place in New York in December. It was moderated by Mildred Solomon and featured talks by Erik Parens and some of the report's other contributors.

PROGRAM AREA





Top: Paul Appelbaum, a Hastings Center Fellow, addresses The Hastings Center's public symposium on the genetics of intelligence. He was co-editor of the *Hastings Center Report*'s special report on the subject.

Above (I. to r): Dorothy Roberts, Erik Parens, and James Tabery, panelists at the symposium, listen to questions from the audience.

SCIENCE AND THE SELF



PRENATAL TESTING

Prenatal screening and testing are changing dramatically. Not long ago, diagnostic testing could only be done with invasive procedures such as amniocentesis and could only test for a limited number of conditions. But a new generation of prenatal tests will offer prospective parents access to much more information about their fetuses than ever before, and will do so early in pregnancy. Soon, more than 4 million women a year will be offered low-cost genetic tests—some as simple as a maternal blood test—to identify genes that are associated with increased risk for disorders such as schizophrenia and autism, as well as for adult-onset conditions such as Alzheimer's disease and some cancers, and even some nonmedical traits. These tests raise significant guestions for doctors, patients, and health policy. If the technology is simply folded into routine prenatal care, as appears to already be happening, women and their partners could be loaded down with complex, sometimes frightening genetic information that they may not understand and, perhaps, that they did not even want. What should be tested for? Does more information help parents? Are there traits that the tests should not be used to investigate? What policy changes are needed to support ethical use of these tests? With a \$1.1 million grant from the National Institutes of Health, The Hastings Center is leading a foundational ethical analysis of next-generation prenatal genetic tests. The three-year project, begun in 2015, is being led by Josephine Johnston and Erik Parens. Other investigators include Mildred Solomon and Sarah Mc-Graw. Their work will inform clinical practice guidelines and create a research agenda aimed at improving policy and practice.

PROGRAM AREA

SIGNIFICANT SCHOLARSHIP ON OTHER TOPICS



Project

► IMPROVING END-OF-LIFE CARE IN THE HOSPITAL

It's no secret that end-of-life care in the United States falls short in meeting patients' needs and honoring their wishes. Calls for improvement have come from numerous national health policy and research groups. The Hastings Center is collaborating with the Society for Hospital Medicine (SHM), representing the nation's fastest-growing medical specialty, to create tools to enable frontline clinicians and hospital leaders to take steps to improve discussions of prognosis, preferences, and goals with seriously ill patients. This partnership is a focused effort to develop clinicians' capacity to take on a key domain of "primary" palliative care-discussing prognosis and aligning treatment and care with patients' goals-and to collaborate effectively with the relatively small number of palliative care specialists as needed. Research scholar Nancy Berlinger is The Hastings Center's principal investigator on the project, which is supported by The Milbank Foundation. In July 2015, The Hastings Center and the SHM convened an interdisciplinary meeting of hospital clinicians, critical care nurses, patient and family advocates, and other experts to discuss the specific challenges of providing end-of-life care to patients and families. With insights from this meeting and additional research, The Hastings Center and SHM are completing a professional standard, process flow map, and toolkit, which will be rolled out on the SHM's web-based platforms and via professional meetings beginning in the fall of 2016. This new "resource room" offers a quality improvement framework for making health care organizations safer and more responsive to patients and families. It draws on content from The Hastings Center Guidelines for Decisions on Life-Sustaining Treatment and Care Near the End of Life (Oxford University Press, 2013).

A related collaboration, with the American Association for Critical-Care Nurses (AACN), representing the largest nursing specialty society in the world, is informing the above efforts by surveying AACN members, who often work closely with hospitalists, about their communications-related concerns. The goal is ensure that our resources support the hospitalist-nurse team. This project is funded by the Donaghue Foundation.

Project

SINGAPORE CASEBOOK 2

The latest initiative in The Hastings Center's longstanding collaboration with the Centre for Biomedical Ethics at the Yong Loo Lin School of Medicine at the National University of Singapore and The Ethox Centre at Oxford University is the development of the second edition of their online educational casebook. This edition focuses on ethical challenges of caring for people in an aging society. Its theme and design aim to greatly expand the audience for the Singapore Casebook beyond doctors, nurses, and allied health care staff to include professionals who plan or provide community-based care to frail or chronically ill people living at home and in nursing homes, as well as during hospital care transitions. The second edition will be published in 2017. Nancy Berlinger and Michael Gusmano are The Hastings Center's investigators on the project, which is funded by the Lien Foundation. The first edition of the Singapore Casebook, Making Difficult Decisions with Patients and Families: A Singapore Casebook, was published in 2014.

Publications

■ "40 Years of Work on End-of-Life Care—From Patients' Rights to Systemic Reform," by Susan M. Wolf, research scholar Nancy Berlinger, and senior advisor Bruce Jennings in February 12 issue of the *New England Journal of Medicine*.

■ "How Institutional Review Boards Can Support Learning Health Systems While Providing Meaningful Oversight" by Mildred Solomon in the *Health Affairs* Blog on June 5.

■ "Seizing a Medicare Moment to Improve End-of-Life Care," by Mildred Solomon and Nancy Berlinger in *Time* on July 31.



PROGRAM AREA



AGING, CHRONIC CONDITIONS, AND END-OF-LIFE CARE

SIGNIFICANT SCHOLARSHIP ON OTHER TOPICS

Father/Child Sizing Marke Mother Father

Project

► THE BATTLE OVER EVIDENCE-BASED MEDICINE

What are the standards for determining whether a new medical technology is safe and effective? What kind of evidence, and how much of it, are needed? These questions might seem straightforward, but they are unresolved in medical science and health policy. And yet the lives of patients depend on solid answers. What criteria should insurers use to decide what interventions to cover? Should a technology's cost-effectiveness be taken into account? If so, how? Karen Maschke and Michael Gusmano are investigating the debates. They have published several articles and are writing a book that will make policy recommendations.

Public Policy Impact

Advising New York City on immigrants' health care. In November, New York City adopted major recommendations from The Hastings Center and the New York Immigration Coalition for a pilot program to improve health care access for undocumented uninsured immigrants. Both organizations were participants in the Mayor's Task Force on Immigrant Health Care Access, convened to identify ways to meet the health care needs of city residents left out of the Affordable Care Act. The recommendations come from a report coauthored by Hastings Center research scholars Nancy Berlinger and Michael Gusmano, who now serve on the community advisory panel to the pilot program.

Advising the White House Office of Science and Technology Policy. In December, Michael Gusmano and Nancy Berlinger were named to a bioethics steering committee for a new White House OSTP initiative to improve the diagnosis, treatment, and care of people with cancer in sub-Saharan Africa.

Events & Presentations

■ Bioethics in Hong Kong. In January, The Hastings Center co-sponsored "Ethical Dimensions of Policy for Ageing and Genetics," a conference in honor of the launch of the first bioethics center at a major medical center in Hong Kong. The conference featured Hastings research scholars Michael Gusmano, Nancy Berlinger, Erik Parens, and Karen Maschke. The Hastings Center helped Chinese University of Hong Kong develop the bioethics center.

■ Wise allocation of health care. In October, Mildred Solomon addressed the DeVos Medical Ethics Colloquy with a talk titled, "Allocating Resources Wisely across the Life Span: Setting Priorities for Human Flourishing."







Hastings Center research scholar Michael Gusmano answers questions at a conference at the Chinese University of Hong Kong, cosponsored by The Hastings Center, in honor of the launch of the first bioethics center at a major medical center in Hong Kong.

President Mildred Solomon speaks about the wise allocation of health care resources across the lifespan at the Devos Medical Ethics Colloquy, a leading forum on topics of medical and ethical significance, at Grand Valley State University in Michigan.

Hastings Center research scholar Nancy Berlinger (I.); Ricardo Nuila, a physician at Baylor College of Medicine; and Luvia Quinones, health policy director of the Illinois Coalition for Immigrant and Refugee Rights (ICIRR) after Berlinger's presentation at a July 2015 ICIRR forum on health care access for undocumented immigrants in Cook County.

PROGRAM AREA



Nancy Berlinger Daniel Michael Callahan Gusmano Josephine Johnston

Gregory Kaebnick Sarah McGraw Karen Maschke

Thomas Murray P

Erik Parens

Mildred Solomon

Our Scholars and Projects at a Glance

HEALTH AND HEALTH CARE

- Capacity-Building Collaboration with the Chinese University of Hong Kong Nancy Berlinger and Michael Gusmano (Chinese University of Hong Kong)
- Ethical Issues in Prescription Drug Access Under Restricted Distribution Programs Sarah McGraw (Greenwall Foundation under subcontract from Brigham and Women's Hospital)
- The Battle Over Evidence: Medicare and the Fight for Evidence-Based Medicine Karen Maschke and Michael Gusmano (Gaylin Fund)
- The Football Players Health Study at Harvard University, Law and Ethics Initiative Michael Gusmano, Karen Maschke, and Sarah McGraw (National Football League Players Association under subcontract from Harvard Medical School)
- The Selfhelp Virtual Senior Center Initiative Michael Gusmano (Selfhelp Community Services, Inc.)

• CHILDREN AND FAMILIES

- Goals and Practices for Next-Generation Prenatal Testing Josephine Johnston (National Institutes of Health/National Human Genome Research Institute)
- Sequencing of Newborn Blood Spot DNA to Improve and Expand Newborn Screening Josephine Johnston and Erik Parens (National Institutes of Health under subcontract from University of California, San Francisco)

• AGING, CHRONIC CONDITIONS, AND END-OF-LIFE CARE

- Improving End-of-Life Care in the Hospital Nancy Berlinger (Milbank Foundation)
- Making Difficult Decisions with Patients and Families: A Singapore Casebook, 2nd Edition Nancy Berlinger and Michael Gusmano (Lien Foundation under subcontract from National University of Singapore)
- Reaching Non-Self-Identifiers in End-of-Life Care: Resolving Uncertainty and Improving Practice Among Hospital Clinicians Across Teams and Shifts • Nancy Berlinger (Donaghue Foundation)
- The Use of Whole-Exome Sequencing to Guide the Care of Cancer Patients Sarah McGraw (National Institutes of Health under subcontract from University of Pennsylvania

• SCIENCE AND THE SELF

- Center for Research on the Ethical, Legal and Social Implications of Psychiatric, Neurologic and Behavioral (PNB) Genetics Erik Parens and Josephine Johnston (National Institutes of Health under subcontract from Columbia University Medical Center)
- Control and Responsible Innovation in the Development of Autonomous Machines Wendell Wallach (Future of Life Institute)
- Gene Editing and Human Flourishing Erik Parens and Josephine Johnston (Templeton Foundation)
- Le Bonheur Children's Hospital Biorepository and Integrative Genomics (BIG) Initiative Karen Maschke (University of Tennessee Health Science Center)
- The Boger Initiative for the Wise Use of Emerging Technologies Mildred Solomon (Joshua Boger)
- The Moral Psychology of Moral Disagreement: Can Science Help Bioethicists Better Understand and Manage Our Disagreements? Erik Parens (Chuck Kahn and Nancy Maruyama)

• HUMANS AND NATURE

- "De-Extinction": Restoring Nature? Gregory Kaebnick and Bruce Jennings (Gaylin Fund and private donors)
- Values in Impact Assessment Gregory Kaebnick, Michael Gusmano, and Karen Maschke (National Science Foundation)

• CONDUCT OF RESEARCH

- Advancing Collaborative Genetic Research: Ethical and Policy Challenges Karen Maschke (National Institutes of Health under subcontract from Case Western Reserve University)
- Human Subject Protection and Genomic Research at the Mayo Clinic Karen Maschke (Mayo Clinic)
- Patient and Physician Knowledge about FDA Drug Safety Alerts Sarah McGraw (FDA under subcontract from Brigham and Women's Hospital)
- Returning Individual Genetic Results to Participants in Cohort Studies Sarah McGraw (National Institutes of Health under subcontract from Dana Farber Cancer Institute)

EDUCATION

• The Bioethics Project: A Bioethics Research Program for High School Students • Josephine Johnston (Kent Place School)



Front row, I. to r.: Cynda Rushton, Gil Omenn, Robert Pearlman, Mildred Solomon, Rebecca Dresser, Nancy King, Loretta Kopelman, Rosamond Rhodes, back row, I. to r.: Alan Fleischman, Blair Sadler, Bob Baker, Gail Geller, Bruce Jennings, Tia Powell, David Orentlicher, Alexander Capron, Brad Gray, Peggy Battin, Ben Wilfond, Ruth Macklin, Ilina Singh, Mary Ann Baily, Marion Danis

Hastings Genter Fellows Retreat: Serious Work...

n August 2015, The Hastings Center hosted a three-day retreat for Hastings Center Fellows, individuals of outstanding accomplishment whose work has informed scholarship and/or public understanding of complex ethical issues in health, health care, life sciences research, and the environment. The informal gathering consisted of morning workshops on topics such as death and dying and narrative ethics, followed by social and recreational activities in the Hudson Valley. The Fellows Retreat Program Committee consisted of Peggy Battin, Rebecca Dresser, Joseph Fins, Loretta Kopelman, Robert Pearlman, Tia Powell, Cynda Rushton, and Blair Sadler. Hastings Center research scholar Nancy Berlinger served as a liaison to the committee.

...and Serious Fun



Josephine Johnston, director of research (second from right), leads a discussion on how prospective parents can use reprogenetic technologies well.

Welcoming 2015 Hastings Center Fellows

The following Fellows were elected in 2015:

- Alireza Bagheri Tehran University of Medical Sciences, Iran
- I. Glenn Cohen Harvard Law School
- Dena S. Davis Lehigh University
- Walter Glannon University of Calgary, Canada
- Jodi Halpern University of California, Berkeley
- Barron H. Lerner New York University School
 of Medicine
- Kathleen E. Powderly SUNY Downstate Medical Center
- Annette Rid King's College London

Ruth Macklin and Gil Omenn show off their ping pong skills.

> Relaxing together, I. to r.: Ruth Macklin, Marion Danis, and Gail Geller





The Hastings Center is deeply grateful for the generous contributions of its many donors, whose philanthropy significantly supported the Center's work in 2015.



Founders Club (\$25,000+)

Andrew and Nancy Adelson Janie Elizabeth Bailey and Michael Musgrave David J.and Suzanne Baker Joshua and Amy Boger Edgar Cheng Brad Gray and Helen Darling Thomas and Ellen Hakes Patricia and John Klingenstein Ilene Sackler Lefcourt Gilbert S. Omenn and Martha Darling Karen Pritzker and Michael Vlock Eve H. Rice and Timothy D. Mattison David and Linda Roscoe Shonni Silverberg and John Shapiro Francis and Jeanne Trainer

Cornerstone (\$10,000-\$24,999)

Charles Cahn and Nancy Maruyama Daniel and Sidney Callahan Peter C. Canellos Deborah Erdman Charles L. Farrington Gates Helms and Mary Ellen Hawn Robert and Kathleen Hugin Andrew and Julie Klingenstein David and Ruth Levine Michael and Elena Patterson Frederic C. Rich John Usdan

President's Circle (\$5,000-\$9,999)

Kevin R. Brine and Jessica Smith Vivian Donnelley Harold S.H. Edgar and Kristin Glen Alan and Linda Fleischman Harriet and Bruce Rabb Jean Margo Reid Michael Roth and Kari Weil Blair and Georgia Sadler Mildred Z. Solomon

Roundtable (\$1,000-\$4,999)

Stephen F. Altschul Sissela and Derek Bok Jeffrey and Paula Botkin **Roger Branson and Nina Henderson** Christopher Buck and Hara Schwarz William J. Burback and Peter L. Hofmann Nancy Cahners Eric J. Cassell Marilyn Cunniff Priscilla and Robert Dannies Mr. and Mrs. Donald F. DeMuth Rebecca Dresser Nancy P. Durr Joseph J. Fins and Amy Ehrlich Ruth and Gerald Fischbach Joel E. Frader Martha Gallo and Charles W. Kerner Willard and Betty Gaylin Frank and Sarah Geer Christine Grady and Anthony S. Fauci **Charles Hamlin** Jody Heyward Arthur and Sandra Irving Bill Jeffway and Christopher Lee Bruce and Margaret Jennings Neil Kuttner Stacey Lane Jonathan and Leila Linen John and Anne Linville Frank E. Lucente and Stephen Salkin **Richard and Ronay Menschel Robert and Verena Michels** Michele Moody-Adams Robert F. Moriarty **Timothy P. Morris** Thomas and Cynthia Murray Morris and Nancy Offit Stephen and Patricia Oxman John Schmidlin Harold and Vivian Shapiro Meredith and Richard Stark

Paul Menzel and Bonnie Steinbock Patrick and Carol Welsh Edward and Noreen Zimmerman

Benefactor (\$300-\$999) Patricia M. Alt Daniel and Constance Arnold James L. Bernat Thomas and Nancy Berner Gilman S. Burke Lynn Bush **Robert and Carol Canfield** James F. Childress John D. Comer James H. Duffy Gladys Escolona de Motta Kenneth and June Feldman David Ferry Robert L. Fine Dodd Fischer Irvine and Elizabeth Flinn Renee C. Fox Gail Geller Susan Dorr Goold Samuel Gorovitz Marie M. Guerin Shelly Haber and Barbara Messer Albert R. Jonsen Elliott and Sara Kaebnick David Leach Leonard Leven Harvey and Elizabeth Mohrenweiser Arno G. Motulsky James and Alda Muyskens NATP Telnet Corporation Robert A. Pearlman Leslie and Garry Plotnick Sue D. Porter Stephen G. and Mitsuko Post Linda Farber Post James Redfern

Jose Romeu and Sidney Babcock

Thomas and Alice Schelling Anne Sidamon-Eristoff David H. Smith Lin and Richard Tarrant Henk ten Have Stephen G. Thieke Robert D. Truog Alan J. Weisbard Greg and Maryl Wilensky Connie Ann Zuckerman

Supporting Members (\$1-\$299)

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The Rice Family Fellowship • Rice Family Foundation

The Rice Family Fellowship supports a fellowship component to The Hastings Center Humanities Research Initiative, enabling the selection and hosting of a world-class humanities scholar for a full semester each academic year in perpetuity. This initiative was created through a National Endowment for the Humanities challenge grant as a means to enlarge and deepen The Hastings Center's core commitment to humanities-based scholarship in bioethics and to continue to develop leadership in this area.

The Boger Initiative for the Wise Use of Emerging Technologies • Joshua and Amy Boger

Each year for five years, The Boger Initiative will provide funds for foundational scholarship and a public event on an ethics issue relevant to one of our five program areas. This interdisciplinary program will engage visionary scientists, humanists, artists, and bioethicists in the exploration of how best to maximize the benefits, minimize potential harms, and ensure fair access to emerging technologies from such fields as genomics, neuroscience, synthetic biology, nanotechnology, informatics, and robotics. Through scholarly projects, conferences, and a variety of public engagement activities, the program will identify and clarify foundational questions; offer policy recommendations; educate key constituencies such as journalists, teachers and political leaders; and ensure broad citizen involvement.

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STATEMENT OF FINANCIAL POSITION

As of December 31, 2015 Audited 2015

Assets	
Cash and Equivalents	817,155
Investments, at fair value	5,579,155
Receivables (grants and other)	1,631,038
Other Assets	30,387
Furniture and Equipment (net of accumulated dep)	27,674
Leasehold Improvements (net of accumulated amort) 1,043,887	
Total Assets	9,129,296
Liabilities and Net Assets	
Payables and Accruals	114,115
Deferred Revenue	37,320
Total Liabilities	151,435
Net Assets	8,977,861
Total Liabilities and Net Assets	9,129,296

STATEMENT OF ACTIVITIES AND CHANGES IN NET ASSETS

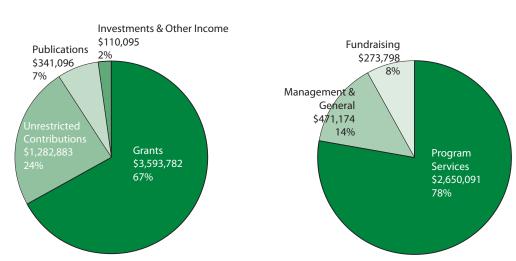
Operating revenues and other support:	
Grants, Gifts, and Contributions	4,248,707
Government Grants	627,958
Publication Revenue	341,096
Other income	110,095
Total Unrestricted Operating Support and Revenue	<u>5,327,856</u>
Operating Expenses	
Program Services	2,650,091
Management and General	471,174
Fund Raising	273,798
Total Operating Expense	<u>3,395,063</u>
Changes in Net Assets from Operations	1,932,793
Non-operating Income	(196,585)
Change in Net Assets	1,736,208
Net Assets, Beginning of year	7,241,653
Net Assets, End of year	8,977,861

Operating Revenue and Support

For the year ended 12/31/15 = \$5,327,856



For the year ended 12/31/15 = \$3,395,063



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