

# MACARTHUR

The John D. and Catherine T. MacArthur Foundation

[www.macfound.org](http://www.macfound.org)

## SUPPORT FOR SCIENCE

### AT A GLANCE

- The aim of the MacArthur Foundation's grantmaking in science is the creation of new knowledge or empirical evidence that can be used to inform public policy decisions.
- Over the past 30 years, the Foundation has awarded approximately \$400 million in grants in support of science—11 percent of the Foundation's total grantmaking.
- Since 1983, MacArthur has supported 24 research networks with grants totaling \$297 million. Research areas have ranged from the effects of aging to the impact of neuroscience on the law.
- MacArthur Fellowships have been awarded to 350 individuals in the physical, biological, computational, and medical sciences. Five of these Fellows have gone on to receive Nobel Prizes.

The John D. and Catherine T. MacArthur Foundation has a long tradition of support for the sciences.<sup>1</sup> Since its inception in 1978, the Foundation has awarded approximately \$400 million in grants for science—about 11 percent of MacArthur's total grantmaking of \$4 billion.

The aim of MacArthur's grantmaking in science is the creation of new knowledge or empirical evidence that can be used to inform public policy decisions. The Foundation's support for science is based on a framework that combines scientific work with the increasing importance of interdisciplinary research. Over the years, MacArthur has supported science through grants for research networks, individuals, and institutions through program areas including conservation and sustainable development, international peace and security, and special initiatives.

### RESEARCH NETWORKS

MacArthur research networks are a mechanism for bringing diverse perspectives, knowledge, expertise, and strategies to bear on the research of complex problems. The network methodology typically combines knowledge from the life sciences with the social and behavioral sciences to address issues related to health, well-being, and behavior of individuals in society. The research frequently results in the creation of new knowledge that can be used to inform public policy or applied in clinical settings.

Since 1983, the Foundation has supported 24 networks with grants totaling about \$297 million. Two major organizing principles for research networks have been human development and mental

health and parasite biology. In supporting research in human development and mental health, the central goal is to promote intellectual collaboration, interdisciplinary approaches, and methods of investigation on significant research questions in the field of study. From 1983 to 2003, MacArthur supported two research networks focused on the biology of parasitic disease and the biology of parasitic vectors, respectively. The network on parasitic disease included support for establishing a field of academic research on the molecular biology of parasitism; the network on parasitic vectors was based on the conviction that intensive application of modern cellular and molecular biology, genetics, and immunology would accelerate progress in understanding and combating parasitic disease. The latter made major contributions to the field of research,

<sup>1</sup> For the purposes of this review, science grants are defined as those that support work utilizing the physical, biological, medical, and behavioral sciences as distinct from the social sciences.

such as developing genetic methods for interrupting the transmission of vector-borne disease.

In 2007, the Foundation launched the Law and Neuroscience Project, which will allow scientists, philosophers, judges, and others on the front lines of criminal justice to harness the positive potential of recent developments in neuroscience.

## GRANTS TO INDIVIDUALS

The Foundation has awarded grants to individuals in support of science through the MacArthur Fellowship and various other programs and initiatives. Since the first class of MacArthur Fellows was awarded in 1981, the program has provided \$111 million to about 350 individuals involved in the physical, biological, computational, and medical sciences. Five MacArthur Fellows, Joseph Taylor (astronomy), Barbara McClintock (molecular biology and genetics), and physicists David Gross, Douglas Osheroff, and Frank Wilczek have gone on to receive Nobel Prizes. Two MacArthur Fellows in mathematics, Michael Freedman and Terrence Tao, received Fields Medals.

The Foundation supports scientific work through special initiatives as well. For example, coinciding with the collapse of the former Soviet Union, MacArthur developed grants to help support Russia's scientific intelligentsia working in the peace and security area and to retain the connections between scientists and researchers in the former Soviet Union and their counterparts abroad. From 1994 to 2004, MacArthur awarded a total of \$4.1 million, most of it in small amounts, to these scientists to research and publish the results of their work in arms control and environmental degradation, and to deliver scientific papers at international meetings.

## PROGRAMMATIC GRANTS

MacArthur's support for science seeks to build and strengthen research and science institutions, enhance public policymaking, and assess the effectiveness of strategies in Foundation program areas, such as conservation and sustainable development and international peace and security.

The Foundation's grantmaking in the field of conservation totals about \$350 million; about 10 percent of those funds support science to help determine the effectiveness of initiatives to counter threats to biodiversity and other conservation work. Similarly, grantmaking in arms control and disarmament has focused on developing the capacity to advise policy makers with independent and rigorous scientific and technical analysis on nuclear, biological, and chemical weapons.

The \$50 million initiative on Science, Technology, and Security, under the Foundation's international peace and security program, brings scientific expertise to public policy discussions about arms control through helping increase the pool of scholars in this field. And the Jefferson Science Fellows Program, which allows scientists to work with senior U.S. diplomats, is a key element of MacArthur's investment in strengthening the links between scientists and policy makers.

The Foundation's commitment to science also includes support for infrastructure and the development of new science institutions, including universities, policy institutes, science museums, zoological parks, and botanical gardens. For example, MacArthur has contributed \$30 million to the Basic Research and Higher Education Program, which seeks to transform and reinvigorate the training of young Russian scientists by strengthening the basic research capabilities of Russian universities. And in 2000, the Foundation embarked on a program to support leading Nigerian universities guided by

the belief that democracies in general, and development in particular, cannot flourish without strong intellectual and scientific communities. Since then, grants totaling \$41 million have been awarded to improve infrastructure at universities throughout Africa for scientific research and training universities. This includes a grant to the African Virtual University in Nairobi, Kenya to provide Sub-Saharan countries with sufficient bandwidth to transmit university education in topics such as science and engineering.

MacArthur's work also includes helping establish and support several science-based institutions to strengthen the infrastructure for policymaking nationally and internationally. Since 1982, the Foundation has contributed \$38 million to World Resources Institute to establish an independent policy research center to bridge the gap between the scientific world and policymakers on complex environmental issues.

## SPECIAL INITIATIVES IN SCIENCE

From time-to-time, a convergence among science, technology, and opportunity allows the Foundation to play a role in helping bring about a positive change to a particular issue. The MacArthur Foundation looks for these opportunities where relatively modest amounts of funding can be leveraged to create a large benefit. Following are recent examples:

### Digital Media and Learning \$50 million, 2005-ongoing

The five-year, \$50 million digital media and learning initiative seeks to help determine how digital technologies are changing the way young people learn, play, socialize, and participate in civic life. Answers to these and other questions are critical to developing educational and other social institutions that can meet the needs of this and future generations. The initiative is both marshaling what is

already known about the field and seeding innovation for continued growth. More information is available at [www.digitalllearning.macfound.org](http://www.digitalllearning.macfound.org) or at [spotlight.macfound.org](http://spotlight.macfound.org).

**Postpartum Hemorrhage Initiative  
\$13 million, 2003-ongoing**

MacArthur is investing \$11 million to reduce significantly maternal deaths due to postpartum hemorrhage in India and Nigeria. The centerpiece of this new effort is distribution of the anti-shock garment, a low-cost neoprene suit that helps stabilize women who are bleeding during childbirth until they can be transported to a health facility. Pathfinder International, the lead grantee, is introducing a package of low-tech interventions to several hundred health facilities in seven states in India and eight states in Nigeria—two countries that comprise one-third of all maternal deaths globally and are the focus of MacArthur's international grantmaking.

**Encyclopedia of Life  
\$10 million, 2007-ongoing**

The Foundation provided a \$10 million grant toward the \$50 million startup cost for the Encyclopedia of Life, an ambitious effort to describe and catalog all known life on earth in one database accessible on the Web. This international project brings together leading scientific institutions, including the Smithsonian, Harvard, the Field Museum, the Marine Biological Laboratory at Woods Hole, the Missouri Botanical Garden, and the Biodiversity Heritage Library. The Encyclopedia can help track biodiversity as climate change and human activity put species under pressure. In addition, it can add great value to the work of the scientist, the student, the conservationist, the policy maker, and the passionate amateur. More information is available at [www.eol.org](http://www.eol.org).

**Science Chicago  
\$2 million, 2007-2009**

Chicago's Science Chicago is showcasing the City's scientific community, highlighting the quality of the science work in Chicago and its importance to the local economy. The initiative, led by the Museum of Science and Industry, seeks to raise awareness of the role of science in everyday life, and of the challenges facing the nation as it strives to remain competitive in scientific and technological fields. The Science Chicago is also designed to help promote understanding of and appreciation for the evidence-based scientific process, and help young people see the fun and excitement in science. MacArthur spurred the idea of the Science Chicago and provided planning and operational support. More information is available at [chicagoscienceinthecity.org](http://chicagoscienceinthecity.org).

**The Science Commons and  
the Public Library of Science  
\$1 Million, 2007-ongoing**

In 2007, the Foundation's General Program recommended two grants to advance science by addressing some of the legal, technical, and financial barriers to scientific collaboration and innovation through the creation and implementation of easy-to-use tools. Developed by the Creative Commons, the Science Commons tool focuses on licensing policies for sharing biological materials, scholarly publishing, and improving the accessibility of scientific data. The other initiative, developed by the Public Library of Science will attempt to provide the public and experts with prompt, accurate, and thorough scientific scholarship in an open access environment.

**SELECTED GRANTS  
IN SUPPORT OF SCIENCE**

**Research Networks**

UNIVERSITY OF CALIFORNIA, SANTA BARBARA  
Santa Barbara, CA  
\$10,000,000 in support of an Initiative on Neuroscience and the Law (over three years).

UNIVERSITY OF PENNSYLVANIA  
Philadelphia, PA  
\$5,200,000 in support of the Research Network on Transitions to Adulthood and Public Policy (over four years).

UNIVERSITY OF VIRGINIA  
Charlottesville, VA  
\$4,550,000 in support of the Research Network on Mandated Community Treatment (over four years).

JUDGE BAKER CHILDREN'S CENTER  
Boston, MA  
\$3,900,000 in support of the Research Network on Youth Mental Health Care (over three years).

CHILDREN'S HOSPITAL BOSTON  
Boston, MA  
\$900,000 to establish the Institute of Child Development in Romania (over three years).

UNIVERSITY OF VIRGINIA  
SCHOOL OF LAW  
Charlottesville, VA  
\$750,000 in supplemental support of the Research Network on Mandated Community Treatment benefit-cost projects (over two years).

BRANDEIS UNIVERSITY  
Waltham, MA  
\$616,262 in support of the National Scientific Council on the Developing Child (over three years).

COLUMBIA UNIVERSITY  
MAILMAN SCHOOL OF PUBLIC HEALTH  
New York, NY  
\$250,000 in support of planning a  
Research Network on an Aging Society.

HARVARD UNIVERSITY  
SCHOOL OF PUBLIC HEALTH  
Boston, MA  
\$133,738 in support of the National  
Scientific Council on the Developing  
Child (over three years).

### **Conservation and Sustainable Development**

ARIZONA STATE UNIVERSITY  
GLOBAL INSTITUTE OF SUSTAINABILITY  
Tempe, AZ  
\$4,172,147 in support of an  
interdisciplinary research initiative on  
advancing conservation in a social  
context (over three years).

ROYAL GOVERNMENT OF BHUTAN,  
MINISTRY OF AGRICULTURE  
Thimphu, Bhutan  
\$1,500,000 to establish the Ugyen  
Wangchuck School of Forestry and  
Environmental Studies (over three years).

CARNEGIE INSTITUTION OF WASHINGTON  
DEPARTMENT OF GLOBAL ECOLOGY  
Stanford, CA  
\$2,250,000 in support of the Center for  
Science, Technology and Security Policy,  
which functions as a clearinghouse for  
information between policymakers and  
scientific experts (over three years).

\$160,000 in support of expanding local  
capability to map by satellite forest  
disturbances in the Peruvian rainforest.

\$1,770,000 in support of the  
development and testing of new  
technology that will allow forest canopy  
species composition to be sensed  
remotely (over two years).

INTER-AMERICAN INSTITUTE  
FOR GLOBAL CHANGE RESEARCH  
Sao Paulo, Brazil  
\$450,000 in support of assessing  
climate change impacts on biodiversity  
in the Andes.

INTERNATIONAL UNION FOR  
CONSERVATION OF NATURE  
AND NATURAL RESOURCES  
Gland, Switzerland  
\$200,000 to assess the conservation  
status of freshwater fishes and mollusks,  
and ecologically important aquatic  
insects in the Eastern Himalayan  
biodiversity hotspot.

NATIONAL UNIVERSITY OF RWANDA  
DEPARTMENT OF BIOLOGY  
Butare, Rwanda  
\$420,000 to strengthen capacity to  
offer graduate education in conservation  
science to students from Rwanda and  
neighboring countries in the Albertine Rift  
(over three years).

BIRDLIFE INTERNATIONAL  
Cambridge, United Kingdom  
\$350,000 to assess climate change  
impacts on the conservation of birds  
in Asia (over two years).

WORLD WILDLIFE FUND  
Washington, DC  
\$700,000 to assist the Royal Government  
of Bhutan in strengthening the corridor  
system that connects the protected  
areas of Bhutan into a single continuous  
landscape (over three years).

\$575,000 to improve the forest allocation  
and management process in southern  
Lao PDR and to build long-term capacity  
in forest management and planning in the  
Lower Mekong focal area (over three years).

WILDLIFE CONSERVATION SOCIETY  
Bronx, NY  
\$650,000 in support of an integrated  
strategy for conservation and sustainable  
natural resource use in Antongil Bay,  
Madagascar (over three years).

\$600,000 to support biodiversity  
conservation in the Annamite Mountains  
in Lao PDR and Cambodia through  
management planning, biodiversity  
surveys and monitoring (over three years).

\$500,000 in support of the consolidation  
of an integrated strategy for conservation  
and sustainable natural resource use in  
Madagascar's Antongil Bay Landscape  
(over three years).

OFFICE RWANDAIS DU TOURISME  
ET DES PARCS NATIONAUX  
Kigali, Rwanda  
\$500,000 in support of the establishment  
of a conservation training center (over  
three years).

NATURE CONSERVANCY,  
ASIA/PACIFIC REGION  
Honolulu, HI  
\$500,000 to develop practical methods  
for applying resilience principles to coral  
reef conservation and sharing the science  
and methodology of coral resilience  
through training programs in areas of  
high coral reef importance around the  
world (over three years).

### **Russia Initiative**

IRINA KONSTANTINOVNA KRAVCHENKO  
\$15,500 to deliver the paper "Oxidation of  
Atmospheric Methane in Grey Earth  
Forest Soils of Russia and Its Regulation  
through the Composition of Microbial  
Communities" (over 18 months).

BORIS ALEKSANDROVICH REVICH  
\$16,600 to deliver the paper  
"Dioxin Pollution as a Risk Factor for  
Breast Cancer."

LEV ALEKSANDROVICH FEDOROV  
\$11,200 to deliver the paper  
"The Consequences of Chemical  
Weapons Production for the  
Environment in Russia."

**Arms Control and Disarmament**

PRINCETON UNIVERSITY  
WOODROW WILSON SCHOOL OF  
PUBLIC AND INTERNATIONAL AFFAIRS  
Princeton, NJ  
\$2,176,390 in support of research,  
training and collaboration with independent  
analysts worldwide on issues at the  
intersection of science, technology and  
security (over five years).

\$2,120,604 in support of an independent  
International Panel on Fissile Materials  
(over five years).

HARVARD UNIVERSITY  
BELFER CENTER FOR SCIENCE AND  
INTERNATIONAL AFFAIRS  
Cambridge, MA  
\$2,145,000 in support of the Managing  
the Atom Project (over five years).

KING'S COLLEGE LONDON  
DEPARTMENT OF WAR STUDIES  
London, United Kingdom  
\$1,000,000 to support an interdisciplinary  
program of research and training to  
strengthen scientific advice on international  
security policy (over two years).

UNIVERSITY OF MARYLAND FOUNDATION  
Adelphi, MD  
\$2,100,000 in support of the Advanced  
Methods of Cooperative Security Project  
(over five years).

STANFORD UNIVERSITY  
CENTER FOR INTERNATIONAL  
SECURITY AND COOPERATION  
Stanford, CA  
\$2,034,231 in support of research,  
training and collaboration with  
independent analysts worldwide on  
issues at the intersection of science,  
technology and security (over five years).

UNITED NATIONS OFFICE FOR  
DISARMAMENT AFFAIRS  
New York, NY  
\$2,000,000 to provide bridge funding to  
retain expertise and institutional memory  
from the United Nations Monitoring,  
Verification and Inspection Commission  
(over 18 months).

CARNEGIE MELLON UNIVERSITY  
DEPARTMENT OF ENGINEERING AND  
PUBLIC POLICY  
Pittsburgh, PA  
\$1,939,223 in support of research and  
analysis on homeland and international  
security problems of a scientific and  
technical nature (over five years).

CORNELL UNIVERSITY  
PEACE STUDIES PROGRAM  
Ithaca, NY  
\$1,860,000 in support of training and  
research on security issues with a  
scientific and technical dimension  
(over five years).

GEORGIA TECH RESEARCH  
CORPORATION  
Atlanta, GA  
\$1,840,000 in support of a program to  
train a new generation of scientists and  
engineers in technical research and  
policy analysis of security issues (over  
five years).

MASSACHUSETTS INSTITUTE  
OF TECHNOLOGY  
PROGRAM IN SCIENCE,  
TECHNOLOGY, AND SOCIETY  
Cambridge, MA  
\$1,200,000 in support of technical  
research and track two dialogues by the  
Science, Technology, and Global Security  
Working Group (over three years).

NAUTILUS INSTITUTE  
San Francisco, CA  
\$1,050,000 in support of an East Asian  
network of scientists undertaking  
collaborative research on international  
security issues (over three years).

**Infrastructure**

U.S. CIVILIAN RESEARCH AND  
DEVELOPMENT FOUNDATION  
Arlington, VA  
\$9,841,078 in support of the Program  
on Basic Research and Higher Education  
in Russia (over five years).

UNIVERSITY OF IBADAN  
Ibadan, Nigeria  
\$4,000,000 in support of strengthening  
the human capital, institutional facilities,  
and governance system of the University  
(over three years).

BAYERO UNIVERSITY  
Kano, Nigeria  
\$3,100,000 in support of staff  
development and the refurbishing  
and upgrading of University facilities  
(over three years).

UNIVERSITY OF PORT HARCOURT  
Port Harcourt, Nigeria  
\$2,500,000 in support of institutional  
strengthening (over three years).

AFRICAN VIRTUAL UNIVERSITY  
Nairobi, Kenya  
\$900,000 in support of supplying  
discounted bandwidth to a consortium of  
universities in Africa (over three years).

UNIVERSITY OF ANTANANARIVO  
FACULTY OF SCIENCES  
Antananarivo, Madagascar  
\$820,000 in support of the advancement  
of conservation biology within the Faculty  
of Science (over three years).

CENTER FOR RUSSIAN  
ENVIRONMENTAL POLICY  
Moscow, Russia  
\$450,000 in support of new mechanisms  
for developing and implementing Russia's  
environmental policy (over three years).

GEORGIA INSTITUTE OF TECHNOLOGY  
Atlanta, GA  
\$1,840,000 to train a new generation of scientists and engineers in technical analysis and of security issues (over five years.)

NAUTILUS INSTITUTE  
San Francisco, CA  
\$1,050,000 to continue the development of a network of scientific and technical experts on nuclear weapons and nuclear energy challenges in Asia.

CARNEGIE MELLON UNIVERSITY  
Pittsburgh, PA  
\$1,939,000 in support of research and analysis on homeland and international security problems of a scientific and technical nature (over five years.)

### Building Science Institutions

ENERGY FOUNDATION  
San Francisco, CA  
\$11,941,748 in support of general operations (over three years).

WORLD RESOURCES INSTITUTE  
Washington, DC  
\$1,500,000 to support expanded communications technology capacity (over three years).

### Special Initiatives in Science

PATHFINDER INTERNATIONAL  
Watertown, MA  
\$10,700,000 to implement a package of interventions for reducing maternal mortality and morbidity due to postpartum hemorrhage in India and Nigeria (over four years).

SMITHSONIAN INSTITUTION  
NATIONAL MUSEUM OF NATURAL HISTORY  
Washington, DC  
\$10,000,000 in support of coordination of the Encyclopedia of Life (over two years).

FRONTLINE  
Boston, MA  
\$4,578,612 in support of the FRONTLINE and the FRONTLINE/World series, and the expansion of the series' digital and online capabilities (over five years).

HARVARD LAW SCHOOL  
BERKMAN CENTER FOR INTERNET AND SOCIETY  
Cambridge, MA  
\$3,000,000 in support of the Open Net Initiative (over four years).

FEDERATION OF AMERICAN SCIENTISTS FUND  
Washington, DC  
\$2,500,000 in support of general operations.

BENETECH  
Palo Alto, CA  
\$800,000 in support of using science and technology to promote human rights (over three years).

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE  
Washington, DC  
\$760,000 in support of the application of geospatial technologies to human rights (over three years).

PUBLIC LIBRARY OF SCIENCE  
San Francisco, CA  
\$500,000 in support of the open access publishing initiatives (over two years).

CREATIVE COMMONS  
San Francisco, CA  
\$500,000 in support of Science Commons (over two years).

GYNUITY HEALTH PROJECTS  
New York, NY  
\$400,000 in support of a pilot test of the SpringFusor pump for providing magnesium sulfate to treat pregnant women with pre-eclampsia and eclampsia (over two years).

KIKIM MEDIA  
Menlo Park, CA  
\$250,000 in support of a documentary film "Still Life: The Pursuit of Parkinson's."  
  
\$200,000 in support of a documentary film, "Ending AIDS: The Search for a Vaccine."

JHPIEGO  
Baltimore, MD  
\$185,000 in support of a project to develop the training capacity of Federation of Obstetrics and Gynecological Societies of India to prepare general practitioners to provide quality emergency obstetric care in rural areas of India (over two years).

ONE WORLD INTERNATIONAL FOUNDATION  
London, United Kingdom  
\$70,000 in support of a planning process to determine the most appropriate approach to implementing the Mobile4Good project in Nigeria, which uses mobile phone technology to promote healthy outcomes.

MUSEUM OF SCIENCE AND INDUSTRY  
Chicago, IL  
\$2,000,000 in support of Science Chicago.

### Digital Media, Learning and Education

UNIVERSITY OF CALIFORNIA, IRVINE  
Irvine, CA  
\$2,350,000 to operate, publicize, and support the winners of an open-call competition at HASTAC to build the field of Digital Media and Learning (over 18 months).

MONTEREY INSTITUTE FOR TECHNOLOGY AND EDUCATION  
Monterey, CA  
\$2,140,000 in support of building the emerging field of Digital Media and Learning through a new journal, conferences, and gatherings (over five years).

UNIVERSITY OF CALIFORNIA, BERKELEY  
SCHOOL OF INFORMATION MANAGEMENT  
AND SYSTEMS  
Berkeley, CA  
\$1,954,000 in support of a multi-site  
ethnographic study of how young people  
use digital media, and to what effect  
(over three years).

UNIVERSITY OF SOUTHERN CALIFORNIA  
ANNENBERG CENTER FOR  
COMMUNICATION  
Los Angeles, CA  
\$1,346,000 in support of a multi-site  
ethnographic study of how young people  
use digital media, and to what effect  
(over three years).

INDIANA UNIVERSITY  
Bloomington, IN  
\$1,839,000 to analyze and support efforts  
to expand the immersive learning  
environment for Quest Atlantis (over  
three years).

MASSACHUSETTS INSTITUTE  
OF TECHNOLOGY  
COMPARATIVE MEDIA STUDIES  
Cambridge, MA  
\$1,800,000 in support of the  
development and testing of a  
comprehensive media literacy curriculum  
and a national communications strategy  
to ensure widespread distribution (over  
three years).

ACADEMIC ADVANCED DISTRIBUTED  
LEARNING CO-LAB  
Madison, WI  
\$1,800,000 in support of the development  
and testing of a comprehensive media  
literacy curriculum, research on the new  
curricula, the development of new  
approaches to assessment, and a  
national communications strategy to  
ensure widespread distribution of the  
product.

ARIZONA STATE UNIVERSITY  
Tempe, AZ  
\$1,782,000 to develop approaches to  
educational assessment that acknowledge  
learning in a digital media context (over  
three years).

UNIVERSITY OF CHICAGO  
CENTER FOR URBAN SCHOOL  
IMPROVEMENT  
Chicago, IL  
\$1,600,000 in support and expansion of  
after school digital media programs (over  
three years).

**About the MacArthur Foundation**

The MacArthur Foundation supports creative people and effective institutions committed to building a more just, verdant, and peaceful world. In addition to selecting the MacArthur Fellows, we work to defend human rights, advance global conservation and security, make cities better places, and understand how technology is affecting children and society. More information is available at [www.macfound.org](http://www.macfound.org).

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