

FEDERAL FUNDING FOR SOCIAL AND BEHAVIORAL SCIENCES:

Improving Health
Bolstering Security
Growing the Economy
Fostering Innovation
Improving our Lives

The genesis of some of our nation's greatest scientific discoveries, technological innovations, healthcare interventions and military strategies have grown from the social and behavioral sciences funded by the National Science Foundation (NSF), the National Institutes of Health (NIH), the Department of Defense (DoD), and other federal agencies. The national kidney exchange program, geographic information systems, artificial intelligence, and new technology to assist in crime prevention all have origins in social and behavioral science supported by government funding. These and other innovations have transformed the ways in which we communicate with each other, understand diverse cultures, participate in our democracy, ensure our health and public safety, and improve our everyday lives.

Like the physical and natural sciences, federally funded research in the social and behavioral sciences—economics, anthropology, political science, linguistics, and psychology, among others—provides needed insight and tools to resolve many of the grand challenges currently facing our nation and the world. Our long-term success in addressing major economic,



health, energy, environmental and national security challenges depends on understanding not only their technological and scientific complexities, but also the broader social, political and economic issues that serve as the context for addressing these matters.

With the advent of new technologies, shifting demographics and an increasingly complex and interconnected world, federal investments in the social and behavioral sciences will be increasingly important in shaping our understanding of the world in which we live and in preparing us for the future.

KEY FEDERAL AGENCIES THAT FUND SOCIAL AND BEHAVIORAL SCIENCES

- National Science Foundation
- National Institutes of Health
- Department of Defense



KEEPING OUR NATION SAFE

Understanding the language, culture, values, and religions of other nations is critical for developing sound international diplomacy and national defense strategies. Basic research in the fields of anthropology, sociology, and economics has enabled the United States to forge international treaties, find mutually agreeable solutions to international challenges, and develop effective tactical operations abroad. The Defense Department's Minerva Initiative, the Defense Advanced Research Projects Agency (DARPA), Social Media in Strategic Communication (SMISC), and Strategic Social Interaction Modules (SSIM) are federal research efforts that build defense strategies using insights and expertise from the social and behavioral sciences. The U.S. Department of Homeland Security's Science and Technology Directorate funds the National Consortium for the Study of Terrorism and Responses to Terrorism (START), which uses methods, theories, and data from the social and behavioral sciences to help develop security strategies used both at home and abroad. Since its inception, START researchers have responded to hundreds of requests from federal, state, and local governments for consultation on matters of domestic and international terrorism. Most recently in the summer of 2013, START research data was used in response to Yemen terror threats. Social and behavioral sciences have also become critical in meeting other emerging national security threats. For example, computer scientists and social scientists are working side by side to mitigate the risk of cyber attacks. In fact, a key element of a successful U.S. cybersecurity policy will be to ensure that adequate attention is given to human behavior and its role in successfully deterring and defending against such attacks. This is why the recently proposed Cybersecurity Enhancement Act of 2013 includes significant attention to the social and behavioral sciences.



STRENGTHENING AMERICAN DEMOCRACY



Among the most important ways Americans engage in our representative democracy is through elections. The social sciences have enhanced our understanding of how and why citizens choose to participate or not participate in the electoral process. NSF-funded surveys like the American National Election Study (ANES) have provided meaningful data about the political behavior and the shifting priorities of Americans since 1948. This study and other vital political science research help our nation not only document long term trends in political attitudes, behavior, and engagement, but also improves our ability to encourage public involvement in our democracy. In addition, ANES data is downloaded and used by federal agencies, educational institutions, media outlets, and organizations across the nation to study factors that contribute to political stability and educate students on how to use survey data to effectively inform research.

Improving Civic Engagement

Meaningful civic engagement is one of the cornerstones of a successful democracy. Robert Putnam's formative study, *Making Democracy Work*, funded by NSF, has demonstrated that grassroots civic engagement (e.g. community service, volunteering, participation in local associations, voting) is critical to successful democracies. His research and subsequent studies have found that civic engagement creates a culture of citizenship and produces vital social capital within communities that in turn improves health, quality of life, employment rates, and economic vitality. Consistent civic engagement among a nation's citizens also provides other economic benefits for society. In 2011, Americans volunteered in their communities nearly 7.9 billion hours, an estimated economic value of roughly \$171 billion.

States and major metropolitan areas that had more civic engagement in 2006 or earlier, experienced smaller increases in unemployment between 2006 and 2010.

—National Conference on Citizenship

IMPROVING HEALTH AND SAFETY

Social networks, interpersonal relationships, and environmental influences are among the factors that affect individual health-related decisions. Federally funded social and behavioral science research provides health practitioners and policymakers with insight into the interventions needed to improve the health and well-being of our nation's citizens. For example, federal research agencies like NIH are studying the role of mobile technology and various tablet and cell phone applications in advancing preventative health measures such as fitness and weight management.

Curbing Alcohol Abuse Among College Students and Underage Drinkers



One in four full-time college students has experienced alcohol abuse or dependence within the past year.

Since 2004, the National Institute on Alcohol Abuse and Alcoholism has studied underage drinking behaviors through its



Underage Drinking Research Initiative (UDRI). Using this research, UDRI has developed tools and resources for pediatricians to assess alcohol use among children and adolescents and for colleges to create strategies for reducing underage drinking on campus. Screenings and interventions by medical practitioners can greatly reduce alcohol use among adolescents and college students.

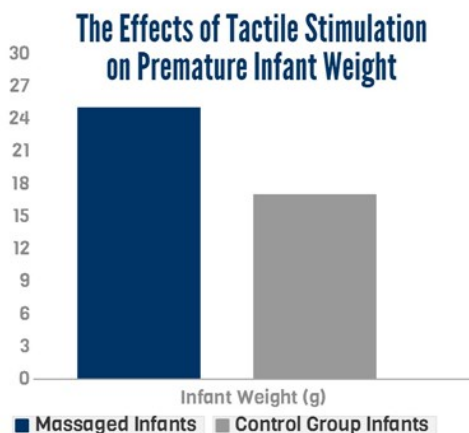
Improving the Development of Premature Infants

Nearly a half-million babies in the United States—one out of every nine—are born prematurely each year. Dr. Tiffany Field's landmark research on tactile simulation



(infant massage), which has affected the development and growth of premature infants, was developed with support from the National Institute of Child Health and Human Development and the National Institute of

Mental Health. This research has helped doctors to understand how they can employ stimulation to facilitate growth, as well as behavioral and physiological organization, in premature infants. Her research showed that massaged preemies gained 47% more weight, were more socially responsive, and went home six days sooner than those that did not receive stimulation. These improvements translated into a savings of \$3,000 per hospital stay for preemies in the massage therapy group. One year later, the massaged infants still weighed more than the untreated infants, and scored higher on a test of infant cognitive and motor development. As a direct result of Field's research, nearly 40% of neonatal intensive care units across the United States now give premature infants massage therapy.



Improving Preparedness and Response to Disasters

The nation has also recognized the importance of research on disasters. Two relevant areas of study are risk communication and resilience. H. Dan O'Hair of the University of Kentucky has used demographic, socioeconomic, physiological, and psychological data to improve the accuracy and efficacy of advisories and warnings for weather systems leading to improved communication of hurricane information that promotes more effective protective decision-making, thus saving lives and property. The NSF-supported work of Roxane Cohen Silver has contributed to our understanding of how people cope with disasters, from the September 11th tragedy to earthquakes and firestorms, by investigating how the repeated media exposure of traumatic images is harmful to mental and physical health.

REDUCING VIOLENCE AND INCREASING COMMUNITY SAFETY

In 2011, an estimated 1.2 million violent crimes occurred nationwide. Violent crime not only reduces quality of life and community safety, but also costs our nation billions of dollars in medical expenses, court fees, and police expenditures. The social and behavioral sciences contribute significantly to our nation's understanding of crime and violence and leads to the development of intervention policies aimed at reducing them.

Innovative Crime Mapping

Another area of innovation that has grown out of the merger of advancing technology with geography is Geographic Information Systems (GIS). NSF's support of the National Center for Geographic Information Systems and Analysis in the mid-1980s spearheaded the development of what is now a multi-billion dollar GIS industry. These systems are now applied by states, counties, and localities to address issues ranging from urban planning to public safety. Crime mapping activities based upon GIS have played an important role in reducing crime over the past two decades.



Fighting Crime with Math and Anthropology

With support from the NSF, a team of anthropologists, criminologists, and mathematicians at the University of California, Los Angeles created a mathematical computer simulation model of crime pattern formation. The model revealed that additional policing in certain crime “hot-spots” resulted in two alternate responses: relocation of the criminal activity to different areas or complete disbanding of the activity. In 2010, those researchers collaborated with police departments in Santa Cruz and Los Angeles to map crime hot spots in those cities. Their findings are helping police predict when crime can be suppressed by intensified police actions and when crime might merely be displaced to other neighborhoods. As a result of this research, burglaries in Santa Cruz declined by 19% over a six-month period. In 2011, *Time* magazine included predictive computer modeling as one of its 50 Best Inventions for that year.

FOSTERING AMERICAN INNOVATION

Social science research innovations have contributed to or informed the development of a host of advanced technologies like artificial intelligence, geographic information systems, and mobile devices like the iPad. Social science research has also played a vital role in shaping our understanding of the impact of federally sponsored research.



“Innovation, the act of creating or inventing new ideas or methods, has a basis in social and behavioral activity.”

— The Science of Science Policy: A Federal Research Roadmap

The Science of Science Policy (SoSP) is an emerging interdisciplinary field of research that relies heavily on the social sciences to produce rigorous data about the impact of federal research investments. The rich data and research provided by SoSP has the potential to play a vital role in fostering our nation's innovations and inventiveness by providing policymakers and the Federal Government with needed information to make better R&D management decisions.

REFERENCES

References for the information provided in this piece are accessible at:

https://www.aau.edu/registration/public/2013_SBE_Brochure_References.pdf.

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