TESTIMONY OF

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EXECUTIVE DIRECTOR

CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS
(COSSA)

on the

FY 2002 APPROPRIATION

FOR THE

NATIONAL SCIENCE FOUNDATION (NSF)

before the

HUD, VA, INDEPENDENT AGENCIES SUBCOMMITTEE
COMMITTEE ON APPROPRIATIONS
U.S. HOUSE OF REPRESENTATIVES

HONORABLE JAMES T. WALSH, CHAIRMAN

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Mr. Chairman and Members of the Subcommittee:

I am Howard J. Silver, Executive Director of the Consortium of Social Science Associations. COSSA represents over 105 professional associations, scientific societies, universities and research institutes concerned with the promotion of and funding for research in the social, behavioral and economic sciences (SBE). COSSA functions as a bridge between the research world and the Washington community. A list of COSSA's Members, Affiliates, and Contributors is attached.

I want to express COSSA's appreciation for the Subcommittee's past strong support for NSF, particularly last year's substantial budgetary increase. As you do every year, you confront difficult choices among competing agencies under the Subcommittee's jurisdiction in a budget constrained by the need to limit federal spending. COSSA hopes that NSF will remain a significant priority for the Subcommittee.

COSSA strongly believes that investing in NSF's research and education efforts will help determine this country's future economic well-being and national security. Therefore, **COSSA finds the administration's proposal for a $56 million increase for NSF in FY 2002 totally inadequate. In agreement with Coalition for National Science Funding, and Senators Bond and Mikulski, COSSA supports doubling the NSF budget over the next five years. The Coalition for National Science Funding (CNSF) recommends a FY 2002 budget for NSF of $5.1 billion. COSSA endorses this recommendation.** This budget enhancement will return many-fold its value in economic growth, help save lives, promote prosperity, and improve society, and provide more excellent science from more excellent scientists.

Over the past half century science has been the engine that has driven the nation's economic success and quality of life improvements. Fundamental university-based science has delivered the great technological advances that have provided for new methods and products that have advanced our nation forward. These include: geographic information systems, World Wide Web search engines, automatic heart defibrillators, product bar codes, computer aided modeling, retinal implants, optical fibers, magnetic resonance imaging, and composite materials used in aircraft.

A substantial increase for NSF in FY 2002 will prepare us for the great advances in the 21st Century. The budget enhancement would allow NSF a much-needed boost for the size and duration of its research and education grants. It would also lead to improving the scientific literacy of the nation's students and general population. As our business leaders understand, without improvements in education and training and new innovations and scientific findings, growth will stall. NSF needs a significant influx of new funds.

<u>The FY 2002 Budget and the Social, Behavioral and Economic Sciences (SBE)</u>

COSSA supports a sizeable increase for the Research and Related Activities account, so that SBE and the other Directorates can continue to fund important research seeking scientific breakthroughs to help secure a better life for people. A significant increase will also provide enhanced support of the fundamental research that SBE scientists conduct to understand economic, social, and political behavior.

At last year's Subcommittee hearing with NSF, Chairman Walsh asked about NSF's plans for the social sciences. The SBE sciences are poised and ready to make significant discoveries in the future. Improvements in computer computation, computer communication, and the rapid increases in multidisciplinary scientific endeavors make the old model of these sciences as "cottage industries" a difficult one to sustain any more. Collaborations, collaboratories, merged databases, functional MRIs, and virtual centers are the future of SBE research. As the new administration seeks "evidence based" policies, the SBE sciences are also ready to produce the research to help develop and evaluate policy alternatives. We look forward to a major expansion of resources in the SBE directorate to fuel this exciting and long overdue enhancement of the capabilities of these sciences.

The pent-up demand for new infrastructure in the SBE sciences is enormous. Last year, COSSA noted the competition that produced support for new database collections, collaboratories, and web-based survey research to improve the capabilities of social/behavioral scientists to conduct advanced and complex research. In that competition only 6 out of over 100 proposals received NSF funding. A new competition this year produced similar results. SBE expects to make 7 awards. The unfortunate fact is that this represents only about one-half of those projects rated must-fund in the merit review process. NSF and SBE need more funds to support all of the excellent projects.

With its theme of "Leaving No Child Behind," the new Bush administration is clearly interested in children and learning. The SBE sciences are in the forefront of providing research and evidence for improving how our children learn and survive in the modern, complex societies in which we live. Fundamental research by developmental psychologists, cognitive scientists, sociologists, and economists, has revealed a wealth of data about how children think and learn and how these processes are mediated by family demographics, community politics, and the structure of the schools. The SBE directorate has an important role to play in sponsoring basic research on the cognitive and social processes, as well as the impact of families, schools, and communities, on students and their teachers.

In FY 2002, SBE expects to continue its efforts to implement the Children's Research Initiative as directed by the Congress. NSF has issued a call for proposals for an integrated approach to child development research using FY 2001 funds. The solicitation will fund centers and collaborations, and provide help for scientists to form partnerships through planning or incubation grants. In addition, individual investigator awards will be available. Following up on the research issues proposed by *A National Research Initiative for America's Children for the 21st Century*, SBE will support multidisciplinary activities that bring together researchers in the following areas: cognitive development, development psychology, linguistics, neuroscience, anthropology, social psychology, sociology, family studies, cross-cultural research, and environmental psychology.

SBE will also continue expansion of its cognitive neuroscience program in FY 2002. The aim is to understand the relationship between cognitive processing and brain function. SBE's Behavioral and Cognitive Division hopes to invest a significant part of its budget to support basic research on cognitive processing and brain function. This research will produce new insight into learning and education from infancy through adulthood, on human and machine performance in complex tasks, and on social attitudes, stereotypes, social perceptions, and social interaction. This enormous scientific opportunity and the need for enhanced funds will take advantage of new breakthroughs in neuroimaging. These techniques have provided exciting opportunities for uncovering how it is that the human brain accomplishes basic cognitive and perceptual activities.

The origins of human beings and how they populated various parts of the Earth remain topics that fascinate scientists and non-scientists alike. The March 2, 2001 issue of *SCIENCE Magazine* devotes many pages to the research in this area. SBE, through its Human Origins emphasis, will continue to support examination and expansion of knowledge of the beginning and development of the human species, our relationship with the world's environments, and human adaptation processes over the last 5-6 million years.

The ethical, legal, and social consequences of technological change also pervade American life. From increasing privacy concerns, to the ethics of genetic testing, to how we relate in Web based communities, to how our political system works, SBE scientists are exploring many aspects of this issue. Studies continue to focus on transformations of social institutions, governance, electronic commerce, social and economic simulation and modeling, sustainable use of large information infrastructures, electronic groups and communities, barriers to information technology diffusion, human interaction and communications laboratories, and digital government. Recently, the Internet Policy Institute released an NSF-supported study that considered the feasibility of internet voting.

Recent Examples of SBE Research

Research in the SBE sciences continues to examine the ever more complex and important human dimensions of issues and generates new knowledge and insights to help us understand human commonalities and human differences. Basic research in these disciplines also develops information that policymakers can use later to formulate solutions to individual and societal problems. The research portfolio is diverse and supports science of enormous intellectual excitement and substantial societal importance. Some recent examples of SBE supported research findings suggest the breadth, scientific excitement, and societal importance of this work.

NSF supported basic research in economics has helped develop new methodologies and principles, such as game theory and experiments. Results from economic studies have protected our savings, fostered efficient production, led to deregulation of industries, and provided answers to complex relations that have had an impact on health financing and consumer protection. Other studies of monetary and fiscal policy, labor markets, environmental systems, and the regulation of transportation, communication. and energy has, by influencing public policy, contributed to economic growth.

Nobel Prize winner James Heckman of the University of Chicago has conducted extensive empirical research on the effects of job training. A key finding is that the amount of job training necessary to have a substantial impact on income inequality would be enormously expensive. He concludes that intervention directed toward the young and their families is likely to be more effective in reducing income inequality.

It had been thought that currency crises were caused when monetary authorities expanded their money supply faster than the foreign money supply to which their currencies were pegged. However, most of the countries involved in the Asian crises of 1998 did not expand their monetary policy until after the crisis. This new pattern and its ramifications for policy have been explored in NSF-sponsored research by Maurice Obstfeld of NBER and Sergei Rebelo of the University of Rochester. These discoveries are critical to understanding the sources of currency crises and the behavior of the domestic and international economy following the crises.

Entrepreneurship is driving the new economy. SBE supported research by Patricia Greene and her colleagues at the University of Missouri, Kansas City, has examined the relationship between race, gender,

and business start-ups. Recent data reveal, contrary to common perception, that Blacks are approximately twice as likely as Whites to be new entrepreneurs. Also, approximately two-thirds of all new businesses are housed in the residence of one of the proprietors. The data also show that new entrepreneurs tend not to be unemployed people who are inaugurating a new commercial activity. Instead, they are busy, employed persons who are taking on another activity to add to their already full schedule.

NSF-sponsored researchers have investigated and revealed the particular ways in which social and value dimensions infuse science and expert knowledge in the areas of environment, risk, biotechnology, and information technology. This research has shed light on the relationships between expert and non-expert knowledge and analysis in reaching public decisions in these areas, and has shown how inclusion of various non-expert communities can assist in the design and development of technology, especially information technology.

Andrew Gelman of Columbia University has produced important innovations in the modeling of geographic variations that have direct applications to assessing environmental hazards. He applies these methods to understanding the geographic distributions of radon levels and the extent to which they are associated with characteristics of geology and house construction. State environmental agencies have used this information, and it is available on the World Wide Web to homeowners, who can enter local information to decide whether to measure their houses for radon gas.

Early work on public opinion and voting emphasized the lack of information and involvement of the average citizen. More recent NSF-supported research has explored how citizens can overcome their shortcomings to reach reasonable decisions without expending extraordinary effort. Milton Lodge of SUNY-Stony Brook, Paul Sniderman of Stanford, Robert Huckfeldt of Indiana, and John Sprague of Washington University at St. Louis have shown how particular cognitive shortcuts in the presence of existing political networks, information flows and group processes enable even relatively uninterested individuals to reach reasonable conclusions about their political choices.

Judith McGaw of the University of Pennsylvania has studied the history of those technologies of the home, leisure, and work with which women most frequently have been associated. Her research results are of special interest to archeologists and students of material culture, who often find the common household objects of distant times among the most difficult to interpret.

SBE-funded scholars have been investigating how developments in biotechnology over the past twenty years have generated changes in the structure and funding of university science, new relationships between the academy and industry, and powerful technologies that are beginning to affect the lives of all Americans. The pace of research and technological change in biotechnology poses especially vexing problems for institutions of law, politics, and science, which often can adapt only reactively to novelty. Michael Fortun of Hampshire College has applied the techniques of ethnographic fieldwork to the study of a number of the new and rapidly growing firms that are researching the human genome and exploiting genomic knowledge. His nearly completed book may well become an exemplar of the ethnographic study of science.

NSF-funded economists have produced much of the scientific evidence on how educational policy reforms including school vouchers, charter schools, and property tax reforms that equalize spending across school districts affect student performance. Massachusetts, Michigan and New Hampshire have recently changed their systems of education finance in directions influenced by these research findings.

Robert Hummer of the University of Texas, Austin and Richard Rogers of the University of Colorado have researched U.S. immigrants' mortality differences associated with their country of birth. They show that foreign-born members of all racial and ethnic groups exhibit lower mortality than native-born persons across nearly all ages and causes of death. This finding puts a spotlight on ethnic differences in later generations: the paradox that those born in this country are so clearly disadvantaged in health outcomes.

Cheryl Elman of the University of Akron has studied the effects of midlife education on adult's working lives. She shows that although early educational attainment has strong effects on people's early work careers, it is mainly midlife education and training that protects middle-aged or older workers from job loss and offers chances for job mobility. She also shows that midlife education is pursued by African Americans as a strategy to reduce disadvantages in the labor market. These findings offer strong support for private decisions and public strategies to increase midlife education for older and minority workers.

Joseph Gastwirth of George Washington University has developed statistical measurement procedures that can improve measurement of such diverse phenomena as the unemployment rate, group screening as a method of checking blood supply in a blood bank, and use of evidence in the settlement of EEO cases. The EEOC has made use of this new procedure.

Many government agencies require data on small geographic areas in order to decide program funds allocations or to formulate regional plans. Obtaining estimates for small areas is a difficult statistical problem because most surveys are designed to provide estimates only at a higher level of aggregation. Research conducted by Gauri Datta of the University of Georgia, Malay Ghosh of the University of Florida and P. Lahiri of the University of Nebraska, Lincoln has produced significant advancements in the ability to develop such small-area estimates. The Census Bureau and DHHS are interested in these methods, as are national agencies in other countries.

Other Issues

COSSA supports increased funding for the Graduate Research Fellows program. It is time to provide the funds to increase the stipends to make them competitive with other federal agencies' graduate fellows. The enhanced stipends should not occur with a corresponding reduction in the number of these prestigious, portable, student-controlled fellowships for graduate training.

COSSA also strongly supports continuation of the Interagency Education Research Initiative (IERI), a collaboration among the NSF, Department of Education, and the National Institute of Child Health and Human Development. The IERI provides significant support over a period of time to conduct meaningful studies of factors affecting student achievement and to seek and disseminate answers to how we can improve.

Conclusion

NSF remains an important source of federal support for research in the social, behavioral, and economic sciences. It provides close to one-third of all federal support for these disciplines; over 60 percent of the support for academically-based basic research in the social sciences; and over 90 percent in such areas as archaeology, linguistics, and political science.

We urge the Subcommittee to significantly boost support for the National Science Foundation in FY 2002. NSF will then provide the fundamental research that will help the world stay healthy, prosperous, and secure. In addition, with this increased funding the Social, Behavioral and Economic Sciences Directorate can strengthen its ability to meet the needs of this country and the world for evidence based policies to help work on the complex problems affecting us all.

Thank you for the opportunity to present our views.