

Testimony to the U.S. House of Representatives
Committee on Science, Space, and Technology
Subcommittee on Research and Science Education

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Thank you for the opportunity to speak to the Subcommittee on Research and Science Education on the question of why social, behavioral, and economic sciences are important to the physical and life science communities, to the Federal government, and to the American taxpayer.

I am speaking today both as a social scientist who has benefitted from National Science Foundation funding and as the head of the National Association of Scholars, an organization whose membership includes more than five hundred social and behavioral scientists and economists, most of them senior scholars at colleges and universities. A few years ago, I resigned from a tenured position teaching anthropology at Boston University, and I am no longer pursuing funded research in my discipline. But as president of the NAS, I work with many people who are active in social science research and who depend to varying degrees on federal funding to carry their work forward.

The National Association of Scholars takes a broad view of the relationship between the academy and society. Our members are aware of the federal government's deep deficits and the overall need for budget cuts. We expect that the social sciences will have to bear their share of the financial stringency. The national interest in closing the gap between federal revenue and federal spending is rightly the priority of this Congress, and we know that will mean cuts to some important programs.

Our major concern—*my* major concern—is that these cuts be made shrewdly. The social, behavioral, and economic (SBE) sciences should not be x-ed out completely from the budget of the National Science Foundation or other federal agencies. I will speak mainly of NSF programs, which I am more familiar with than programs run by other agencies. A great deal of NSF funding in the SBE disciplines goes to projects that are intellectually worthy. Only a small portion, in my judgment, is diverted to trivialities or is channeled to programs on the basis of their political appeal rather than their scientific merit. Of course, if funding for the SBE disciplines is to be trimmed, the place to begin is with those trivialities and politicized programs. But even if all these could be properly identified and statutory language could be written and passed that prevented similar abuses in the future, cutting them would probably fall short of what is needed. I expect Congress will have to go further and cut NSF funding for SBE research that has substantial merit. What we need is a principle for triage. Among all the worthy projects in the SBE disciplines, which ones stand out as most in need of NSF funding?

I have six suggestions. But before I get to those, I would like to offer a brief statement of my overall view and I would like to tackle the questions with which Chairman Brooks framed his invitation to me.

My overall view is this: the National Science Foundation was created to advance basic research. That was a good idea for the United States at the time and it remains so today. We need basic research not least because it is the deep source of almost all our technological and economic progress. The greatest advances have come not from researchers looking for better ways to build mousetraps but from researchers who are, so to speak, more interested in the mice. When Watson and Crick discovered the structure of DNA, they knew they had achieved something intellectually big, but its practical implications were invisible and it took decades before that discovery led to the miracles of genetic engineering we have today.

Examples of the long-term benefits of basic research in the natural sciences are more familiar than examples in the SBE sciences, but there too the liberal arts approach of pursuing the answers to the hard intellectual questions rather than the tempting practical ones has paid off. My discipline, anthropology, grew largely out the amateur investigation of an upstate New York lawyer, Lewis Henry Morgan, who in the mid-19th century took an interest in the kinship terminology of the local Seneca Indians. From Morgan's work grew the whole enterprise of studying kinship and marriage patterns as the key to understand social structure in all human societies. Or to take another example, Adam Smith was not looking for ways to improve the manufacture of pins when he observed how the division of labor in pin factories led to efficiencies unavailable to the solo worker. Smith's observations presented in *The Wealth of Nations*, however, led to the very practical discipline of economics.

If we take the long view, investing in basic science pays off, even in the softer-seeming social sciences. And if we stick with that longer view, it is the near-term practical research that typically proves to have a short shelf-life.

Let me turn to Chairman Brooks' questions. He asked me:

Why are social, behavioral, and economic sciences important to the physical and life science communities, to the Federal government, and to the American taxpayer? How does basic research in the social and behavioral sciences advance the scientific community? How does it serve the Federal government? How does this research advance or affect the lives of the general population today?

To start, the social, behavioral, and economic sciences are important to the physical and life science communities because they illuminate the human condition. The life sciences are especially intertwined with the SBE sciences. Humans are a complex social animal. Our social complexity and our biological complexity are inextricable. We are equally biological and social organisms, and neither one side nor the other can be understood in isolation.

I realize how abstract this sounds. To bring it down to earth, think of transnational adoptions, which are now quite common in the United States. A little further on in these remarks I will have something to say about an NSF-funded research project that deals with transnational adoptions, so this is by no means a

hypothetical case. We know from practical experience that infants adopted from abroad become culturally American with no special effort on the part of the adoptive parents. To the contrary, many adoptive parents try hard to give their adoptive children some sense of the culture and heritage they left behind, and it is not uncommon for these children as young adults to go abroad in search of their birth relatives and some sense of their cultural heritage. Biology matters to them; so does culture; and yet these sought-for links often prove very disappointing. The longed for connection just fails to materialize.

We are a species that thrives only in families, but families are a social reality that the social, behavioral, and economic sciences bring into focus. Our in-grained ability to form stable pair bonds between men and women requires social form, as does our need to provide nurturing mothers and fathers to our offspring, who in comparison to all other animals, require an extraordinarily long period of dependent immaturity. That period of dependency is when we acquire most of what we call culture, and it is nearly impossible to un-do it, though we can add layers on top.

The complexity of these phenomena lies in the combination of necessity and fluidity. We cannot thrive without family and parents, but biology doesn't supply us with a single answer. Robins build their nests the same way every time. Human families differ dramatically from culture to culture. If we want to understand who we are, we have to achieve the stereoscopic view that captures the biologically essentially and socially contingent, and we have to grasp the power of that contingency.

Studying contingency might be the very definition of the social, behavioral, and economic sciences. I start with the example of the family because kinship is one of my anthropological specializations. But the stereoscopic vision is required in almost everything in the human condition. Our bodies have amazing capacities to develop and adapt, as well as all manner of frailties and susceptibilities to disease. Body mechanics and medicine can illuminate some of these strengths and weaknesses, but the full picture requires us to see how strengths flourish in response to social incentives and how our susceptibilities grow out of lifestyles. We gained susceptibility to tuberculosis because our ancestors domesticated cattle. We get sick with the flu because our ancestors domesticated chickens. Diseases that jump the species barrier are a biological fact, but these jumps occur in social contexts. The SBE sciences help us understand that context. The NSF's Ecology and Infectious Disease Program provides necessary funding to pursue this science.

Our frailties and diseases illustrate one of the intersections between life sciences and social sciences, but so does our positive capacities for complicated divisions of labor and our skill in creating mutually profitable exchange. We need the science of economics to trace out the complexity of specialization and exchange, but we need neuroanatomy and cognitive science to understand how specialization and exchange are even possible. No other animal has more than the barest rudiment of these abilities. Understanding them requires the SBE fields as much as it does physical and life sciences.

Finally, our capacity for language, our ability to form communities, and our susceptibility to breaking communities apart are at the center of this zone where social scientific investigation meets human

biology. The NSF's program "Documenting Endangered Languages" is one way in which we rescue key knowledge in this area from historical oblivion.

I have ventured an answer to the first part of the first question, "Why are social, behavioral, and economic sciences important to the physical and life science communities?" But Chairman Brooks also asked why SBE sciences are important "to the Federal government, and to the American taxpayer?" Clearly some matters may be important in their own right but not important to the Federal government or to the taxpayer. The usual defense of the social, behavioral, and economic sciences is that they offer practical benefits. I am not going to pursue that argument any more than in my suggestion that seminal research—such as the research of Watson and Crick, Lewis Henry Morgan, or Adam Smith—often proves fruitful in the long term. The SBE sciences may indeed produce some shorter term practical benefits, but I don't think that is why the Federal Government should fund NSF programs in these areas or what the taxpayer should expect from research in SBE. If we wanted those practical benefits and are convinced that social science can deliver them, it would be better for Congress to appropriate funds specifically for *applied* social science.

The better reason to fund the SBE sciences through the NSF is to sustain scientific excellence. Science of course is not a single enterprise. Astronomers, chemists, biologists, physicists, geologists, etc. use dissimilar methods and count successes in different ways. Add in the SBE sciences and the picture is still more various. But behind all this variety is the shared quest to understand nature and our place in it. In that sense, we can have only one real standard. We need science that advances us towards seeing the world at every scale as it really is. A science that looks at only large things like galaxies or only at tiny things like DNA would be drastically incomplete. We need to keep humanity in the picture, and we fall far short of the mark if we treat the quest for understanding our own species as merely a hitchhiker on the physical sciences. We need excellence in the SBE sciences too. Without a national commitment to such excellence, we will end up with a hollow civilization: one that values knowledge of the mechanics of things disconnected from our knowledge of ourselves.

Moreover, a major retreat from the SBE sciences on the part of the NAS would simply accelerate the politicization of these fields. But I will have more to say on this below.

Chairman Brooks also put to me the questions, "Why is it in the American taxpayer's interest for the Federal government to fund all disciplines within the SBE sciences? How should the Federal government prioritize funding for SBE research? How should NSF, specifically, prioritize funding for SBE research?"

By way of answer to all of these questions, I want to offer the six suggestions I alluded to before. But I want to be clear from the outset. I don't believe that it is in the interest of the American taxpayer for the Federal government to fund *all* disciplines within the SBE sciences. We face the need for cuts and we have to find intelligent ways to make them. That may mean suspending funding in some disciplines.

First, Congress should pay attention to non-governmental sources of funding. Some areas of research already attract substantial financial support from international agencies, foundations, private-donors, and for-profit enterprises. There is no reason to think that these funding sources have been exhausted.

Scholars who work in the areas could, if faced with a decline in funding through the NSF, potentially find substitute sources of support.

Second, Congress should pay attention to the oversupply of SBE Ph.D.s in the labor force. Each year our universities award advanced degrees to many more people in these fields than there are opportunities for employment that require such credentials. One result of the surplus is that colleges and universities rely more and more on adjunct faculty members, part-timers who are typically paid extraordinarily low wages and whose relationship with students is transitory and transactional. The oversupply problem has a cascade of other negative social consequences, but I'll limit myself to just one: producing this surplus of specialists is a tremendous waste of resources. And NSF is one of the culprits. It supports graduate students in SBE fields through its graduate fellowships, and again in grants to support the writing of Ph.D. dissertations. I would by no means recommend cutting these entirely, but it is clear that NSF currently incentivizes people to pursue careers in fields in which there are meager opportunities.

Third, Congress should pay attention to the rise of anti-scientific ideologies within SBE disciplines. In my field of anthropology, for example, a recent controversy has highlighted this division. The weekend before Thanksgiving, at the closing of the annual convention of the American Anthropological Association (AAA), the organization's Executive Board discussed a long-range plan that would alter the AAA's mission statement. The new mission statement deleted the idea that anthropology is a science. It also blurred the intellectual boundaries of the discipline and, ironically, inserted a stronger warrant for using anthropology to engage in public advocacy.

In the weeks and months that followed, as word reached the rank and file, a heated debate ensued. One section of the AAA, the Society for Anthropological Sciences, took strong objection to the jettisoning of "science" from the organization's mission and many individual anthropologists seconded that dissent. The AAA's leadership back peddled to a degree and declared that its purposes had been misunderstood. But the incident was not an innocent misunderstanding. A substantial number of anthropologists do not regard their discipline as a science. They see "science" itself as a label or at most one path to knowledge among many that anthropology should avail itself of.

The kerfuffle over the AAA's mission statement has its counterparts in many other social sciences. We have lived through an era in higher education in which the social sciences have been profoundly influenced by ideological and philosophical developments that are at odds with science. Post-modernism brought into the social sciences the view that truth is just a social construct. Different people have different truths, and that claims that something is true mostly reflect efforts to dominate and to exercise power. This view is inimical to genuine scientific research but it lends itself handily to more free-form styles of investigation and it is comfortable with research tied to political goals.

I hasten to add that I am not saying that views such as these should be blocked or that the scholars who promote them don't have the right to express their views. They of course enjoy academic and intellectual freedom. But academic and intellectual freedoms don't come with a presumptive right to Federal funding.

Looking at actual awards granted by the NSF over the last few years, I would say NSF generally steers clear of funding research that openly embraces postmodernism or its equally anti-scientific variants. But it isn't always easy to tell. Researchers who seek federal funding from a science agency usually know enough to present their work as scientific in spirit even if at a deeper level it is not.

For instance, I see that the NSF granted \$200,000 last year for a project titled, "Transnational Adoptees and Migrants: From Peru to Spain." The awardee is looking at Peruvian immigrants to Spain, and Peruvian children adopted by Spanish families. The abstract of the study claims scientific merit in "bringing the two kinds of population movements into comparison with each other." And the researcher will learn from this how "to elucidate common and differentiating factors in the countries of origin and destination; how the two may interact, particularly with regard to integration into the receiving country; and how the identities and experiences of young immigrants are affected by being either adopted or part of labor-migrant families." The research is to be conducted through "participant-observation, semi-structured focus group interviews, and semi-structured interviews with individuals and families."

I do not know the lead investigator, Dr. Jessaca B. Leinaweaver of Brown University, or anything more about the project than what NSF has posted. I can imagine that it has genuine scientific merit. Demography is an important field, and international population movements bear on a lot of issues we must deal with as a nation. But I must register a doubt. Though both involve people crossing international boundaries, transnational adoption and immigration of adults are pretty disparate topics. The connection between them as stated in the abstract seems entirely rhetorical, and the method of investigation unlikely to yield much beyond impressionistic interpretations.

Dr. Leinaweaver's research is by no means outside the mainstream of contemporary cultural anthropology, but that may be a signal of the underlying problem. It has become much more difficult to distinguish scientific investigations in the social sciences from other forms of research. This is not to say those other forms of research always lack merit. If a researcher sets out on a program of historical, humanistic, or interpretive study, however, the NSF is probably not the best source of funding. Taxpayers of all points of view are being asked to subsidize the research of those with a particular point of view. If the particular point of view does not have special standing as a matter of science, it is hard to see why it should enjoy any special subsidy.

Fourth, Congress should cut funds wherever they are being used by NSF to advance non-science agendas. This is an area fraught with controversy that could distract from other points, so I will leave it as a general principle. The purpose of NSF is to advance science, not one or another person's views of social justice.

I would, to start with, recommend de-funding the programs that support "transforming education" and "ethics." These are not scientific endeavors. They are, fairly openly, political undertakings. For example, the NSF's 2009 grant of \$299,000 for a project titled, "Engineering and Social Justice: Research and Education of (In)commensurable Fields of Practice," is framed entirely within the perspective of

advancing a politicized view of the field of engineering. To underscore this, I quote the project abstract in its entirety:

This project, supported by the Ethics Education in Science and Engineering Cross-NSF program, investigates the relationship between engineering and social justice. Given the global challenges of the 21st century, engineering educators are implementing innovative ways to prepare tomorrow's engineers—including programs and courses in community service, sustainable development, and humanitarian engineering. That engineering students might be enacting various forms of social justice in these programs and courses raises important questions. How are engineering students interpreting social justice? How do those interpretations intersect with their education as engineers? What might engineering and social justice have in common? In which ways have these two fields of practice aligned, clashed, or interfaced in recent US history? How and why should relevant dimensions of social justice be effectively taught and disseminated throughout engineering curricula?

The main goal of this project is to research these questions and develop educational resources aimed at relevant connections between engineering and social justice, allowing for various interpretations of social justice. To achieve this goal, the project researches historical and ethical connections between engineers and social justice. Furthermore, given the surge in university programs related to community service and humanitarian engineering, the project contributes by developing relevant instructional case studies. The project will also result in a book about Engineering and Social Justice with chapters exploring the social-justice dimensions of engineering during the New Deal, radical and non-radical engineers in the 1960s, engineers of appropriate technology, engineers of sustainable development, and engineering to help. Primary project partners and audiences include engineering faculty and students, engineers in organizations actively pursuing social-justice goals, and a growing network of engineering educators interested in social justice issues. This project stands to have a broad impact by increasing recruitment and retention among US engineering students, particularly women and underrepresented groups, as students become more concerned with the social relevance of their careers.

I imagine Congressmen can and will have differing views on the worthiness of this vision of education for engineers, but it seems plain that the project is in no way an effort to advance scientific understanding.

Fifth, Congress should beware funding for projects that slip too easily into contemporary policy debates. The projects need not be carrying a political ballast to fall into the realm of questionable places for the taxpayer to invest resources. The problem is that social science research all too easily gets dazzled by the prospect of practical application and researchers find themselves drawn to take sides in policy debates. Do we want social science that helps us hack through the thickets of data to clarify complicated social problems? I think we do—and the place for that research is in policy-oriented think tanks, commissions, and programs set up for specific purposes. An agency created to fund basic science is the wrong place through which to fund work that aims to contribute to public policy discourse.

I realize my view must sound very odd to some members of Congress who have abundant experience hearing from academic experts about the potential practical rewards of policy-oriented research. I must re-emphasize that such research is frequently worthwhile, but that locating it in the National Science Foundation is a mistake. It is mistake because it competes with and crowds out research that is more fundamentally important; it is a mistake because there are almost always interest groups willing to fund such research without using the taxpayer's dollar; and it is a mistake because the research itself is likely to be compromised along the way.

For example, in March of this year NSF awarded \$148,000 for a project titled, "Out From the Shadows: The Lives of Immigrants Before, During, and After Legalization." The project consists of "qualitative research to examine the experiences and outcomes of immigration legal status change among Mexican immigrants to the U.S." The researcher aims to "complement macro-level quantitative studies of new legal immigrants by contributing person-centered qualitative data on legal stages of naturalization from the point of view of immigrants themselves." And the study focuses on people selected from four categories: "immigrants who anticipate changing their legal status from undocumented to legal permanent resident, those who have recently changed their status, those who adjusted their status ten or more years ago, and naturalized U.S. citizens."

I don't see this research as necessarily politicized. The researcher has not openly declared a view on whether illegal immigrants to the U.S. should be granted legal status. The researcher herself, however, is explicit that the project is intended to be "a timely contribution to local and national policy debates about immigration programs." And the thin line between making a contribution to social scientific knowledge and advocating for an interest group gets even thinner: "This study can provide important information for organizations and agencies that provide support and resources to legalizing immigrants." What about taxpayers who don't want to "provide support and resources" for illegal immigrants? Regardless of one's views on that question, it is hard to see this research as disinterested. In fact, the research has very thin justification outside those policy debates. The researcher falls back on what amount to a series of social science clichés:

This project will advance research in an area that is of critical importance to wider considerations of nationhood, citizenship, transnational migration, and globalization. Furthermore, the research will document the challenges that immigrants face during and post-legalization, and how these challenges may be experienced with respect to characteristics such as gender, ethnicity, and class.

The slope is too slippery to bear more than momentary weight. When the NSF funds such policy-oriented research, it is on the road to making policy on its own—in fields far beyond science.

Sixth, Congress should consider the larger picture of the changing nature of American higher education. The lion's share of science funding from the Federal government goes to researchers who are faculty members at research universities. Another large share goes to graduate students at these universities. I have already pointed out that the nation has an over-abundance of Ph.D.s in the SBE sciences. We may also have other excesses. Undergraduate students in larger and larger numbers are opting to pursue

post-secondary education in community colleges and online institutions that have no commitment to research, and undergraduate students at four-year institutions have been steadily migrating to fields such as business, health, communication, and education. The nation's emphasis on university-based research in all of the sciences is, at the very least, vulnerable to recalibration. I would take it as a serious loss for the nation if we recalibrated ourselves all the way out of a serious commitment to SBE research, but I do think that we could make cuts that would leave room for the essential work to continue.

I appreciate having had this opportunity to address the committee.

Peter Wyatt Wood

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He is the author of two books, *A Bee in the Mouth: Anger in America Now* (2007) and *Diversity: The Invention of a Concept* (2003), which won the Caldwell Award for Academic Leadership. His essays on American culture and higher education have appeared in *The Chronicle of Higher Education*, *Partisan Review*, *The Claremont Review of Books*, *Society* and other journals.

He serves on the New Jersey State Advisory Committee to the U.S. Commission on Civil Rights. He previously served as a volunteer instructor in the Boston University Prison Program and on the Advisory Board of the Institute for Religion and World Affairs. He is a member of the American Anthropological Association, the American Ethnological Association, the American Association for the Advancement of Science, and the Philadelphia Society.