

Projects and Studies Update

At a morning briefing for new members, held on October 10, 2009, leaders of Academy projects and studies presented updates on their work.

Initiative for Science, Engineering, and Technology



Neal Lane

Neal Lane is Malcolm Gillis University Professor at Rice University. He was elected to the American Academy of Arts and Sciences in 1994 and serves as a member of the Academy's Council.

The Academy's Initiative for Science, Engineering, and Technology includes several current and emerging projects, such as Alternative Models for the Federal Funding of Science, whose *ARISE: Advancing Research In Science and Engineering* study was released in 2008. *ARISE*, like many Academy efforts, is concerned with understanding and offering solutions for current problems in higher education. Another example is the Science in the Liberal Arts Curriculum project directed by Jerrold Meinwald of Cornell University and John Hildebrand of the University of Arizona. They are investigating questions such as: What do we think university students really ought to learn about science? What science content should be taught in the liberal arts curriculum? What are the existing goals for this curriculum? Are they appropriate? Are they being met? Provosts, deans, and academic leaders from across the country have been invited to contribute to this project, which will result in a collection of case studies that should help us better understand what's going on, how effective it is, and what we might do better in the future. The outcomes and conclusions of the study will soon be shared with the larger community.

A third project, Scientists' Understanding of the Public, aims to consider the obverse of something we often talk about: the public's understanding of science. If researchers are to do their work and have it properly impact society, scientists, engineers, and technical professionals must understand those impacts and how people think about and respond to new developments in science, engineering, and technology. This project will present a series of case studies contributed by a cross-disciplinary and cross-sectoral community of scientists, journalists, policy-makers, and others.

As the Academy pursues efforts like the Initiative for Science, Engineering, and Technology, two core strengths allow us to explore topics in ways that few other organizations can: the Academy is fully independent and interdisciplinary, and Academy Fellows represent all disciplines and professions.

A fourth project, Securing the Internet as Public Space, is, like the Initiative for Science, Engineering, and Technology, part of the Academy's larger program on Science, Technology, and Global Security. The Internet as Public Space project seeks to explore options for the future of the Internet. As choices are made about the evolution of this extraordinary global commons, how will commercial and governmental interests in controlling the rules of its use be balanced with the needs and rights of individual users around the world? The Internet project is led by David Clark of MIT

and involves computer scientists, lawyers, technology and policy specialists, and scholars from academia, business, and government.

As the Academy pursues efforts like the Initiative for Science, Engineering, and Technology, two core strengths allow us to explore topics in ways that few other organizations can. Unlike many organizations, the Academy is fully independent and interdisciplinary. Academy Fellows represent all disciplines and professions, encompassing both the academy and the business sector and stretching from the sciences to the humanities to the arts, including the performing and visual arts. By bringing together representatives from these different constituencies, we can add value to whatever discussion is important at the time. And we can explore niches that might be overlooked elsewhere. ■

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Initiative for Science, Engineering, and Technology



Randy Schekman

Randy Schekman is Professor of Molecular and Cell Biology at the University of California, Berkeley, and an Investigator at the Howard Hughes Medical Institute. He was elected a Fellow of the American Academy of Arts and Sciences in 2000 and serves as a member of the Academy's Council.

Many of us who started our careers in the life sciences back in the 1960s and 1970s routinely received funding grants while we were in our late twenties and early thirties. But now the training of young investigators takes so long and the struggle to get funding has become so difficult that many are almost into middle age before they receive their first independent grant. The average age of a new National Institutes of Health (NIH) grantee is now forty-three. This is an alarming trend.

The Academy's Committee on Alternative Models for the Federal Funding of Science, chaired by Tom Cech, a Nobel laureate and former head of Howard Hughes Medical Institute, was formed to analyze current science-funding policies. But rather than focus on the issue of increasing the pot of money available for funding, we focused on the funding mechanisms the granting agencies use to evaluate funds for early-career scientists and for scientists who engage in high-risk, high-reward research. (As the study developed, however, and the Obama administration took over, funding, especially for biomedical science, grew substantially.) We interviewed many agency heads and many successful young investigators.

We asked how the agencies were dealing with the issue of innovation and research for beginning career investigators. Some agencies, such as the NIH, have been experimental in their approach to funding. Under the leadership of Elias Zerhouni, the NIH introduced a number of new funding tracks, some of which were successful, others not. We applaud their new Pioneer Award Program, which awards grants to risk takers in biomedical and behavioral

The Office of Management and Budget has written into the relevant federal regulations the very language we encouraged for promoting beginning investigators and high-risk research.

research. Unfortunately, the NIH did not allocate enough money to the program, and out of the first round of applications only 1 percent were successful and there were no women in that group. In a demonstration of their willingness to experiment, the NIH revised the program, and it has gone forward quite successfully. Other agencies have been less experimental, and we have encouraged them to look at the NIH as a model for how they might change their grant-making policies.

Over the period of a year, the committee met many times in Washington, D.C., and San Francisco and came up with a small number of specific proposals. They are all described in the *ARISE* report, which is available online (<http://www.amacad.org/AriseFolder/default.aspx>). We looked at, for instance, the problem of federal program officers' reduced engagement with the academic community. When I began my career at Berkeley many years ago, the program officers hired by the NIH to manage grants and to field questions from investigators were treated as members of the scientific community. They would attend meetings and get to know young, up-and-

coming investigators. Increasingly, budget cuts have limited program officers' ability to travel and so they know fewer young investigators. We feel that a simple and relatively inexpensive solution to this problem would be for federal agencies to review their program officers' travel funding and to encourage them to become more visible in the academic community.

We also encourage universities to consider more carefully how promotions are evaluated, to try to get away from counting publications and instead to consider the impact of work. We also recommend that universities not rely on growth in the NIH budget to expand the faculty base without a matching investment of funds in the research enterprise. During the doubling of the NIH budget, for instance, many universities decided to capitalize on the increase in funds by constructing new buildings but did not provide new faculty with the resources necessary to sustain their programs. Thus, construction consumed a disproportionate amount of many universities' share of NIH money.

The committee's work will be valuable only to the extent that it has impact. I am pleased with the kind of impact the *ARISE* report has had. The report generated wide media coverage, including a number of op-ed pieces in newspapers. Tom Cech made a presentation about it at the National Press Club, and in the year since it was issued Congress has embraced its lessons. The Obama administration has also been highly supportive. The Office of Management and Budget has written into the relevant federal regulations the very language we encouraged for promoting beginning investigators and high-risk research. And we are particularly pleased that committee member Steve Chu was selected as Obama's Secretary of Energy. In his new position, Steve has been able to introduce the Department of Energy to the concepts developed by the study group.

The relatively small amount of work we have done thus far has had a disproportionate impact, and we are encouraged to go forward. Neal Lane and several others of us are engaged in the next phase of the project,

what we call *ARISE II*, which will focus even more on the responsibilities of the university. For example, we wish to encourage universities to reconsider how they allocate salary supports and fund building projects and not to rely exclusively on federal funds. This will be a challenge. We will try to engage university presidents, who I am sure will have a different point of view. But I think *ARISE II* can have a significant impact. I encourage each newly elected member to this august body to think seriously how he or she can contribute to this effort and to ones similar to it. Your efforts will add meaning to the honor of membership in the Academy. ■

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The Global Nuclear Future



Scott D. Sagan

Scott D. Sagan is Caroline S.G. Munro Professor of Political Science and Codirector of the Center for International Security and Cooperation at Stanford University. He was elected a Fellow of the American Academy of Arts and Sciences in 2008.

Concerns about climate change, the volatility of oil prices, and the security of energy supplies have all combined to create what some individuals have called a renaissance of interest in nuclear power around the world. The Academy's project on The Global Nuclear Future has a single goal: to reduce the risk that the spread of nuclear power will create security dangers, such as increased nuclear weapons proliferation or nuclear terrorism.

Although the term *renaissance* and the phrase "spread of nuclear power" are often used, we should differentiate between the expansion of the use of nuclear power in states that have nuclear power today and the potential spread of nuclear power to new countries. Some thirty countries have nuclear power plants today, and some of these are considering adding more. Another fifty states are interested in developing nuclear power programs and have asked the International Atomic Energy Agency (IAEA) for assistance in conducting the studies needed to initiate such a program in their own country (see Figure 1). Even more interesting than the sheer number of new aspiring nuclear states is their geographic distribution: more than half are from the developing states in the Middle East, Africa, and Latin America. If we contrast the characteristics of aspiring nuclear power states with those of existing nuclear power states, we see that with respect to governance, the control of corruption, political stability (as measured by the probability of a government falling because of domestic political violence), and regulatory quality (as measured by the World Bank), the aspiring states all have significantly weaker records in those categories that would influence their ability to manage nuclear power in a safe and secure manner (see Figure 2). We have al-

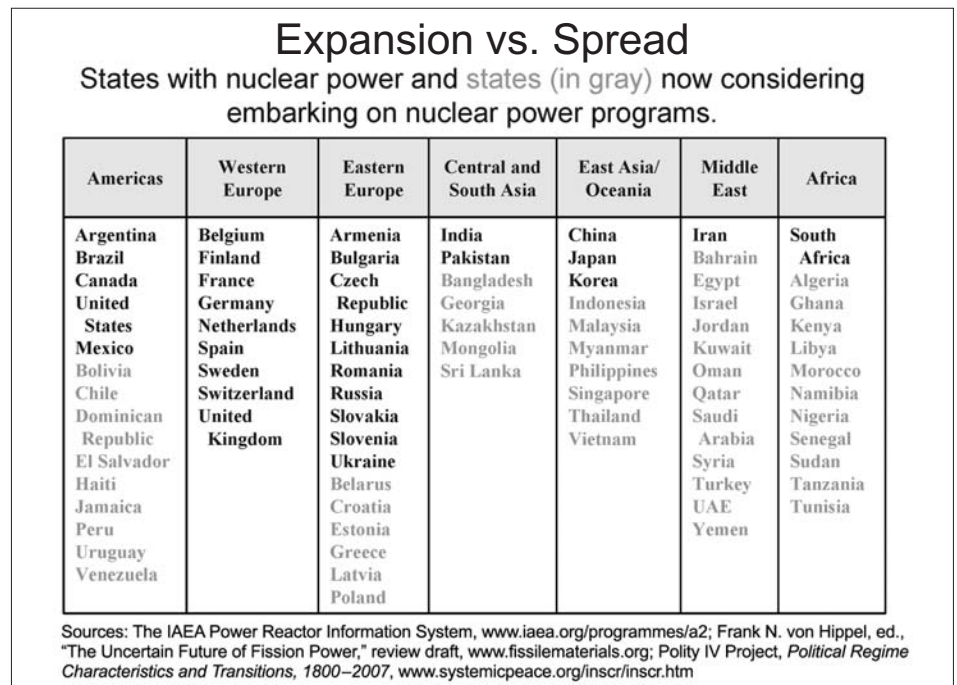


Figure 1

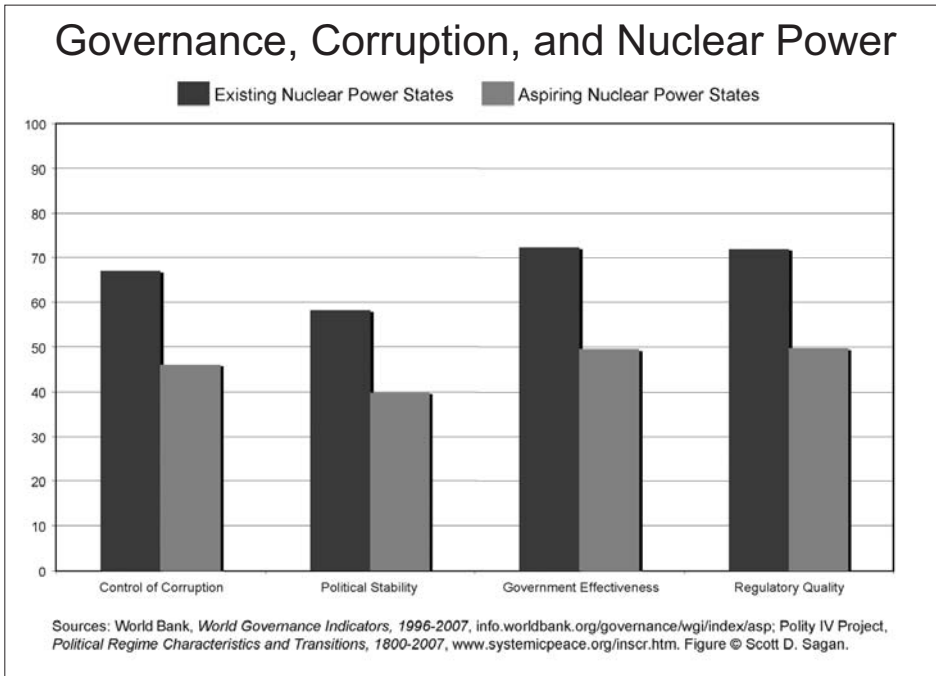


Figure 2

Nuclear Power and Terrorism

Incidents of terrorism in past five years, current nuclear power states		Incidents of terrorism in past five years, current and aspiring nuclear power states	
India	4,462	India	4,462
Pakistan	3,697	Pakistan	3,697
Russia	1,302	Thailand	3,301
Spain	313	Israel	2,775
France	277	Russia	1,302
United Kingdom	220	Philippines	1,061
Iran	56	Sri Lanka	700
China	31	Turkey	403
Mexico	29	Algeria	328
Ukraine	25	Spain	313

Source: Worldwide Incidents Tracking System, National Counterterrorism Center (NCTC).

Figure 3

ready seen the dangers posed by the A. Q. Khan network in Pakistan and the problems corruption can cause in countries that have nuclear power or nuclear weapons. Issues such as these will become even more of a challenge if more countries acquire nuclear power.

We can't predict which of the countries that currently aspire to nuclear power will actually be able to acquire the necessary technol-

ogy, but financial constraints will almost certainly reduce the number over time. Nevertheless, some countries have already begun – and others will soon begin – negotiations for contracts to start nuclear power facilities.

I originally thought we would find that countries aspiring to nuclear power have higher rates of terrorism than do existing nuclear power countries. However, when

we averaged the U.S. National Counterterrorism Center numbers, we found this not to be the case – but only because the high number of terrorist incidents in India and Pakistan over the last five years skewed the data so strongly (see Figure 3). Still, if all of the aspirants join the “nuclear power club,” they will be six of the “top ten ter-

We must work hard to develop new strategies to reduce the risk of nuclear proliferation and nuclear terrorism, for the global renaissance of nuclear power will otherwise produce severe challenges to international security.

rorist risk states.” This result highlights a real problem with the potential spread of nuclear power into more countries: the security concerns raised by having nuclear power in countries with high rates of terrorism. In short, we must work hard to develop new strategies to reduce the risk of nuclear proliferation and nuclear terrorism, for the global renaissance of nuclear power will otherwise produce severe challenges to international security. ■

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The Global Nuclear Future



Steven E. Miller

Steven E. Miller is Director of the International Security Program at the Belfer Center for Science and International Affairs at the Harvard Kennedy School. He was elected a Fellow of the American Academy of Arts and Sciences in 2006.

The Global Nuclear Future project is one of a number of projects that are under the rubric of the Committee on International Security Studies, one of the Academy's standing research groups. This committee has at least a fifty-year history of addressing various security issues, particularly but not exclusively focused on things nuclear.

We are heading into a new nuclear world; it will be different from the one in which we have been living. More nuclear technology will be spread across more places, raising worrisome possibilities that nuclear technology will end up in places that may be hostile, unstable, or unreliable in their management of the technology. The linkage between nuclear power technology and nuclear weapons is inherent and thus inescapable, which raises concerns about nuclear terrorism and nuclear proliferation.

Those of us participating in The Global Nuclear Future project are trying to answer the question "Where do we want to be in twenty to twenty-five years?" What attributes are desirable in a nuclear order in which many more states have access to nuclear power? How can we get there, and what do we need to be doing now in order to make sure that when we arrive we have in place the rules, institutions, arrangements, and norms that will make it possible for us to harvest the benefits of nuclear power with-

out being subjected to the various adverse consequences?

Our goals fall under four headings. First, we would like nuclear power in the future to be safe. Second, we would like it to be secure. Nuclear materials and facilities should be well protected against abuse, misuse, and theft. Third, we would like fuel-cycle arrangements – that is, the provision of nuclear fuel to nuclear power plants – to be limited as much as possible to purely civilian applications and to inhibit the spread of the technologies required to produce nuclear material for weapons purposes. Fourth, we would like the institutional, legal, and normative arrangements associated with the nonproliferation regime to be augmented and adapted in such a way that

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they are adequate to the challenges that we'll face in the future. Many people question whether these arrangements are adequate today. The crises with Iran and North Korea suggest that present arrangements may well be inadequate for the more demanding tasks of the future. Cutting across all four goals is the proposition that the desirable nuclear order, the world in which we want to live, is not going to arise automatically and spontaneously. We have to think about the design characteristics we want, and we have to work to achieve them.

So what are we doing to promote these goals? We have held a series of workshops (and have more to come). We have briefed the White House. We have established ties with the IAEA. We have forged links with the nuclear power industry. We are working with both the World Institute of Nuclear Security and the World Association of Nuclear Operators. We have links to the Office of Multilateral Affairs of the Arab League, trying to help them help their members coordinate their nuclear activities as they go about constructing their own nuclear futures. We have drawn in an international group of collaborators. Finally, Scott Sagan and I organized two special issues of *Dædalus* (Fall 2009 and Winter 2010) that highlight the international character of the problem by presenting the perspectives of a diverse, distinguished, and international group of colleagues. Through these efforts we hope to make at least a small contribution by putting this issue on the agenda, promoting ideas for reducing the risks involved in the spread of nuclear power, and contributing to an outcome that in twenty to twenty-five years we won't regret. ■

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The Global Nuclear Future



Robert Rosner

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Among the countries that currently aspire to nuclear power are several that do not possess the human and technological infrastructure needed to operate nuclear power plants in a safe and secure fashion. Many are simply interested in turnkey operations. They would like to purchase a nuclear plant together with everything needed to operate the plant, including the equivalent of a U.S. Nuclear Regulatory Commission (NRC), over a long period of time. During the time when the plant is being operated for them, they would, one hopes, have sufficient wherewithal to train their own population to operate the plant in a safe and secure fashion.

Might the American nuclear power industry, which traditionally has had a national focus, be interested in engaging in these kinds of contracts? In particular, would they be willing to share their widely recognized capabilities in safely and securely operating nuclear plants? Earlier in 2009 the Academy convened a group of folks from the nuclear power industry – operators and builders, both U.S. and foreign – to discuss these questions. The group agreed that substantial thought should be given to how the U.S. nuclear industry might become more internationally involved.

But the issue is not simply whether American companies should get involved in this

process. Nuclear power industries exist in other countries where the linkage between safety and security is well understood; for example, in Japan and the European nuclear countries. Operators in these countries have expressed an interest in working with states that aspire to nuclear power. We hope in the coming months to expand our discussions to include these non-U.S. operators. In order to do so, however, we will need to figure out how to get all parties in the room to discuss the issues candidly and without fear that they are giving away negotiating tactics or revealing trade secrets that competitors could use to gain advantage.

A number of national labs and universities, American companies both small and large, and U.S. entrepreneurs are thinking deeply about the nuclear future and considering some innovative concepts.

The ongoing nuclear renaissance is an international phenomenon. But is it an American phenomenon? Many would argue no. However, a number of national labs and universities, American companies both small and large, and U.S. entrepreneurs are thinking deeply about the nuclear future and considering some innovative concepts. The current difficulties in getting NRC licensing approval for new types of nuclear fuel and plant designs mean that developing and bringing these new ideas to market is a long process. So it is no surprise that these folks are looking outside the United States to build and innovate, which raises problems of intellectual property rights, as well as export controls on the kinds of things that are necessary to build a plant. The question is how do we address these problems? One approach would focus on the way the NRC operates, that is, to rethink the licensing process and how one might shorten the time the NRC devotes to the licensing process – not by short-cutting

the process, but by applying modern computer simulation and experimental methodologies to this problem area. Another (complementary) approach might be to modify the rules that govern the export of technologies of the sort needed to build and operate nuclear power plants – after all, many of the vendors of nuclear energy technologies are already highly international in character. ■

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Reconsidering the Rules of Space



John D. Steinbruner

John D. Steinbruner is Professor of Public Policy at the School of Public Policy and Director of the Center for International and Security Studies at the University of Maryland. He was elected a Fellow of the American Academy of Arts and Sciences in 1992.

The eight monographs, or occasional papers, released as part of the Academy's Reconsidering the Rules of Space project are intended to stimulate broader public discussion of a range of domestic and international issues raised by the use and exploration of outer space. We recognize that on this subject, as on many others, the U.S. political system is having difficulty balancing the broad array of interests and is having particular difficulty balancing two fundamental principles of space activity: equitable accommodation and antagonistic confrontation. For those who are interested in the dynamics of human belief, this is one of the more interesting sagas, and I encourage all interested parties to think about it. The published occasional papers are designed to provide the basis for doing so.

The papers review some basic facts: Space activity began in the context of Cold War confrontation, and to this day most of the basic activities, rocket technology in particular, are funded through defense budgets. Despite the antagonistic beginning, the physical characteristics of the space environment imposed themselves from the start, and the competing United States and Soviet Union were forced to recognize that one cannot behave in space as antagonisti-

cally as one can in the skies or in the seas or on the ground. In fact, the principal feature that was required to legally and politically enable space activity to occur was that sovereign countries not attempt to extend jurisdiction to orbit. That principle was established by an informal conversation between Nikita Khrushchev and Charles de Gaulle during the Paris Summit of 1960. The occasion was a dispute over U.S. violation of Soviet air rights: the United States had been flying U-2 spy planes over the Soviet Union, a fact the Soviets proved when they shot down one of the planes on May 1, 1960, two weeks before the summit. The Soviet Union insisted on defending its airspace but conceded that it could not extend that defense to space. This critical principle was later formally established in the Outer Space Treaty of 1967. The Treaty allows observation, navigation, and communications

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in space for fundamental military purposes; in other words, it allows all of the operations that are critical to the functioning of modern military establishments under the supposition that those activities will be peaceful as defined in the UN Charter. The Treaty bans weapons of mass destruction but does not mention any specific prohibition on interference. This hole in the regime has long been a problem.

It is physically possible to interfere with assets in space, and doing so has not specifically been declared to be illegal. During the Cold War, although the two antagonists ex-

plored ways of disrupting satellite operations and developed rudimentary capabilities for attacking space assets, neither of them established fully dedicated anti-satellite missions. In 1979, in response to the Soviet invasion of Afghanistan, the United States suspended formal negotiations on expanding the rules of space to ban interference. The negotiations have never been reconvened despite worldwide efforts nearly every year to do so. When the matter comes up in the United Nations General Assembly, the United States, Israel, and the Marshall Islands usually find themselves alone in refusing to issue a mandate to initiate negotiations.

Some in the United States believe that we might want to engage in ballistic missile defense activities in space that would not be consistent with the constraints envisioned by the proposed rules of space. A series of U.S. military planning documents has even asserted the intention to dominate space for national advantage and deny similar capability to everyone else. These attitudes have only stimulated the rest of the world to be even more vigorous about introducing equitable negotiations.

We expect that over the long term, the principle of noninterference will have to be recognized as the fundamental U.S. interest because we operate the most expensive, most sophisticated, and most vulnerable space assets.

The increasingly significant commercial development of space will require a comparable rule against interference. In the very long term, colonization of entities outside our own little planet will be accomplished only if the human species can work as a whole. For the present moment, however, the issue at stake is balancing the principles of equitable accommodation, which are fundamental to the legal regime of space, although not completely articulated, against the impulse for national advantage – a continuing saga that we urge all Academy members to contemplate. ■

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U.S. Policy Toward Russia



Robert H. Legvold

Robert H. Legvold is Marshall Shulman Professor of Political Science Emeritus at Columbia University. He was elected a Fellow of the American Academy of Arts and Sciences in 2005.

The Academy project on rethinking U.S. Policy Toward Russia began in April 2008 under a dual inspiration. The first inspiration was the belief that the U.S.-Russia relationship was far more important and the U.S. stake in that relationship far greater than many people appreciated (and not simply because of nuclear weapons and oil and gas). The second inspiration was a recognition that the relationship, illogically, was in serious disrepair and getting worse. This view was held not only by government officials, members of the public policy world, and university academics but by Carnegie Corporation of New York, a foundation that has put a lot of money into Russian studies and work in Russia. Carnegie Corporation took the initiative both in pushing the Academy to do the project and in funding it.

The Academy is a uniquely appropriate place for the project to be situated: first, because of the national standing of the institution and its independence; second, because of its human resources; and, third, because of its political neutrality. The project is unusual in a number of respects. We began with not one but four working groups, and the project operated under a steering committee of both practitioners and scholars. Also unusual is the multiplicity of products the project has and continues to create. Our purpose was never to move toward an ultimate book or report but to have an ongoing influence from the months before

the 2008 national elections through the unfolding of policy in the new administration and to direct the discussion toward a variety of objectives.

Project activities started with an early strategic assessment of the challenges facing the United States in dealing with Russia, including prospects for improving relations and directions the United States might take. The assessment was then shared with the policy community, a select group of professionals, and the Russians. We also produced a series of memoranda for the administration and the policy community on matters such as the need for a strategic dialogue with Russia, including lessons from past attempts in this direction; the need for a major presidential address on improving U.S.-Russian

How might we successfully conduct a positive agenda toward Russia . . . while at the same time have an independent, supportive, strong policy toward Ukraine, Georgia, and Russia's other neighbors?

relations (a speech President Obama eventually gave in Moscow in July 2009); and, as the administration goes forward with its Russia policy, the need to address a critical conceptual and strategic problem facing the United States: namely, how we might successfully conduct an ambitious, engaged, positive agenda toward Russia, thus achieving the Obama administration's goal of putting the U.S.-Russia relationship on a different footing, while at the same time having an independent, supportive, strong policy toward Ukraine, Georgia, and Russia's other neighbors, particularly in those cases where the relationship between the neighbor and Russia is not strong or healthy or positive.

We held a major conference on March 27, 2009, at the Library of Congress. This day-long meeting on designing U.S. policy toward Russia was co-sponsored by the Aspen Institute, the Brookings Institution, the

Council on Foreign Relations, the Carnegie Endowment, the Woodrow Wilson Center, and the Library of Congress. As this large number of institutions suggests, many other organizations and individuals have also been working on issues related to U.S. policy toward Russia. Our project will recognize some of the best ideas to come from these groups and individuals with a report that surveys the many reports and essays on U.S. policy toward Russia that have appeared in the last six to twelve months.

Information about all of the project's activities is presented on a special page on the Academy's website (<http://www.amacad.org/russiapolicy.aspx>).

Many Academy projects seek to reach multiple audiences. U.S. Policy Toward Russia is perhaps unusual in the extent to which we have actively addressed them, however. For example, I recently spent three days presenting and discussing with senior figures in the White House, Vice President's office, State Department, and Pentagon the study group's memorandum on how to reconcile a U.S.-Russia policy with a U.S. policy toward Russia's neighbors. I and other members of the project's steering committee have been holding similar discussions with administration leaders, as well as the leadership of the Senate Foreign Relations Committee and the House Foreign Affairs Committee, since well before the elections in November 2008. We have also reached out to the engaged public by hosting sessions in Chicago, Los Angeles, San Francisco, Houston, Seattle, and Atlanta for world affairs councils and others interested in U.S.-Russia relations.

On January 29, 2010, we will hold a meeting at the Academy titled "The Policy World Meets Academia: Designing U.S. Policy Toward Russia." We will look at how the work being done in university social science and political science departments can be made more accessible and relevant to the policy community.

Those of us on the steering committee of the U.S. Policy Toward Russia project hope that the project will serve a larger need as well as the Academy has served the project. ■

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The Challenge of Mass Incarceration in America



Bruce Western

Bruce Western is Professor of Sociology and Director of the Program on Inequality and Social Policy at Harvard University. He was elected a Fellow of the American Academy of Arts and Sciences in 2007.

The Academy's work on The Challenge of Mass Incarceration in America involves researchers with backgrounds in criminology, economics, policy analysis, demography, law, sociology, and political science and practitioners, including two heads of correctional agencies, prisoner reentry specialists, and policy reform advocates. We have two main goals. One is to contribute to the public conversation about crime and criminal justice in America. To that end, and with the great support of the Academy, we are in the process of preparing a special issue of *Dædalus* that will summarize a lot of recent research on the problems of crime and criminal justice in America. The second goal is to engage policy-makers and the policy process in a more pluralistic debate by providing a forum for studying and discussing policy alternatives at a time when the public discussion of criminal justice has drifted in a highly punitive direction.

On an average day in the United States, 686 out of every 100,000 residents, or about 0.7 percent of the population, are incarcerated (based on 2001 figures; see Figure 1). For most of the Western European countries, the incarceration rate is about 100 per 100,000,



Figure 1

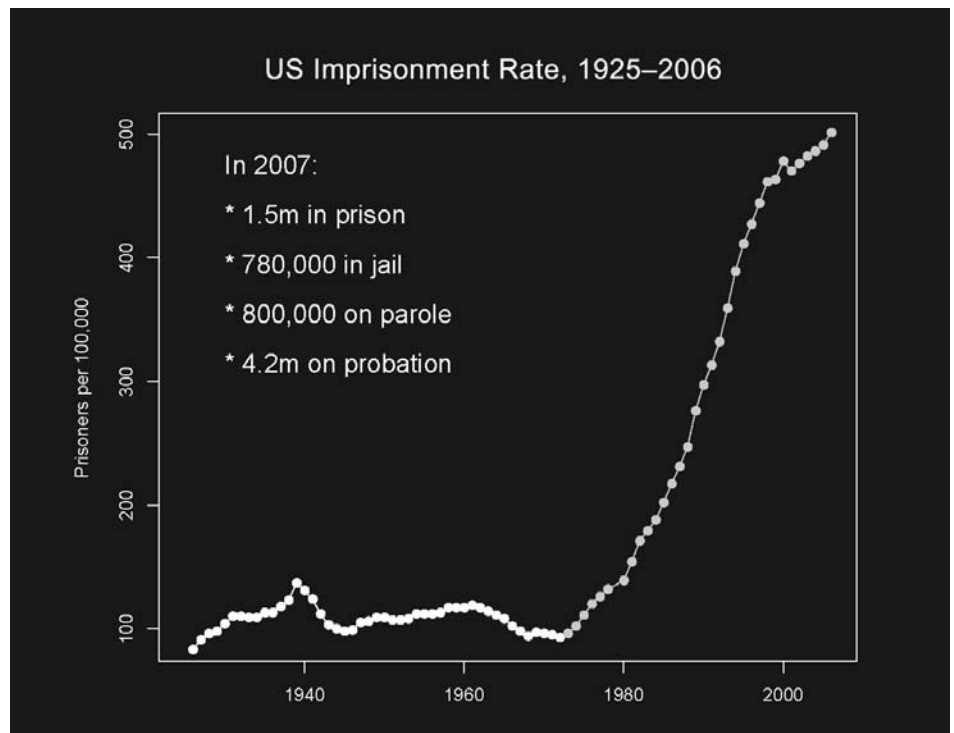


Figure 2

or about 0.1 percent of the population. The incarceration rate in the United States is nearly an order of magnitude larger than that in Western Europe. And the gap between the United States and Europe is even larger today, in 2009, than when these figures were collected in early 2000.

For most of the twentieth century, from 1925 to the early 1970s, the scale of the American penal system was roughly constant at about 100 state and federal prisoners per 100,000 population – the level we see in Europe today. In the mid-1970s, the system began to grow, and the rate of imprisonment has moved steadily upward for the last thirty years (see Figure 2). By 2007, 1.5 million people were in American prisons, another 780,000 were in local jails, and another

The risk today that a thirty-to thirty-four-year-old African American man who has dropped out of high school will go to prison at some point in his life is almost 70 percent.

800,000 were under some sort of community supervision on parole. Finally, 4.2 million people were on probation. Thus, in the United States today more than 7 million people are under some kind of criminal justice supervision, a historically novel situation for our country. We are the world leader in criminal justice supervision.

As striking as these figures are, however, I tend to think they are not what is most important about the criminal justice system in the United States at the moment. Instead, the system’s most significant feature is its distribution across the population. The risk today that a thirty- to thirty-four-year-old African American man who has dropped out of high school will go to prison at some point in his life is almost 70 percent (see

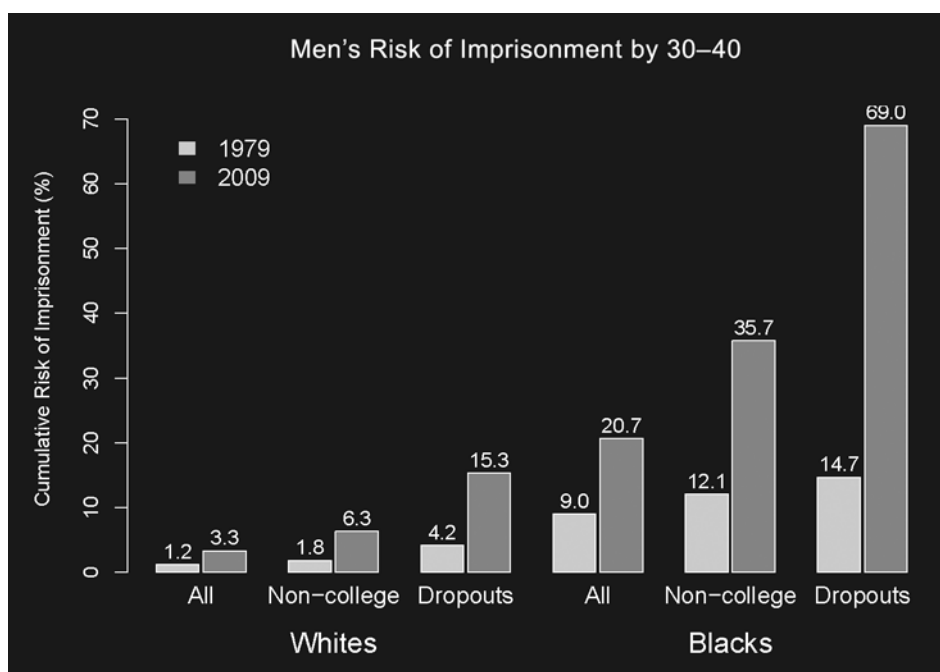


Figure 3

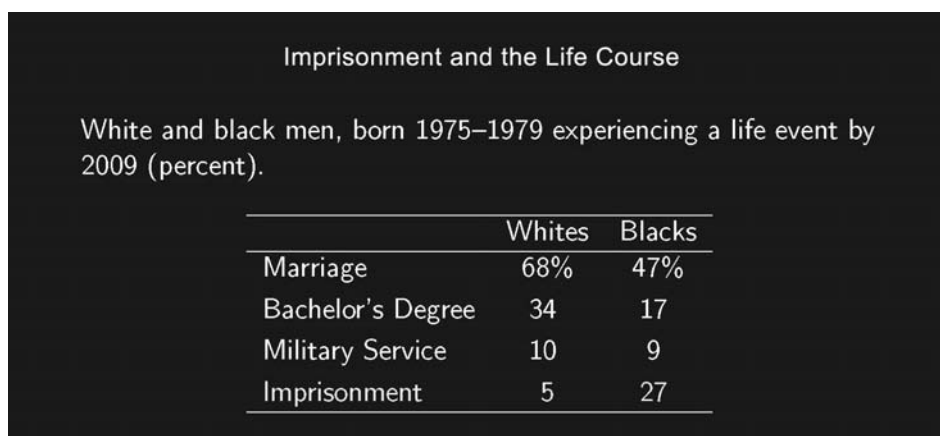


Figure 4

Figure 3). The risk in 1979 was about 15 percent. Incarceration has become a normal life event for many low-education African American men and is a more common life event than graduating college or serving in the military for all black men born between 1975 and 1979 (see Figure 4). This is a situation with which we have to come to grips in the policy debate. The arrival of the Obama administration has created a sense of political and policy opportunity, and, indeed, a variety of reform discussions are taking

place both within Congress and the administration. Those of us involved in the Academy’s incarceration work are hopeful of engaging the major parties in these discussions and of expanding the public understanding of the issue of mass incarceration. ■

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The Challenge of Mass Incarceration in America



Glenn Loury

Glenn Loury is Merton P. Stoltz Professor of the Social Sciences and Professor of Economics at Brown University. He was elected a Fellow of the American Academy of Arts and Sciences in 2000.

The proper role for the social scientist in discussions of policy is not self-evident, because the most challenging policy problems are not merely technical. To rightly decide how we govern ourselves, we have to confront questions of ethics and values. Moreover, policy talk is not merely instrumental; it's also expressive and constitutive. By constitutive, I mean a public discourse that asks and answers the question, what manner of people are we Americans? Policy talk promotes or retards the framing of key moral judgment by the citizenry and sets an agenda for action. Among the most prominent moral challenges of our time is the fact that incarceration on a massive scale has become the central component of social policy in the United States. The prison system in America has grown into a leviathan unmatched in human history. An unprecedented expansion and transformation of penal institutions has occurred since 1970.

These developments ought to trouble deeply anyone who professes to love liberty. Here we are, after all, with great armies on the march under a figurative banner that reads freedom, and yet the United States is home to the largest custodial infrastructure for the mass depredation of liberty to be found on the planet. What is more, the demographic composition of prisoners in the

United States is highly skewed. Blacks and Hispanics form about one-quarter of the population in the country and about two-thirds of the people behind bars on any given day. The element of race is crucial here. It's true that slavery ended a long time ago, but it's also true that the ideology of racial subordination that accompanied the institution of African slavery cast a long shadow. These distant events and ideas are not unrelated to the current situation, either as a matter of historical causation, what with the structure of our cities, for instance, and their massive racial ghettos being implicated in the production of deviancy among the people living therein; or as a matter of ethical evaluation, what with the decency of our institutions being dependent on the extent to which they comport with the national

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narrative of purpose that involves acknowledging and acting to limit and to reverse the consequences of our history. Indeed, I see the rise of mass imprisonment as opening a new front in the historic struggle for racial justice, and I make no apology about linking the notions of race and social justice. One provocative claim is that the racial disparity in our punishment policy reflects both explicit and tacit racism. That is, the emergence of this punishment infrastructure has garnered public support sometimes because of and at other times despite its disproportionately adverse impact on blacks. In any case, the management of social dys-

function via imprisonment has become a principal instrument through which racial hierarchy is reproduced in our society. What does this state of affairs say about our purportedly open and democratic society? What manner of people does our incarceration policy reveal us to be?

The core of the problem is that the socially marginal are not seen as belonging to the same general public body as the rest of us. It becomes possible, therefore, to do just about anything with them. Our political community acts as though some of us are different from the rest because of culture, bad values, self-destructive behavior, malfeasance, criminality, and lack of responsibility. The implication is that these others deserve their fate. However, this posture is inconsistent with the attainment of a just distribution of benefits and burdens in society. The racial disparity of punishment in America should not be seen as an accidental accretion of neutral state action applied to a racially divergent social flow. Properly viewed, it is seen as a residual effect of our history of enslavement, disenfranchisement, segregation, and discrimination and is, therefore, an abhorrent expression of who we Americans have become as a people at the dawn of the twenty-first century.

I realize that I have just stated an opinion and that however defensible I believe it to be, it is still an opinion. As social scientists who would address ourselves to policy, we cannot avoid drawing conclusions such as this, or the opposite, and then arguing forcefully for that position. Let me cut to the chase: My view is that a pure ethic of personal responsibility is an inadequate foundation for distributing the negative good that punishment has become in contemporary American society. I have set myself in this project the task of shifting the public discussion of this problem toward a great acknowledgment of social responsibility even for the wrongful acts freely chosen by individual persons. In pursuing this aim, I'm not so much making a root causes argument – he did the crime but only because he had no choice – as I'm arguing that the society at large is implicated in such choices because we have acquiesced in structural arrangements working to the

benefit of some and to the detriment of others and which shape the consciousness of offenders and their sense of identity in such a way that the choices they make, which we may condemn, are nevertheless compelling to them. This task I've set is a problem of moral philosophy, and I'm a social scientist. Thus, I approach this philosophical problem by emphasizing models of social inequality in which closed and bounded social structures such as the racially homogenous urban ghettos that we find in our cities create contexts where pathological and dysfunctional cultural reforms emerge and yet are not intrinsic to the people caught in these structures, nor are they independent of the behavior of those of us who stand outside. ■

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The Independence of the Judiciary



Robert C. Post

Robert C. Post is Dean and Sol and Lillian Goldman Professor of Law at Yale Law School. He was elected a Fellow of the American Academy of Arts and Sciences in 1993 and serves as Librarian of the Academy.

The Independence of the Judiciary project of the Academy began about fifteen years ago, when the Supreme Court of the United States decided for the first time since the 1930s that the national government lacked power to enact certain forms of legislation. It is one thing for the Court to announce that national legislation violates rights, say First Amendment rights; it is quite another to conclude that the national government does not have power to pass legislation adequate to address national needs.

In response to decisions of this kind, the Academy brought together Supreme Court Justices, the majority of whom, by the way, are members of the Academy; members of the congressional judiciary committees; and scholars who were political scientists, legal academics, historians, and so on. We convened a series of off-the-record meetings to discuss and, we hoped, somewhat to defuse the potential crisis between Congress and the Court. In taking these steps, the Academy exemplified its distinctive role as a disinterested broker who can summon expertise from a variety of sources to affect the development of public policy.

In the early twenty-first century, the Academy's project developed into one that focused on the independence of the judiciary, in

particular on the autonomy of state court judges. Eighty-five percent of all state court judges in this country have to face election, either a competitive election or a retention election, and much evidence suggests that these elections are becoming increasingly expensive and increasingly politicized. They feature fund-raising, political advertisements, large expenditures, and so forth. At one of the meetings we convened to discuss this issue, Bert Brandenburg, the executive director of an organization called Justice at Stake, calculated that since 1999 state supreme court justices have raised in excess of \$150 million for their election campaigns. Often this money comes from the very people who appear before them in court. In its last term the U.S. Supreme Court decided a case out of West Virginia that addressed precisely this issue. A. T. Massey Coal Co. was found liable for \$50 million by a jury for fraudulent misrepresentation,

The idea that judicial independence must include freedom to err is a complicated one, and it suggests the difficulty in explicating what judicial independence might mean. Getting that question right is at the core of the Academy's initiative on the judiciary.

concealment, and tortious interference with existing contractual relations. The company subsequently donated about \$3 million to a candidate who was running for a position on the Supreme Court of Appeals of West Virginia. The candidate was elected and miraculously proved to be the third vote in a three to two decision that reversed and set aside the jury's verdict. The case then went to the Supreme Court, which by a vote of five to four held the reversal to be a violation of due process (*Caperton v. A. T. Massey Coal, Co.*, 129 S. Ct. 2252 [2009]).

It is striking that the vote was five to four; yet the conflict of interest is obvious. Such conflicts are bound to multiply as judicial elections become increasingly politicized. Consider that 95 percent of all legal proceedings in the United States occur in the state courts.

The funding of judicial elections is an issue of huge significance and one that helps to generate growing mistrust of state courts. A national organization called Jail for Judges takes the position that if a state court judge gets a decision wrong, the injured party should be able to sue for personal damages, and if the judge gets a decision very wrong, he or she should be indicted and sent to jail. The proposals of Jail for Judges actually got on the ballot in South Dakota; these proposals were defeated, but similar efforts are proliferating throughout the states.

Many years ago I was in China lecturing on the rule of law and on the necessity of an independent judiciary. I asked an appellate court judge about how he regarded a trial court judge who had issued a mistaken judgment. He responded that judicial errors are wrongful conduct that deserves punishment. Nothing could more deeply compromise judicial independence, as the Jail for Judges initiative demonstrates. Yet the idea that judicial independence must include freedom to err is a complicated one, and it suggests the difficulty in explicating what judicial independence might mean. Getting that question right is at the core of the Academy's initiative on the judiciary.

At one meeting that we convened on this subject, former Supreme Court Justice Sandra Day O'Connor observed that "The breadth and intensity of rage currently being leveled at the judiciary may be unmatched in American history." Our project is about that rage: its sources and its amelioration. We have convened scholars, public officials, and state and federal court judges in an effort to discuss the problem and imagine solutions. Some of the results of these studies are published in the Fall

2008 issue of *Dædalus*. The issue contains papers prepared by former Supreme Court Justice Sandra Day O'Connor, Supreme Court Justice Stephen Breyer, Senator Charles Schumer, Chief Justice of the Massachusetts Supreme Judicial Court Margaret Marshall, Yale Law Professor Judith Resnik, and two jurists we are proud to induct as Fellows of the Academy today, J. Harvie Wilkinson III of the United States Court of Appeals for the Fourth Circuit and Ronald George, Chief Justice of California. ■

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Initiative for Humanities and Culture



Patricia Meyer Spacks

Patricia Meyer Spacks is Edgar F. Shannon Professor of English Emerita at the University of Virginia. She was elected a Fellow of the American Academy of Arts and Sciences in 1994 and served as the Academy's President from 2001 to 2006. She is Chair of the Visiting Scholars Program at the Academy.

Supporting the humanities has long been a central activity in the Academy. The urgency of this activity is becoming increasingly clear, and one thing making it clear is the Humanities Indicators project. Eight or nine years ago, a group of leaders in the academic humanities agreed about the importance of collecting data as an essential foundation for cogent discussion of the humanities. We needed something, we decided, like the biennial *Science and Engineering Indicators* that provide statistics on everything from the number of majors in scientific fields to the salaries paid to academics who profess these fields. Moreover, we needed to amass information on a continuing basis. This would cost a staggering amount of money, which the Academy didn't have.

We subsequently discovered that a lot of data already existed. Government agencies, educational organizations, and learned societies all gather statistics, but the information they provide has been nearly useless for getting the big picture. That's because different organizations employ different definitions, different modes of gathering data, different ways of calculating, and different classifications. The first step to using these data was to make them compatible, a task more modest than that of collecting

data but a large one nonetheless. Norman Bradburn, a distinguished social psychologist currently based at the National Opinion Research Council, assumed responsibility for organizing and presenting the Indicators under five large categories: primary and secondary education; undergraduate and graduate education (including data on the jobs pipeline, or the road to gainful employment, which proved particularly depressing); humanities research and funding; the humanities workforce (meaning the workforce outside academia); and the humanities in American life (meaning life outside the academy).

Statistics show that in 2003 and 2004, 26.5 percent of students taking history in public high schools were taught by someone who not only lacked certification in the subject but had not even majored in it in college.

A preliminary version of the Indicators became available to the public in January 2009 and can be found online at www.HumanitiesIndicators.org. Although in some respects the Indicators revealed what many already knew, in other ways the results were unexpectedly alarming. For example, in 1967 the average verbal score on the SAT exceeded the math score by almost 30 points. By 2007, after dropping more than 40 points since 1967, the mean verbal score was 13 points lower than the math score. In other words, students on average now know slightly more about math than they did 40 years ago, but they have much less capacity to control language, a fundamental skill necessary to almost all occupations. The students' elders have similar difficulties. In the mid-1990s, 22 percent of adults in the United States were highly prose literate, meaning they had the knowledge and skills necessary to understand and use information from text. By 2003, the proportion had dropped to 12.8 percent, the largest decline experienced by any nation participating in

the relevant survey. Meanwhile, the number of those with weak literacy skills, meaning they could read but couldn't make sense of what they were reading, grew by 7.5 percent.

High school teachers aren't doing too well either. The shortage of qualified teachers of science and math is well known, but the problem is actually worse in some areas of the humanities. Statistics show that in 2003 and 2004, 26.5 percent of students taking history in public high schools were taught by someone who not only lacked certification in the subject but had not even majored in it in college. This proportion was considerably higher than for any other subject. Despite all the publicity about underprepared science and math teachers, the corresponding rates for math and for the natural sciences were 12.1 percent and 5.2 percent, respectively.

Knowing such facts is a necessary first step in doing something about them. An updated version of the Indicators is currently in progress, and we hope that some federal agency will assume the expensive task of preserving and enlarging the data in coming years.

A more cheerful perspective on the humanities emerges in the Winter 2009 issue of *Dædalus* entitled "Reflecting on the Humanities." This collection of essays provides a kind of sequel to the volume published under the auspices of the Mellon Foundation in 1997, *What's Happened to the Humanities?* Contributors to the *Dædalus* volume include the head of a major foundation, a nonacademic philanthropist who has generously supported the humanities, a university president, a former college president, several distinguished academics, a provost, and the director of a humanities center. They write about matters ranging from the digital humanities to recent trends in funding. Several of them make deductive use of information from the Indicators. They consider the humanities and social change, the future of the so-called public humanities, and the role of the humanities in liberal arts colleges, as well as disciplinary questions. They both assert and demonstrate the vitality of the humanities. I hope you will have a look. ■

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Educating the World's Children



David E. Bloom

David E. Bloom is Chair of the Department of Global Health and Population and Clarence James Gamble Professor of Economics and Demography at the Harvard School of Public Health. He was elected a Fellow of the American Academy of Arts and Sciences in 2005.

U BASE is a long-standing Academy effort in the global education arena. The acronym stands for Universal Basic and Secondary Education. The project is an ambitious undertaking focused on identifying the rationale, consequences, and means for getting every child in the world age five to sixteen a quality education.

The jumping-off point for the project is the observation that basic and secondary education are in a perilous state in much of the developing world. This is hardly a novel observation. For example, in 1990, delegates from 155 countries met in Jomtien, Thailand, and pledged to achieve universal primary education by the year 2000. They were motivated by the fact that nearly a billion adults were illiterate and that 100 million children of primary school age were not enrolled in primary school. They were also motivated by the severe gender gap in primary school enrollment in many countries.

In the decade following that meeting, respectable educational advances were made, but it was absolutely clear by the year 2000 that the goal of universal primary education was nowhere close to being achieved. So the international community took a page out of an academic playbook and graciously grant-

ed itself a no-cost extension. That extension took the form of the Millennium Development Goals, in which world leaders pledged to achieve universal primary education by 2015. We're now in striking distance of the 2015 deadline, and we see a picture that appears simultaneously good, bad, and ugly.

The good news is that the world has made significant progress over the past decade. Primary school enrollments have continued to increase throughout the world, and gender disparities, particularly in primary enrollment, have decreased substantially.

The UBASE project is an ambitious undertaking focused on identifying the rationale, consequences, and means for getting every child in the world age five to sixteen a quality education.

The bad news is that large numbers of children are still not enrolled in school, and we are not on a promising trajectory for meeting the 2015 goal. Even if enrollment rates continue to grow at the pace they did between 1999 and 2008, an estimated 49 million primary school-age children will not be enrolled in school in 2015. That represents 7 percent of the world's primary school-age children. And there is further bad news: The shortfall with respect to secondary education remains especially striking, despite growing recognition of the economic, social, and political importance of secondary school. We project that 191 million, or more than one-quarter of the world's children of secondary school-age, will not be enrolled in secondary school in 2015. What's more, these figures do not address the issue of quality. That's because enrollment does not necessarily mean attendance, attendance does not necessarily mean receiving an education, and receiving an education does not necessarily mean receiving a good education. Some 75 percent of the world's children live in countries where the quality of education lags behind

– most often far behind – the average of industrial countries, as measured by standardized test scores. Although that standard may not be universally appropriate, the fact that educational quality is often quite poor is uncontested.

Finally, we have the ugly news, which is what we see when we juxtapose the good and the bad. I am referring here to disparities in both educational access and educational quality between the wealthy industrial countries at one extreme and low-income countries at the other. I am also referring to disparities within countries, especially those between girls and boys, rural and urban areas, and racial and ethnic groups. Disparity also shows up in things like expenditures per pupil, teacher qualifications, teacher absenteeism, infrastructure, and curriculum quality.

The UBASE project was initiated by the Academy in 2001 and has aimed to understand the current lay of the land in global education and to think constructively about what it would take to bring about significant improvements. I have been working on this project with Academy Fellow Joel Cohen, who has a base at both Rockefeller University and Columbia University. Over the years, Joel and I have benefited from the unflagging encouragement and support of Leslie Berlowitz, and we have had outstanding assistance from various Academy staff. The project has received financial support from the Academy, the William and Flora Hewlett Foundation, and a number of generous individuals. From the start, our focus has been not on advocacy but on taking careful and critical stock of what we already know and what we still need to know and blending these with as much fresh and out-of-the-box thinking as possible.

We got started by dividing our task into reasonably manageable components, and we recruited experts to lead research efforts in a number of areas. We surrounded these experts with working groups that included people from a wide range of geographic, institutional, and professional backgrounds who could review and comment on the work.

The project's components have included the nature and information content of education data; the history of efforts to achieve

What are the contours of the global education problem? Why does it matter? And what do we do about it?

universal education; the likely consequences of achieving UBASE; the meaning and measurement of educational quality; the politics of achieving UBASE; and the costs of achieving UBASE. With respect to cost, estimates made by Paul Glewwe, Meng Zhao, and Melissa Binder suggest an upper limit of an additional \$70 billion per year for all children to receive a decent primary and secondary education. At one level, this seems like a rather modest sum: It is less than one-ninth of the U.S. government's annual military budget, and it is less than one-fourth of the foreign aid goal of 0.7 percent of the \$43 trillion of gross national income of the developed countries. On the other hand, it's a formidable amount because foreign aid is substantially below the 0.7 percent target, especially in the United States.

The Academy has been an ideal home for this project. It has enhanced our capacity to convene outstanding working groups – with representation from across disciplines, professions, and countries; it has provided neutral territory for discussion and an integrity and independence that add to the gravity of what we produce; and it makes for a great meeting venue.

Our work to date has come to fruition partly in the form of two books. The first of these is *Educating All Children: A Global Agenda*, which I coedited with Joel Cohen and Martin Malin and which was published by MIT Press in 2006. The book lays out the justification for UBASE: the moral, ethical, and humanitarian justification, the international law justification, the social justification, the political justification, and the economic justification. The book argues that UBASE is, in general terms, not impossibly out of reach. The second book is *International Perspectives on the Goals of Universal Basic and Secondary Education*, edited by Joel Cohen and Martin Malin. Due to be published this year by Routledge, this book consists of a series of essays that explore the goals of

education, in particular the economic goals, the political and civic goals, and the personal goals.

We are now endeavoring to synthesize for education leaders, policy-makers, business leaders, and the attentive public the main messages that have emerged from the project thus far. We have assembled an international blue-ribbon advisory committee that is preparing a white paper tentatively titled “Educate,” containing a highly accessible summary of our conclusions to date. A key objective is to promote deeper engagement of U.S. policy-makers in the idea of UBASE. This short report will address bottom-line questions such as “What? So what? And now what?” – that is, what are the contours of the global education problem? Why does it matter? And what do we do about it?

After “Educate” is published, we plan to develop this project further by starting work on a blueprint for achieving universal basic and secondary education. To do this, we will delve into the challenge of implementation, which we see as a matter of design, leadership, management, coordination, and funding. In the process, we will seek to identify successful schooling models from around the world and to pay special attention to what about them is idiosyncratic and what is portable from one setting to another. We hope to rely on many of our new Academy Fellows for help with this next phase of UBASE. ■

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Challenges to Business in the Twenty-First Century: The Way Forward



Gerald Rosenfeld

Gerald Rosenfeld is Deputy Chairman of Rothschild North America. He was elected a Fellow of the American Academy of Arts and Sciences in 2004 and serves as a member of the Academy Trust.

I am the anecdotal piece of evidence that gets translated into data at the American Academy, proof that you don't have to be a tenured professor at a university to contribute to and be part of a study. I say to my colleagues from the world of business and

The current crisis has given us an opportunity to think about ways we might extend our earlier study of the relationship of business to society.

commerce that the Academy offers many interesting studies and projects on which to work. One of the words in the Academy's founding documents is *commerce*, and we spend a lot of time thinking in particular about the relationship of business to the rest of society, to the other professions, and so forth.

The project on Challenges to Business in the Twenty-First Century started in the aftermath of the so-called corporate scandals of the early part of this decade: Enron et al. A group of Academy Fellows, business

practitioners, and academics came together to try to understand how those in the gatekeeper professions – lawyers, financial advisors, investment bankers, regulators, auditors, corporate directors – contributed to the scandals. We held a series of panels and dialogues and commissioned a number of essays, which we published in a 2005 volume bearing the aspirational title *Restoring Trust in American Business*. I'm not sure how well we've done in meeting that goal.

The book received a lot of publicity at the time it was published, and a number of schools adopted chapters from it as part of their curriculum, particularly in courses on professional responsibility. I initiated a professional responsibility course at NYU five years ago that is taught to law students and business students simultaneously and allows both groups to satisfy their school's respective professional responsibility requirements and to engage in dialogue with another part of the professional training branch. I begin the course by saying that lawyers have a book that tells them how to behave, the Model Rules of Professional Conduct, and businesspeople have “Gee, I hope I don't get arrested tomorrow.” Somewhere between the Model Rules of Professional Conduct and “Gee, I hope I don't get arrested tomorrow” is a commonality of behaviors that we explore in the class using, among other sources, information from *Restoring Trust in American Business*.

For the past year or two we have been working to extend the work that culminated in the 2005 volume. Fortunately for us, a crisis comes along regularly. We get about one fifty-year storm every three or four years these days. The most recent example is known variously as the Financial Crisis, the Great Recession, and so on. Whatever capitalized term you want to apply to it, the current crisis has given us an opportunity to think about ways we might extend our earlier study of the relationship of business to society. Rakesh Khurana, Jay Lorsch, and I are working on this, and the Academy will convene a symposium on the topic in late November 2009 in collaboration with the Pollack Center for Law & Business at New York University. ■

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Challenges to Business in the Twenty-First Century: The Way Forward



Rakesh Khurana

Rakesh Khurana is Marvin Bower Professor of Leadership Development at Harvard Business School.

Over the past year, the United States has engaged in a continual multibillion-dollar payout, a taxpayer-financed bailout of the financial industry, ranging from banks to insurance companies. The U.S. government is now also the controlling shareholder of the largest industrial concern in the world, General Motors, and many economists are predicting that we will see record levels of postwar unemployment.

Trust in business as an institution is now the lowest in any of the recorded surveys. In fact, business leaders are now seen as less trustworthy than Washington politicians, which is quite an accomplishment. Our economic unraveling has unmasked numerous contradictions and challenges confronting global capitalism. We hope to discuss three of these at our upcoming symposium. First, economic activity and the political process were once largely conducted within the same geographical area and therefore could balance each other. Production took place predominantly within national boundaries, and capital flows were limited and controlled through international agreements so that the politics of nation-states could still determine the priorities of

the economy and to some degree govern its performance. Today the economic crisis reveals the role of public authorities directly involved in correcting errors and malfunctions in the so-called free market/global market economy. The importance of national governments working together across the globe to prevent future crises highlights the fact that we need to think about new forms of global governance that can more effectively manage the global economy.

In the course of the discussions we have held to date, the notion of how we get back to the status ex ante was frequently raised. However, what ultimately has emerged is a realization that we can't return to the status ex ante. We have to recognize that globalization and the direction of global capitalism have created enormous inequalities that have contributed to increased social instability. World Bank data now reveal that for over two decades, as the world's wealth grew in absolute terms, inequalities increased and are now at levels that have not been measured since the 1920s. One need only look around our own country to see that even prior to the economic crisis millions of our fellow citizens were experiencing dramatic declines in their standard of living and future economic prospects.

Trust in business as an institution is now the lowest in any of the recorded surveys. In fact, business leaders are now seen as less trustworthy than Washington politicians.

A second issue we will be discussing at our upcoming symposium is CEO compensation. In 2007, the CEO of the median Standard and Poor's 500 company made approximately \$7.6 million. To put this in perspective: in 1960, the ratio of average CEO pay to the salary of the president of the United States was about 2 to 1. Today the ratio is about 20 to 1. If average pay for factory

workers had risen as fast as CEO pay, it would be about \$120,000 this year instead of \$24,000. If the minimum wage had risen as fast, it would be about \$24.30 per hour rather than \$7.25. In 1980, the ratio of CEO pay to the average worker's pay was about 42 to 1. By 1999, it had gone to 475 to 1, and it peaked in 2000 at about 530 to 1, settling at about 300 to 1 last year. These ratios are for the United States. In the United Kingdom the ratio is about 25 to 1; in France, 16 to 1; in Germany, 11 to 1; and in Japan, 10 to 1. So the United States leads the world not only in incarceration rates but in executive compensation. That some of these things are linked is increasingly being recognized.

A third area we hope to examine at our symposium falls within the realm of technology and the economy, particularly the business media. To imagine the current economy without the pervasive presence of the continuous information cycle is almost impossible. Given the media's fundamental importance in both reflecting and engineering changes in perception, we have to reflect carefully on its influence, especially in regard to how economic imperatives can clash with our ethical imperatives for serving a well-informed citizenry. Just because social communication can increase the possibilities of interconnections and dissemination of ideas, it does not follow that communication necessarily promotes freedom, fair economic development, or rational and reasoned discourse.

Our symposium will take place in a unique historical moment. We have an opportunity to reflect more deeply on the meaning of the economy and its goals. We hope to begin a conversation that will expand and contribute to a larger discourse and will take a more farsighted view of the model of global capitalism than the one that has brought us to our present condition. ■

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