Projects and Studies

At a morning orientation program for new members, held on October 8, 2005, leaders of current Academy projects presented updates on their work. Their remarks appear below.

Congress and the Court

Linda Greenhouse

Supreme Court Correspondent, The New York Times

Those of you who watched, or read about, the confirmation hearings for the new Chief Justice of the United States may have noted the very testy and interesting exchange between Senator Arlen Specter, Chairman of the Judiciary Committee, and John Roberts, the nominee, about a series of Supreme Court decisions that have questioned congressional actions in a rather arresting fashion – a series of decisions dating back about ten years. It was apparent from the tone of Senator Specter's questions that Congress

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was being besieged at the hands of the Court. This is the tip of the iceberg that we, in the Academy's Congress and the Court committee, confronted when we first met some four years ago. At that point, it was clear to all of us that the relations between Congress and the federal judiciary were at an unfortunate pass. There was obviously a lack of institutional understanding, one to the other. Using the Academy's good offices, we developed a series of off-the-record conversations bringing together Supreme Court Justices, congressional leaders, and scholars as well as more formal lectures, panel discussions, and scholarly papers in an effort to address some of the issues underlying the growing tension between these two branches of government.

Robert C. Post

David Boies Professor of Law, Yale Law School

As Linda has said, the impetus that led to the Academy's Committee on Congress and the Court was the deteriorating relationship between Congress and the federal judiciary. In 1995, five Justices, appointed by Republican presidents, sought to reassert the value of federalism by limiting the power of Congress under the Commerce Clause, which had been viewed as virtually plenary ever since the era of the New Deal. The potential implications were extraordinary, particularly in areas like environmental law, for the

Selected leaders of current Academy projects: front (left to right): Jay Lorsch (Harvard Business School), President Patricia Meyer Spacks (University of Virginia), Secretary Jerrold Meinwald (Cornell University); back (left to right): Geoffrey Stone (University of Chicago), Linda Greenhouse (New York Times), Robert C. Post (Yale Law School), David Clark (Massachusetts Institute of Technology), Steven Miller (Kennedy School of Government, Harvard University), Neal Lane (Rice University), and David Bloom (Harvard School of Public Health)

Court's new jurisprudence meant that Congress could be prevented from enacting legislation that it deemed necessary to meet national needs. The Supreme Court also sharply constrained Congress's powers under Section 5 of the Fourteenth Amendment. At the same time, growing controversy over issues like abortion made the judicial confirmation process, for both Supreme Court Justices and for judges in the lower federal courts, more contentious than at any time in recent memory.

It is plain that the relationship between Congress and the Court has grown more, rather than less, contentious.

Jesse Choper (University of California, Berkeley) and I thought that the Academy would be a superb venue in which to undertake an independent analysis of this increasingly contentious relationship between Congress and the Court. The members of the committee now include Linda Greenhouse (*New York Times*), Abner Mikva (University of Chicago Law School), Nelson Polsby (University of California, Berkeley), and Judith Resnik (Yale Law School). We pursued a number of distinct strategies, always seeking to bring an interdisciplinary perspective to this important issue. One approach was to convene off-the-record meetings involving federal judges, members of the House judiciary committee, legal scholars, and political scientists. There were frank and fascinating discussions about possible improvements in the relationship between the two branches. By 2003, however, it was clear that tensions were running so high that this strategy had become ineffective.

We have attempted to commission scholarly studies of some of the issues that emerged from these discussions, including an analysis of the career path of federal judges. Unlike the professionalized federal judiciary of Europe, American judges have tended to come from private practice or from careers in public law. Judicial salaries have so rapidly diminished, due in part to inflation, that many worry whether federal judges can still be recruited from among the first rank of lawyers. We need to understand how congressional decisions relating to compensation, benefits, and the confirmation process affect who is willing to become a federal judge, and we also need to understand how the staffing of the federal judiciary affects the kind of federal law that these judges decree.

Our committee has also organized several Stated Meetings on issues dividing Congress and the Court. We have sponsored programs on the independence of the federal judiciary as well as on the criteria that the Senate ought to use in the confirmation of federal judges. We have recently broadened our focus to consider new challenges to constitutional forms of government. During the past year, at meetings in New York City, Palo Alto, and Washington, D.C., we considered how long-established and emerging democracies are seeking to preserve civil liberties in the face of rising national security concerns (see pages 26 – 41).

When we began this study, the Court had taken the offensive against Congress. Now Congress has acquired a new confidence in seeking to control the judicial branch. Legislation pending in Congress would limit the ability of federal judges to travel as well as prohibit them from citing foreign law. It is plain that the relationship between Congress and the Court has grown more, rather than less, contentious. We hope that in these circumstances the Academy's unique capacity to inspire interdisciplinary research and to serve as an honest broker can accomplish useful public service.

Corporate Responsibility

Jay Lorsch

Louis Kirstein Professor of Human Relations, Harvard Business School

We were interested in exploring the role of what we call the "gatekeepers" – the various professional firms and institutions that are intended to oversee America's corporations.

I want to talk about the Academy's project on corporate responsibility and our book, *Restoring Trust in American Business*. The project grew out of a concern between myself and corporate lawyers Martin Lipton and Larry Sonsini about the scandals at Enron, Worldcom, Tyco, and other companies. We were interested in exploring the role of what we call the "gatekeepers" – the various professional firms and institutions that are intended to oversee America's corporations. We were particularly concerned about evidence suggesting that certain gatekeepers – auditors, lawyers, investment bankers, corporate directors, regulators, and business journalists – had not lived up to their professional obligations.

To test this proposition, we first created a steering committee of distinguished practitioners and academics, and we met in New York for an exploratory meeting. We then commissioned a series of papers on the gatekeepers and subsequently asked a few additional authors to contribute essays to what became this edited volume. The group's consensus was that there had, in fact, been a failure on the part of these various gatekeepers that was a serious and significant contributing factor to the corporate scandals.

What is distinctive about this project is the nature of the group we were able to gather together – academics like myself, together with distinguished practitioners like my two cochairs – to look at these issues and to talk to each other frankly and openly. Among those who contributed to the project was a Nobel Prize – winning economist, a union leader, a preeminent investment banker, a renowned journalistic scholar, and a former chancellor of the Delaware Court of Chancery. I know of no other organization that could so easily put together such a diverse group. And there are now several new projects emerging from this initial study, including one on professional conduct in investment banking, and a second on how well the media serves the public. The continuing dialogue between scholars and practitioners on some of the country's critical issues reflects the Academy's unique contribution.

Academic Freedom

Geoffrey Stone

Harry Kalven, Jr. Distinguished Service Professor of Law, University of Chicago

The Academy's initiative on academic freedom is in its very early stages. Those of us involved in planning this study have a sense that we are living at a time when it is critical that we think carefully about what academic freedom is, why we have it, why it's important, what its boundaries may be, and how we can justify it to the larger society.

This issue has arisen periodically throughout American history. In the 1890s, trustees and industrialists pressured universities about the types of research and teaching that were appropriate for these institutions. During World War I, questions were raised about freedom of thought, freedom of teaching, and freedom of expression. During the McCarthy era, of course, there were very serious issues about the autonomy and judgment of universities and faculty members. Recent papers by Jonathan Cole (Columbia University), Lee Bollinger (Columbia University), and Robert C. Post (Yale Law School) have helped set the agenda for an examination of the contemporary questions surrounding academic freedom.

The current challenge to academic freedom ranges across a broad spectrum, from the provisions of the Patriot Act and federal restrictions on the participation of foreign researchers in certain types of research to the possibility of new government constraints on universities with respect to teaching, research, and the dissemination of scientific and scholarly findings. In addition, foundations have increasingly put certain conditions on grants that may be seen as problematic.

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When, why, and to what extent is it legitimate for universities to resist these restrictions? Legislatures have recently been considering statutes that would require academic institutions to act under something akin to a fairness doctrine, requiring that all sides of issues be addressed – a very interesting problem for universities in terms of deciding what is meant by "all sides" and who determines what the sides are. But do legislatures have the right to intrude in such issues? There are further questions involving such matters as stem cell research, speech codes, political correctness, and "who watches the watchmen."

Within and beyond the university, the meaning of academic freedom is under debate. One conception of academic freedom is that it is analogous to freedom of speech in society as a whole: anyone is entitled to say pretty much whatever he or she chooses, without regard to any institutional restriction. But there is also an institutional governance conception of academic freedom, which holds that universities are not comparable to the larger society. Each student and faculty member is not free to say or to write whatever he or she pleases. Rather, decisions regarding promotion, tenure, and course performance invariably involve judgments about good or bad ideas and the worth of one's thinking. In that sense, the core of academic freedom is really self-governance by the faculty according to professional standards that determine the nature of appropriate scholarship and teaching. Another set of issues centers on the rights of students. To what extent can students define the boundaries of their academic freedom, and to what extent are those boundaries set by faculty, trustees, administrators, alumni, legislators, and the like?

With all of these conflicting views and interpretations, the Academy study group has set two objectives. The *first* is a clearer understanding of the reasons for claiming a right to academic freedom and an assessment of its limits. A case currently before the Supreme Court poses this question. A number of law schools are challenging the Solomon Amendment, which denies research funds to universities that exclude the military from interviewing students on their campuses. At issue is the question of whether this legislation intrudes upon the academic freedom of these institutions. Is academic freedom limited to the classroom? Is it limited to the laboratory? Does it extend to decisions about who may enter the premises of an institution in order to interview students, or is that pushing the limits of academic freedom too far? To address these questions, we need to take a fresh look at what academic freedom means, what it protects, and what its limits are.

Assuming we can reach a general consensus on how we define academic freedom, our *second* step is to explore what universities contribute to society and why they believe that academic freedom is essential to their ability to make these contributions.

Finally, returning to the notion of who watches the watchmen, there is considerable concern about whether universities themselves are making decisions about their faculty on the basis of professional standards or according to political judgments. When the public reads that 90 percent of faculty members at major research universities support a Democratic rather than a Republican candidate, that statistic raises questions as to whether these institutions are, in fact, acting professionally in decisions about scholarship and teaching, or whether political preferences are corrupting these judgments. Some alumni, trustees, and legislators assert that faculties are not trustworthy. How do we deal with that issue if, in fact, it turns out to be a fair condemnation?

Taken together, all of these matters deserve the thoughtful, interdisciplinary analysis the Academy can provide. It is time that we give them serious consideration.

Universal Basic and Secondary Education

David Bloom

Clarence James Gamble Professor of Economics and Demography, Department of Population and International Health, Harvard School of Public Health

Fifteen years ago, delegates from 155 countries met in Jomtien, Thailand, and pledged to achieve universal primary education by the year 2000.

Respectable educational advances were made in the 1990s, but it was absolutely clear by 2000 that the goal of universal primary education was nowhere close to being achieved. So the global community very kindly granted itself a no-cost extension in the form of the second Millennium Development Goal: it made a new pledge to achieve universal primary education by 2015.

Now we're in 2005, and there continue to be good, bad, and ugly parts to this story.

The good news is that the world has continued to make progress on the educational access front.

The bad news is that it is becoming increasingly apparent that we will not meet the 2015 deadline. Even if education continues to expand at the pace it did between 1990 and 2000, an estimated 118 million primary-school-age children – 16 percent of the primary-school-age population – will not be enrolled in school in 2015.

And secondary education has been noticeably absent from global education initiatives, despite growing recognition of its economic and social importance. An estimated 217 million children of secondary-school age are projected not to be enrolled in secondary school in 2015. That's 30 percent of the relevant age group worldwide.

The aim of this rather ambitious project is to explore the rationale, the means, and the consequences of providing basic and secondary education of quality to all the world's children.

The ugly news is in the educational disparities – disparities involving educational access between the wealthy industrial countries at one extreme and countries in sub-Saharan Africa and South Asia at the other; disparities involving educational quality between those same countries; and disparities between female and male children.

In recognition of both the challenge and the promise of providing a quality education to all the world's children, the Academy began the UBASE project – Universal Basic and Secondary Education – four years ago. The aim of this rather ambitious project is to explore the rationale, the means, and the consequences of providing basic and secondary education of quality to all the world's children.

I have been working on this project with Academy Fellow Joel Cohen, who has a base at both Rockefeller University and Columbia University. We have had the encouragement and support of Leslie Berlowitz, the Academy's Chief Executive Officer, and the outstanding assistance of Martin Malin and Helen Curry, who are on the 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 or implementation, but rather on taking careful and critical stock of what we already know and what we still need to know, and blending it with as much fresh and out-of-the-box thinking as possible.

We began by deconstructing our task into somewhat more manageable pieces, and we recruited experts to lead research efforts in a number of areas. We surrounded the authors with working groups that included people from a wide range of geographic, institutional, and professional backgrounds to review and comment on their work.

The project has seven key components:

- *Basic facts and data*: What is known about the state of education around the world? What new data and data systems are needed?
- *Intellectual and programmatic history*: How, where, and when did ideas of universal education originate? What lessons does the past offer us today?
- *Consequences*: What would be the demographic, social, political, and economic effects of educating every child well?
- *Goals and assessment*: What constitutes a high-quality education? How do we measure progress toward that goal?
- *Politics of and obstacles to implementation*: What is involved in mobilizing the political will to move a grand idea like UBASE from dream to reality?
- *Cost and finance*: What would it cost to achieve UBASE, under various alternative models of education?
- *Means*: What pragmatic measures are necessary for actually delivering universal education?

The American Academy is an ideal venue for this project. It enables us to convene outstanding working groups – with representation from across disciplines and professions. It provides neutral territory for discussion, and an integrity and independence that adds to the gravity of what we produce. And it is a great meeting venue.

Write-ups of our thinking and conclusions have begun to find their way into print in both academic and popular outlets in a wide range of languages. Revisions of the core essays prepared for this project are now being collected for publication in a pair of edited volumes.

But it is our hope that this project will lead to more than just publications, as the dominant issue changes from whether to do something in this arena to what to do and how.

What we now need, and what we plan to develop in the next stage of the project, is a blueprint for achieving universal basic and secondary education. A new phase of UBASE will consider how to meet the challenge of implementation, which is really a matter of design, leadership, management, and coordination. And for help with that we'll be turning to you!

The Humanities Initiative

Patricia Meyer Spacks

Edgar F. Shannon Professor of English, Emerita, University of Virginia

In 1998, the Academy organized a two-pronged Initiative in the Humanities. First, I will discuss the effort to create a set of humanities indicators, now at a very exciting stage of development, and then I will consider our histories of the humanities, which will be published in 2006.

Unlike scientists and engineers, humanists have never had available to them a single, dependable source of data about what's happening in their field. What may be even more significant is that to a very considerable extent, they have not realized that they needed such indicators. One of the accomplishments of the Academy project is that it has educated a large segment of the humanities community about the importance of having dependable data. The *Science and Engineering Indicators*, issued biennially by the National Science Foundation, provide information about education and employment over a considerable disciplinary range, but they do not include the humanities. Various professional organizations in the humanities have tried to assemble facts about developments within their disciplines, but data between fields are often not compatible since different organizations employ different means of gathering data and different ways of codifying them.

The American Academy has set out to facilitate the inauguration of a comprehensive system for accumulating and organizing basic information about education and employment in the humanistic disciplines. How many people major in these fields? How many take courses? What courses do they take? How many get advanced degrees? What happens to those with Ph.D.s in the humanities? What do they do for a living? You can't assume nowadays that they get jobs in universities. How much teaching in the humanistic areas is done by part-time faculty? These are the sorts of questions we have in mind.

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To accomplish our aim turned out to be unimaginably complicated as well as unimaginably expensive. The enterprise involves figuring out how to make use of existing data as well as how to gather new information. First, it entails deciding exactly what questions to ask, and that's a very difficult matter. It has required the collaboration of men and women from many disciplines – statisticians, social scientists, and humanists – and of many organizations, including the learned societies under the aegis of the American Council of Learned Societies.

But it is actually happening, thanks to foundation support and to the leadership of Norman Bradburn, who recently left the National Science Foundation to rejoin the National Opinion Research Center at the University of Chicago, along with medieval historian Francis Oakley (Williams College) and statistician Stephen Raudenbush (University of Chicago). I mention their professional identifications in order to emphasize how wide-ranging the collaboration is. Thanks to the cooperation of many individuals and organizations, a working committee has agreed upon a core set of questions of interest to all of the relevant learned societies. We are moving toward a national survey of humanities departments to generate basic information about faculty and staffing trends and about teaching loads.

The project to create histories of the humanities is even closer to my heart, since I cochair it with Steven Marcus (Columbia University). I have been responsible for one of the two volumes currently near publication. Both of these studies explore, from different points of view, the changes that have shaped the humanities over the past century.

My volume, *Considering the Humanities*, contains essays that cover individually seven humanistic disciplines. They tell, as you would expect, the stories of seven different fields, but with provocative convergences. All record histories of great vitality, with each discipline's governing assumptions in constant flux and with new consensus repeatedly generated out of controversy. According to their historians, several disciplines – comparative literature, philosophy, and law – show unexpected convergence with science. I have to say it was something of a shock to me, as it will be perhaps to you, to learn that in its early days, comparative literature aspired to the status of a science. The finished volume, to be published as the Spring 2006 issue of *Dædalus*, will remind its readers how fundamentally the humanities have participated in the life of this country, engaging in various terms the issues that perplexed a nation and reflecting in their internal conflicts larger dilemmas of meaning.

It was essential to the Humanities Initiative from the start that the Academy sponsor multiple histories to emphasize that every set of facts can generate different stories, and that the story told often depends on who is telling it. Academy Fellow David Hollinger, an historian from the University of California, Berkeley, has edited another volume offering histories of the humanities disciplines from a specific point of view. His book, *The Humanities and the Dynamics of Inclusion since World War II*, explores the social and cultural determinants that have helped shape a distinctly American version of the humanities in the twentieth century. Its essays, also of multiple authorship, argue that the role played by the academic humanities in embracing diversity of subject matter and of ideas has not been fully appreciated. They examine the rise of area studies, the emergence of American studies and other interdisciplinary programs, and the growth of American higher education as the opportunity to attend colleges and universities expanded in the postwar era. Hollinger and his authors show that the humanities have played a vital role in the engagement of the United States with the wider world, and that they continue to serve a crucial purpose as a means of incorporating America's ethnic and cultural diversity.

Both these volumes will appear early next year, coinciding with the observance of the Academy's 225th anniversary. Together, and in conjunction with the effort to create comprehensive, accurate data for the humanities, they will help to elucidate the specific functions, the specific condition, and the specific importance of humanistic knowledge in the United States.

Initiative for Science

Neal Lane

Senior Fellow, James A. Baker III Institute for Public Policy, Malcolm Gillis University Professor, Professor of Physics and Astronomy, Rice University

My involvement in the Academy's new Initiative for Science stems from my participation in the work of the Committee on International Security Studies, led by Carl Kaysen (MIT) and John Steinbruner (University of Maryland), particularly in its study on the Rules of Space. George Abbey, my colleague at the Baker Institute, Rice University, and I hosted several joint American Academy – Rice workshops on contentious issues in space policy.

One of the barriers currently facing the U.S. civilian space program is a set of federal export control regulations that require companies to apply for a license to sell, or share with a foreign country, information or technologies that the federal government wishes to control. To fully understand the impact of export controls, we needed to bring industry to the table, but representatives of industry had no interest in becoming involved in a public forum. They did, however, agree to participate in these closed workshops that also included international security experts and scientists. The result was an open and frank discussion focused on some of the issues that George and I were addressing in a paper we were writing on "United States Space Policy: Challenges and Opportunities." Taking into account some of the perspectives offered at that meeting, the report has now been published as part of the Academy's Occasional Paper series.

The varied perspectives and expertise the Academy can bring to the future of science and technology in this country is unmatched, and we look forward to formulating and implementing a program of discussion and research that will make a major contribution to scientific research and science education.

The Initiative for Science and Technology, to be chaired by Charles Vest, former President of MIT, and myself, will deal with equally contentious issues but on a much broader scale. Let me mention two, in particular.

The first is science funding and regulation. Beginning with the Manhattan Project, the federal government has been a major player in funding research and development activities in universities and laboratories and, to some extent, in industry, often leading to difficult policy dilemmas. How does this funding affect the direction of research? What constraints are placed on the freedom of scientific exploration? What research gets published? How much funding is enough? Some of these questions interface with other Academy studies, including the discussions of academic freedom. Workshops that further interdisciplinary discussion, coupled with the commissioning of papers and preparation of reports, can provide the basis for informed action in this area.

However, a different approach may be more appropriate for a second set of issues concerning science policymaking. How do elected representatives in the executive and legislative branches, on the federal and state level, determine what are appropriate science policies with respect to such matters as climate change, stem cell research, and the teaching of science in K-12 classrooms? In this instance, some of the questions are so contentious and politically charged that the Academy may be most effective by serving as an honest broker – by bringing together those with opposing views for preliminary explorations in off-the-record discussions. Of course, publications may result, but, first, it is essential that we establish a basis for mutual understanding of the challenges that lie ahead.

These are only two of the issues on the Initiative's agenda. Related questions involve an examination of the science curriculum for nonscience majors and the importance of advancing scientific literacy, led by Jerrold Meinwald (Cornell University) and John Hildebrand (University of Arizona). Donald Kennedy (Stanford University) and Geneva Overholser (University of Missouri) will chair a new study on science and the media. The varied perspectives and expertise the Academy can bring to the future of science and technology in this country is unmatched, and we look forward to formulating and implementing a program of discussion and research that will make a major contribution to scientific research and science education.

Securing the Internet as Public Space

David Clark

Senior Research Scientist, Laboratory for Computer Science, Massachusetts Institute of Technology

The Academy's project on Securing the Internet as Public Space grew out of a series of questions posed by Tom Leighton (MIT and Akamai Technologies) in his remarks at the Induction Ceremony two years ago.

If you ask people whether they feel safe when they enter that shared place called cyberspace, most will point to a number of serious problems. Spam is generally regarded as just a nuisance. Far more serious are the spyware programs that show up in your computer, capture all your keystrokes, and steal your passwords and send them to

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nefarious people in places where we have no extradition treaties. The practice of "phishing" also threatens the confidentiality of your personal information. Here, you may receive what appears to be a legitimate email from an institution such as Citibank requesting that you go to a designated website and reenter your bank or credit card data, when, in fact, the website is not Citibank's. Then there are zombies – I must say that computer scientists pick colorful names for these problems.

Zombies are computers that hackers control without the knowledge of the owner. Hackers can command the zombie, for example, to relay an extortion threat that orders the operators of a website to leave $10,000 in a brown paper bag on a street corner or else they will cripple the site with an influx of data, preventing legitimate users from gaining access.

How can such situations occur? Internet security problems can be sorted into two categories: a) stupid or b) not purely technical. You might say that the designers of the Internet developed a technically inferior system. If that were the case, there would be no need for an Academy study; you could simply hit computer scientists over the head until they produced more effective security protocols. Stupid problems such as software engineering failures are primarily simple, self-contained forms of exploitation. More serious issues arise when technical problems are mixed with social, economic, and policy considerations.

In the case of computers turning into zombies, it is possible that a computer can be infected if it has an "open door" that is not secured by a firewall, a net box, or the latest patch from a vendor of your choice. More likely, however, you have caused the problem yourself by accessing an unfamiliar email address or by clicking on a friend's email that was already infected. You might also have thought that a particular website was a legitimate address because it said, "Click here for a free screensaver." You should never do that!

As these examples indicate, the Internet is not just a space filled with technical problems. It's a space of deception and confidence men, a space of broken social conventions governed by a Wild West mentality. As someone said, it's like a Hobbesian village with masked people running around. To understand these threats to Internet security, it is helpful to focus on the issue of identity on the net. To what extent should your actions be traceable back to you, or to what extent should another person's actions be traceable back to them? The original design of the Internet was based on freedom of action and a preference for anonymity over mandatory identification, which has perhaps contributed to the Wild West mentality. Those of us who were involved in the design could have done it differently. But it is no longer a question of what we could build; it is rather a question of what we should build.

For example, we could change the email system so that you would need a certificate from the government stating your identity, which you would then use to sign all of your email. I know how to build that system. I think it would have very bad social consequences, but it would certainly mean that when you got an email, you would know who had sent it.

The question I am raising here is whether your identity should have forensic robustness. Technology cannot provide the answer. We must look to the broader issue of social choice in a multidimensional space. The Academy study, involving lawyers, economists, political scientists, humanists, and ethicists, will focus on the problems of the shared experience we have in the Internet. When the study was originally conceived, we believed that the emphasis should be on the analysis of existing information. However, as a result of a series of planning meetings over the past year, we have found that there is a strong need for original research and synthesis. We must conceptualize alternative futures that are robust in the sense that technologists know how to build them, yet are open to analysis by individuals from different disciplines, some of whom may be uncomfortable with studying a situation that does not yet exist.

The direction of the project has also been influenced by the National Science Foundation's (NSF) decision to examine the kind of communications network that could be in place ten to fifteen years from now. Instead of making incremental improvements in the Internet, the challenge is to envision an end objective and the steps needed to achieve it. NSF plans to ask the technical research community to address this question, but, in my view, this is exactly the kind of issue that needs to be deeply informed by experts from diverse disciplines. The purpose of redesigning the Internet is not to fix a technical flaw but to deal with a public space that must accommodate different needs and interests. In the coming months, we will attempt to construct a linkage between the NSF's "challenge question" for technologists and the resources that the Academy can bring to such a study.

The Global Nuclear Future

Steven Miller

Director, International Security Program, Belfer Center for Science and International Affairs, Kennedy School of Government, Harvard University

The Academy and its Committee on International Security Studies (CISS) have a long-standing commitment to addressing various issues relating to the development and control of nuclear weapons. Much of the truly formative work on both the theory and practice of arms control was sponsored by the Academy in the late 1950s and early 1960s. CISS continued that tradition with projects on strategic arms control and missile defense. In recent years, it has also broadened its mandate to include other threats to international security. In the 1990s, Carl Kaysen (MIT) and others examined how justifications for armed intervention by the international community have changed over time and how emerging norms of third-party interventions can be strengthened in circumstances ranging from acts of aggression to civil strife, environmental disasters, and violations of basic human rights. Robert Legvold (Columbia University) and his collaborators recently completed a multivolume study of international security concerns in the post-Soviet region – an area that encompasses much of northern Eurasia but has now splintered into fifteen different states. John Steinbruner (University of Maryland), Neal Lane (Rice University), and others are currently undertaking a study of competing scientific, commercial, and military interests in space.

Looking ahead, CISS is in the early stage of pursuing a broad assessment of where we are and where we may be headed in terms of the global nuclear order. We emerged from the Cold War in the early 1990s with a familiar nuclear reality that combined the established practices of the existing nuclear powers with a new set of methods, processes, procedures, rules, regulations, and institutions intended to govern the nuclear capabilities of the various nuclear-weapons states. With the end of the Cold War, there was a deep expectation that we would build on this order in ways that would mini-

mize the role of nuclear weapons and maximize the role of restraint and regulation. There was also widespread hope that a much more ambitious regulatory infrastructure would emerge to tame the nuclear danger and increase the legal, social, and political barriers against nuclear use and nuclear accident.

Yet looking back on it fifteen years later, we see that instead of taking the inherited infrastructure and building on it in desirable ways, we have experienced a very significant erosion of the global nuclear order. The number of nuclear weapons is still in the tens of thousands in the bilateral Russian-American context, within which most of the nuclear weapons on this planet exist. For the first time in half a century, we do not have an ongoing strategic nuclear arms control process nor are there plans to have any such negotiation. We have seen the dismantlement of a large part of the arms control inheritance left over from the Cold War. The strategic arms reduction process embodied in the START II treaty has been renounced, and the Anti-Ballistic Missile (ABM) treaty has been formally repudiated. Remarkably, to my mind, the foundational arms control agreement that provides the basis for regulation of twenty or thirty thousand nuclear weapons on this planet is the START I agreement. This agreement originated in the early 1980s during the first term of the Reagan administration and, in fact, arose out of a period that historians call the New Cold War. How can we imagine that this could be an appropriate instrument for governing today's nuclear postures in a world that was unimaginable twenty-five years ago?

In addition, in the nonproliferation realm, three states over the last half-dozen years – India, Pakistan, and North Korea – have either openly demonstrated or proclaimed that they are now nuclear-weapons states. A large number of states from a variety of different perspectives, including prominently the United States, openly, actively, vigorously, and loudly question both the utility and effectiveness of the nonproliferation regime. In the summer of 2005, we witnessed a substantial failure of the latest nonproliferation-treaty review conference – a very acrimonious confrontation between the nuclear haves and the nuclear have-nots – with substantial differences of perception about what the treaty means, what it permits, and what kind of nuclear future lies ahead. As a parallel to all this, we have a complete paralysis of the accompanying multilateral arms control process that has been attempting to govern the world's nuclear affairs for many years. The Comprehensive Test Ban Treaty (CTBT) is dead. The Fissile Material Cutoff Treaty (FMCT), aimed at restricting the planet's ability to produce the material needed to build nuclear weapons, was stillborn, smothered by the combined opposition of the nuclear-weapons states that want to retain the option of acquiring new nuclear weapons.

Our objective is to step back from the immediate crises and examine where we are headed, what is in our interest, and what other alternative futures we can define that would be preferable to the road we are now on.

In short, the existing regulatory regime we call arms control is under significant pressure: the inherited legal regime governing nuclear weapons has deteriorated, even as the number of nuclear-weapons states has spread and even as the existing nuclear powers, or at least Russia and the United States, have with great enthusiasm proclaimed their recommitment to nuclear weapons in the post–Cold War environment. For the moment, I think one can safely say that arms control is dead.

Even if things didn't appear quite so dismal, we would need to question the role of arms control in the aftermath of the Cold War. How can we manage these terrible instruments of violence in prudent and sensible ways that enhance our security and reduce the exposure of the human race to truly cataclysmic outcomes? I think one can reasonably anticipate that if we stay on our present path, the world, ten or fifteen years from now, will have more nuclear weapons, more reliance on nuclear weapons, more nuclear-weapons states, more risk of purposeful or inadvertent use of nuclear weapons, more risk of access to and use by substate actors, and fewer regulations and institutions available to restrain the nuclear-arms policies and postures of the existing nuclear-weapons states.

We cannot deal with this issue by trying to solve small pieces of the nuclear picture – the problems in North Korea and Iran or the "loose nukes" in Russia each require urgent attention, but dealing with these important but discreet pieces does not necessarily give insight into the larger changes in the global nuclear order. At the Academy, we are planning to convene a group of people who, over recent decades, have thought imaginatively about how to control nuclear weapons. Our objective is to step back from the immediate crises and examine where we are headed, what is in our interest, and what other alternative futures we can define that would be preferable to the road we are now on. The Academy did seminal work on these issues at a similarly consequential juncture in the late 1950s. Today, these issues once again deserve – indeed, require – the mobilization of the intellectual resources the Academy can offer. The stakes are high, the risks are great, and the impact on the future of international security will be enormous. Few issues on the global agenda are more consequential. ■

Fellows at the October Induction Ceremony

Donald Lamb (University of Chicago), a Fellow since 2003, joins his brother Frederick Lamb (University of Illinois at Urbana-Champaign), a newly elected member of the Academy

E. J. Dionne, Jr. (Brookings Institution) and John C. Bogle (The Vanguard Group, Inc.)

Ralph Nuzzo (University of Illinois at Urbana-Champaign) and Anna Marie Pyle (Yale University)

New member Jack Balkin (Yale University) with Sanford Levinson (University of Texas at Austin), a Fellow of the Academy since 2001

John Felstiner (Stanford University) asking a question during the morning orientation program for new members