



AMERICAN ACADEMY OF ARTS & SCIENCES

WWW.AMACAD.ORG

# Bulletin

WINTER 2014  
VOL. LXVII, NO. 2



## Academy Inducts 233rd Class of Members

*Class Speakers: Alison Gopnik, Paula Fredriksen,  
Xiaowei Zhuang, Marc Tessier-Lavigne, and  
Phyllis M. Wise*



## On the Arts and Sciences

*Ken Burns and Ernest J. Moniz*

ALSO: Restoring Justice: The Legacy of Edward H. Levi  
Middle East Regional Security Challenges: The View from Turkey  
A View of the Visiting Scholars  
A View from a Visiting Scholar  
Point of View: Talks on Education

# Upcoming Events

---

## FEBRUARY

### 12th

House of the Academy, Cambridge  
*SILA: Staged Reading and Panel Discussion  
about the Future of our Planet*

Featuring:

**Robert Jaffe** (Massachusetts Institute  
of Technology)

**Chantal Bilodeau** (The Arctic Cycle)

**Naomi Oreskes** (Harvard University)

Staged Reading by  
Catalyst Collaborative@MIT

### 15th

Fairmont Chicago, Millennium Park Hotel,  
Chicago, Illinois

*Reception for Fellows and Guests  
with remarks by Alan Alda*

## MARCH

### 12th

House of the Academy, Cambridge  
*A program about "At Berkeley," a new  
documentary by Frederick Wiseman*

Featuring:

**Robert J. Birgeneau** (University of  
California, Berkeley)

**George W. Breslauer** (University of  
California, Berkeley)

**Mark S. Schlissel** (Brown University;  
University of Michigan)

**Frederick Wiseman** (Filmmaker)

## APRIL

### 17th

House of the Academy, Cambridge  
*Growing Pains in a Rising China*

Featuring:

**Elizabeth Perry** (Harvard University)

**Ching Kwan Lee** (University of California,  
Los Angeles)

**Benjamin L. Liebman** (Columbia Law  
School)

**Barry Naughton** (University of California,  
San Diego)

---

*For updates and additions to the calendar, visit [www.amacad.org](http://www.amacad.org).*

## Reminder to Members

### *The Annual Fund*

This year's Annual Fund Campaign will conclude on March 31. To make your gift online, please go to [www.amacad.org](http://www.amacad.org), click on Contribute, then click on the DONATE button. You will receive an immediate electronic acknowledgment that your gift has been received.

Generous Annual Fund contributions from Members help to support all of the Academy's activities, including projects and publications, the website, outreach, meetings, and other activities in Cambridge and around the country. If you have already made your gift to the Annual Fund, thank you. If not, we urge you to participate by March 31.

For assistance in making a gift, please contact the Development Office: 617-576-5057; [dev@amacad.org](mailto:dev@amacad.org).

## Presentations

---

- 2 2013 Induction Ceremony Class Speakers
- 11 On the Arts and Sciences:  
Presentations by Ken Burns and Ernest J. Moniz
- 22 Restoring Justice: The Legacy of Edward H. Levi
- 31 Middle East Regional Security Challenges:  
The View from Turkey



## Projects and Activities

---

- 36 Projects in Science and Technology Policy;  
Security and Energy; and Humanities, Education,  
and Social Policy
- 55 A View of the Visiting Scholars
- 58 A View from a Visiting Scholar
- 60 Point of View: Talks on Education



## Updates on Members

---

- 62 Noteworthy



Clockwise from top left : Xiaowei Zhuang, Phyllis M. Wise, Ernest J. Moniz, Jack Fuller, Patricia Meyer Spacks, Annette Gordon-Reed, David F. Levi, and Ken Burns

## 2013 Induction Ceremony Class Speakers

On October 12, 2013, the American Academy inducted its 233rd class of Fellows and Foreign Honorary Members at a ceremony held in Cambridge, Massachusetts. The ceremony featured historical readings by Sally Field (actor, producer, director, and screenwriter) and Ken Burns (documentary filmmaker). It also included presentations by five new members: Xiaowei Zhuang (Harvard University and Howard Hughes Medical Institute), Marc Tessier-Lavigne (Rockefeller University), Alison Gopnik (University of California, Berkeley), Paula Fredriksen (Boston University and Hebrew University, Jerusalem), and Phyllis M. Wise (University of Illinois at Urbana-Champaign); their remarks appear below. The ceremony concluded with a memorable performance by Herbie Hancock (pianist and composer).



### Xiaowei Zhuang

*Xiaowei Zhuang is Professor of Chemistry and Chemical Biology and Professor of Physics at Harvard University and a Howard Hughes Medical Institute Investigator. She was elected a Fellow of the American Academy in 2013.*

It is my great pleasure and honor to speak on behalf of Class I, the mathematical and physical sciences. I would like to dedicate my speech to these scientists, driven by curiosity, armed with mathematical and physical principles, inventing tools that have transformed our knowledge and changed our lives, often in unexpected ways.

One of the major attributes that distinguishes human beings from animals is that humans use tools in fascinating ways. Scientists are among the most creative tool inventors and users, developing marvelous technologies to explore the wonders of nature. For many of these technologies, their most profound applications were not foreseen at the time of their creation. As a physicist who ventured into biology, I would like to give two examples of physical tools that have transformed life sciences and medicine in unanticipated ways.

Nuclear magnetic resonance (NMR) is one such example. NMR was originally discovered as an interesting physical phenomenon of nuclei in a magnetic field. Later, through its ability to precisely determine the structures of molecules – both chemical compounds and large biomolecules – NMR spectroscopy has transformed chemistry and structural biology. More recently, NMR-based imaging, more commonly known as MRI, has become a powerful method used by doctors to diagnose pathological tissues such as brain tumors. But when Isidor I. Rabi, Felix Bloch, and Edward M. Purcell first detected NMR signals in the 1930s and 1940s, they probably did not anticipate the enormous influence their discovery would have on life sciences. And they surely did not predict how many patients' lives would today be saved by MRI.

The second example, one that is near and dear to my heart, is optical microscopy. Although often debated, the invention of the optical microscope is generally attributed to Galileo, one of the founding fathers of physics. Legend has it that Galileo took inspiration from the telescope that he used to look at the stars in the sky and invented a microscope with which he could study small objects on Earth. It was Antonie van Leeuwenhoek, generally known as the father of microbiology, who popularized the use of optical microscopes in biology. Using handcrafted lenses and microscopes, van Leeuwenhoek discovered bacteria, sperm, and, along with Robert Hooke, the cell. Optical microscopy has since become one of the most widely used methods of investigating the microscopic world of living things. Using modern microscopes today, we can observe signals from objects as small as a single molecule. Recently, the century-old resolution limit of optical microscopy has been overcome through inventions in physics and chemistry. Thanks to these advances, we can now use optical microscopes to see with nanometer-scale resolution how tiny molecules are arranged in cells, which is helping us understand how these molecules function together to give life to a cell. As visionary as Galileo was, he probably could not have foreseen the enormous contributions optical microscopy would make toward our understanding of the living world.

These are but two examples of the vast number of technologies that were originally invented for studying physical matters but ended up changing the way we investigate living systems. Still, many mysteries of life remain too difficult to solve today, due to the lack of proper tools. One prominent example is how the billions of neurons in our brain work together to give us cognitive power – how we think, in other words. The White House recently recognized this question as one of the twenty-first century’s great challenges, and in response, President Obama announced the BRAIN Initiative – Brain Research through Advancing Innovative Neurotechnologies – earlier this year. Clearly, more tools are needed.

As we ponder upon what new tools to invent and what new discoveries to make, let me reiterate that many of the technol-

ing things. I hope that research institutes and funding agencies do not judge scientific research based solely on impact factors for journals in which the work is published, for example. I hope that Congress does not base its funding decisions exclusively on whether or not the research will directly lead to a cure for cancer or other diseases. I may be too greedy here; we first have to hope that Congress will reopen our government.

When I was at the White House listening to the president’s announcement of the BRAIN Initiative as a bold research effort to revolutionize our understanding of the human mind and uncover new ways to treat brain disorders such as Alzheimer’s, I remembered hoping that “understanding the human mind alone” could be sufficient motivation for the initiative. Important as it is to cure devastating diseases like Alz-

**Many of the technologies and scientific discoveries we rely on today came about due to the curiosity of scientists, their innate craving for understanding how nature works. Such curiosity-driven research has advanced science and technology and benefited human well-being in profound ways.**

ogies and scientific discoveries we rely on today were not originally intended for their current applications. Rather, they came about due to the curiosity of scientists, their innate craving for understanding how nature works. Such curiosity-driven research has advanced science and technology and benefited human well-being in profound ways. It is critical for us to remember this, especially now, as funding gets tighter and trendy science becomes both more fundable and publishable. I hope that we still do scientific research because of our curiosity and our pure love of understand-

heimer’s, our curiosity to understand the human mind may ultimately lead to even greater breakthroughs, the effects of which we cannot even begin to fully contemplate.

Let me end with a quote by Antonie van Leeuwenhoek: “My work, which I have done for a long time, was not pursued in order to gain the praise I now enjoy, but chiefly from a craving after knowledge.” Scientists are a curious bunch, whose cravings for knowledge have long served science and society well. Let’s hope it will remain that way.

---

© 2014 by Xiaowei Zhuang



### Marc Tessier-Lavigne

*Marc Tessier-Lavigne is President and Carson Family Professor at Rockefeller University. He was elected a Fellow of the American Academy in 2013.*

I am deeply honored to accept induction into the American Academy of Arts and Sciences and to represent my fellow honorees in the biological sciences. The most pressing issues I can discuss today are the wonderful and timely opportunities to advance human health that lie before us, the challenges that simultaneously threaten our ability to benefit from them, and the steps I believe must be taken to overcome those obstacles to realize the full potential of science to improve the human condition.

Let me start by celebrating the fact that we live in a golden age of biomedical research. The past several decades ushered in a glorious revolution in the life sciences that has created unprecedented opportunities to make rapid progress in understanding, treating, and preventing disease. To give just two examples: today, we can sequence an entire human genome for only a few thou-

sand dollars. This capability, unimaginable twenty years ago, is enabling us to decipher the genetic basis of normal human variation and of diseases, both rare and common. We also can now grow artificial stem cells, providing unprecedented windows into human biology. In my own field, this technology provides the first noninvasive route to generating human nerve cells from

**We must continue to work to reverse the decline in public investment in basic research. History has shown that truly transformative knowledge comes from curiosity-driven research.**

patients with neurodegenerative diseases like Alzheimer's: these nerve cells can be studied in the test tube to understand why these diseased cells die prematurely. Powerful tools like these, and the growing body of knowledge they enable, have the potential to lead to effective medications for poorly treated diseases.

And these opportunities are coming none too soon, because the health challenges facing us are immense. It is true that we have seen great improvements in health during our lifetimes – mortality from heart disease and stroke has been cut in half in the past forty years, HIV infection is no longer lethal but is manageable – yet despite these successes, the growing prevalence of illnesses such as antibiotic-resistant infection, diabetes, and neurodegeneration threatens to overwhelm us. As the population ages, the number of people afflicted with Alzheimer's disease in the United States is projected to triple by 2050, with costs reaching \$1 trillion a year. Without effective therapies, the human suffering and economic toll will be devastating.

Now is clearly the time to take maximum advantage of the huge opportunities for dis-

covery in biomedicine. Yet instead of redoubling our efforts, we are sliding back.

On the government side, funding for biomedical research has been flat for a decade and has lost 20 percent of its purchasing power due to inflation. Scientists spend more time raising money than doing research, and younger scientists are increasingly discouraged from entering research careers. If both

trends continue, we are in danger of wrecking our scientific enterprise, a situation made worse by the current government shutdown.

Meanwhile, the private sector's drug discovery efforts are not making adequate progress. Despite important successes, the number of drugs approved annually by regulators has remained flat for decades, yet the cost to make a drug has doubled every five years, climbing to over \$2 billion, an astonishing amount. High costs result partly from ever-increasing regulatory requirements, but the root problem is in research and development. Companies are now adept at making drugs that modify biological targets, but have a poor record of identifying which targets are best to reduce disease and which patients will benefit most from those drugs. The upshot is that only one in twenty-four expensive drug start-up projects lead to a marketed drug – a huge and costly attrition. And many ailments – for instance, most psychiatric diseases – still cannot be tackled adequately because we do not yet know their underlying causes.

We therefore face a double crisis in generating and in applying knowledge. I believe

we can nonetheless succeed, provided we deal with key funding and organizational challenges. In this context, I offer a few prescriptions for progress, some of which echo points made earlier today.

First, we must continue to work to reverse the decline in public investment in basic research. From my years of experience in the private sector, I can say that industry builds its applications on the fundamental discoveries made in academia. You cannot apply what you do not know, and history has shown that truly transformative knowledge comes from curiosity-driven research.

Second, we must simultaneously encourage and facilitate public/private interactions. For instance, for new therapies, insights from academia are already helping industry do a dramatically better job of target selection and patient selection, keys to reducing attrition and containing costs.

At the same time, while academia must engage with industry, it should not be asked to do industry's job. There is a trend in the highest reaches of government toward favoring applied, rather than basic, research, since it helps secure public support. But if resources are constrained – as they are – and if something has to give, then it should be the public investment in applied, not basic, research. The reason is simple: there are alternate funding sources for applied research – industry, disease foundations, philanthropists – but there is only one significant source for basic research; namely, government. Industry cannot and will not fund it. We must make the perhaps unpopular case that the greatest gains will come if the public sector supports basic research, and industry supports applied research, with both working hand-in-glove to translate research results.

We must also draw on all disciplines, not only biomedicine. We must draw from the physical sciences, for powerful imaging technologies, as Professor Zhuang has explained; from the social sciences, to

understand and encourage behavior that supports good health; and from the arts and humanities, to nourish patients' souls.

Finally, we must free up sufficient resources so brilliant young scientists can launch their careers, even if this constrains senior scientists like those of us here today. If we fail to do this, the younger generation will continue to drift toward other professions, to the detriment of all.

If we can summon the discipline to tackle these challenges, I believe the future will be bright; and so it behooves all here today, individuals of great talent, accomplishment, and influence, to continue to exercise leadership – to make that bright future ours.

---

© 2014 by Marc Tessier-Lavigne



### Alison Gopnik

*Alison Gopnik is Professor of Psychology and affiliate Professor of Philosophy at the University of California, Berkeley. She was elected a Fellow of the American Academy in 2013.*

I am delighted to be here, speaking to the Academy on behalf of social scientists. I am a social scientist myself, but I also study the very best social scientists in the world, namely, babies and young children. That is not a joke or a metaphor; our scientific work over the past few years has shown that babies and very young children learn so much about the world quickly because they implicitly use the techniques of science. They analyze statistics, perform experiments, and then they use that data to construct theories and make causal inferences. They figure out intuitive theories about the world around them, and revise them on the basis of the new data that they have. And not only do they do this deep and profound science, but they do it spontaneously, as part of their everyday play, without even incentives like becoming members of the American Academy.

And like the rest of us social scientists, for babies and young children, the most fascinating, the most important, the most profound problem, the one they work on the hardest, is trying to figure out what is going on in the minds of the other people around them. In fact, from an evolutionary perspective, babies and young children are designed for learning. One of the great puzzles of human evolution is why it is that we have children at all. Most people in the audience have figured out at least the superficial, proximal answer to that question; but, of course, there is a deeper evolutionary explanation. After all, babies are, not to put too fine a point on it, useless. In fact, they are arguably worse than useless because we have to spend so much time and energy tak-

But the downside to that trait is that until you have actually done all of that learning, you are going to be helpless. You don't want to wonder, while the mastodon is charging at you, "How shall I deal with this? A sling-shot, maybe, or possibly a spear?" You want to have all of that learning in place before you actually face the real challenges of being an adult human being.

And that is what we have evolved to do. There is a kind of evolutionary division of labor between children, who have nothing to do but learn and whom we protect and invest in, and we adults, who take the things that we have learned as children and put them to use to fulfill our adult goals. In fact, when computer scientists are trying to create machines that can learn, they use a

**It turns out that if you want a system to learn, and especially if you want a system to be able to learn things that are novel and unexpected, the very best strategy is to first give that system free reign to explore, to look around, to play, and only then narrow it down to solve particular problems.**

ing care of them. And for human beings, our babies are useless for much longer than the young of any other species. We have a much longer period of childhood, of protected immaturity, than any other species. And that extended period of development seems to have been linked in the course of human evolution with our great cognitive abilities.

Why would that be? The answer seems to be that childhood gives us a protected period in which all we have to do is explore and learn. We human beings have a wonderful evolutionary strategy: we can rely on learning. You can plunk us in any new, varied, unpredictable environment and we can learn how to cope with that environment.

similar strategy. It turns out that if you want a system to learn, and especially if you want a system to be able to learn things that are novel and unexpected, the very best strategy is to first give that system free reign to explore, to look around, to play, and only then narrow it down to solve particular problems.

Evolution seems to have used this strategy in its invention of humans, but then we humans discovered it for ourselves in the seventeenth and eighteenth centuries when we actually invented science (and also when the Academy was being founded). What we discovered was that by giving adults, who are not as swift as two- and three-year-olds,

a protected place in which they could exercise their curiosity, explore, and play, we could make discoveries that would eventually provide benefits to everybody, just as the discoveries that we make through sheer curiosity and play as children helped the entire species thrive in evolutionary history.

From this perspective, it is not that children are little scientists; it is more that scientists are big children. Yet recently, this powerful strategy of providing a period of protected, playful, exploratory learning has been under pressure on both fronts. Rather than providing more investment for childhood, we are actually disinvesting in children. Very young children are more likely to live in poverty than any other group: 20 percent of American children are growing up in poverty, and that number is actually increasing. And when we do invest in early childhood education, children and teachers – rather than being able to exercise this exploratory, playful learning – are caught between the pressure of parents, who want their children to go to Harvard, and policy-makers, who want to show that their investments have not been wasted, usually evidenced through standardized test scores. And those same policy-makers are cutting the research budgets of both basic science, which is fuelled by curiosity and a spirit of play, and basic social science, which uses that curiosity and spirit of play to figure out how we ourselves work as human beings.

Alongside the defunding of these curiosity-driven pursuits, there is an increasing pressure on the scientific disciplines to produce immediate and applicable results. The irony is that the biological and psychological sciences that we have used to start to understand young children show how misguided and counterproductive this approach actually is. It is not simply that we would like to be able to do basic research; our science shows that basic research is the way to get to the most interesting and important

solutions to our applied problems. What I would argue is that we should take a page from evolution: if we, in the future, want to thrive in a complicated, unpredictable, constantly shifting world, we should stop trying to make our child scientists be more like grownups, and instead continue to let our grown-up scientists be more like children.

---

© 2014 by Alison Gopnik



## Paula Fredriksen

*Paula Fredriksen is the Aurelio Professor of Scripture Emerita at Boston University and Distinguished Visiting Professor of Comparative Religion at the Hebrew University, Jerusalem. She was elected a Fellow of the American Academy in 2013.*

Art, music, drama; language, literature, and poetry; history, philosophy, religion – these are some of the premier subjects constituting that area of our culture that we designate “the humanities,” the disciplined study of the human experience. As a family of academic disciplines, the humanities are a product particularly of the European Renaissance. Those were the good old days, when “man was the measure of all things.” The products of humanistic scholarship presupposed a certain construction of intellect, or of mind, or of self, as an autonomous “knower.” This idea, in turn, reflected commitments to or presuppositions about the individual as a moral agent freely exercising his or her will. And in these good old days, no chasm yawned between the humanities and science, which

was the disciplined study of the universe. Both stood on a continuum of meaning that in a sense defined Western culture.

That was then. This is now. Despite Descartes’s best efforts, this humanist foundation has eroded. How? We could list the names of those thinkers whose work marks the stages on our road to post-modernism – Marx, Darwin, Einstein; Freud, Wittgenstein, Heidegger – but such a response would itself be “humanist,” an attempt to identify causes through the generation of an intellectual history.

Let me pull the camera further back. Looking at where we are in 2013, what defines the cultural gap between the Renaissance and us, here, now? The answer lies in a huge mosaic of issues, changes, and factors. The one most evident to me is the commercial development of technology. This child of the scientific revolution has grown much more powerful, socially, than its parent. (Creationists use email, too.) Technology indexes man’s control over the universe. And this control – most significantly, in the production of energy – has been rewarded by huge influxes of money and power. It has profoundly affected human society for good and for ill; profoundly affected, mostly for ill, the planet itself. Technology’s rewards – power and wealth – are immediate and quantifiable. More than anything else, it is these developments in the commercial deployment of technology that have displaced humanism. And if humanism has been displaced, *where does this leave the humanities?*

What are the humanities good for? What metric measures their worth? We were told a few weeks ago that people who read Chekhov score higher on psychology exams measuring “empathy” than people who do not. That’s nice. People who read good literature tend to write better than people who do not. This saying seems to commend literature, but it is really a commendation of good “com-

munication skills,” something that many employers look for. That is nice, too. These apologetic efforts interpret and measure the humanities’ practical utility: majoring in English or in comp lit, they urge reassuringly, does not necessarily disqualify you from having a job. I am reminded of the *New Yorker* cartoon wherein a Mafioso addresses his elementary-school-age son and asks, “And how do you expect to be a made man without a good liberal arts education?”

Money complicates this picture in simple ways. Sciences bring huge grants to institutions; the humanities do not. The price of a college or of a university education has skyrocketed. What is the value of a degree that costs over \$200,000 and prepares you for no job? How, practically, can a philosophy degree help you to pay back your education loans? Surely, only the independently wealthy can be indifferent to this problem. The rest can only rejoice if their seventeen-year-old opts for Wharton over St. John’s. *Where does this leave the humanities?*

I was born in 1951. When I was a child, one of the earliest and most significant, most imaginatively liberating leaps forward was the transition from picture books to chapter books. A page of unbroken prose allowed me as a reader to conjure persons and places however I wanted. A vestige of this value lingers in our hesitation to see a film made of a favorite book: we have already pictured the characters in a certain way and don’t want the disruption of seeing them embodied by somebody different. (I have to add that Colin Firth helped me get over this fear with his Mr. Darcy.)

I started teaching in university in 1977. By the early 1990s, I finally acceded to my students’ requests that I assign a textbook. The sources and articles that filled my syllabus were too various for them; they wanted a unified view of the material. By the mid-2000s, I could no longer tolerate doing my own homework assignments because I could

not stand all the visual noise on the textbook page. Sidebars, maps, and graphs; photos, timelines, and study questions: the spread was so congested, so broken by boxes imitating windows on a computer screen, that I could scarcely pick out the exiguous thread of prose supposedly binding them all together.

What had happened? The short answer, I think, is: computers. (We can now include in this class tablets and smartphones.) Reading, too, is a *technē*, a skill that enables control over texts. What I have noticed as an educator is that *the physical and cognitive act of reading has become progressively harder for the generations of students who have passed through my classroom*. Images, sound bites, the staccato communications of social media: this is what students read. Connected prose is

**What I have noticed as an educator is that the physical and cognitive act of reading has become progressively harder for the generations of students who have passed through my classroom. Images, sound bites, the staccato communications of social media: this is what students read.**

laborious. (Grammar is defunct.) Think again of the Renaissance, and wonder: if the very nature of literacy is changing – indeed, if it has changed already – then *where does this leave the humanities?*

My short answer is, I don't know. I am a historian: I understand things only after they have happened. But just as the digital revolution has challenged our idea of what a "book" is, surely all of these seismic changes in our culture and society will alter also our idea of what a "university" is, what a "department" is, what a "major" is, what a "degree" is – and indeed, this is already happening. The modern university is also the brainchild of the Renaissance. It has had

a glorious six-hundred-year run, but what comes next, I do not know.

So I cannot say what institutional shapes the humanities will take in the future; and I do not know what changing standards of literacy will do to humanistic learning. I do know that the humanities help you to grow your soul. They articulate and enrich your experience of living. They connect us with each other, across cultures, across centuries, across generations. This is a wonderful enrichment.

I would like to close by briefly telling a story of two experiences that I had in the past couple of weeks. The first is about me and Homer, the second is about me, Beethoven, and the city of Boston. Book 17 of *The Odyssey*: Odysseus is home, he's mad, and

he's been disguised by Athena to look like a beggar so that nobody, for his own safety, will recognize him. But Athena forgot about one person: Odysseus's dog, Argos. Argos is blind, he's wasted, he's covered with lice, and he's lying on a dung heap, but he hears his master's voice when Odysseus speaks to a palace servant. In that moment, Argos lifts his head, pricks up his ears, wags his tail, and dies. (I also saw *Old Yeller* because, as I said, I was born in 1951.) I sat on my porch, sobbing over the issue of *The New Yorker* that had translated this particular paragraph of *The Odyssey*. My husband asked me, "What's wrong?" I replied, "Homer does have legs. The dog scene still works."

The second experience centered around Beethoven's Ninth Symphony, performed by the Boston Philharmonic at Symphony Hall. Benjamin Zander was conductor, and he spoke about an interesting observation that he had made while reviewing Beethoven's notations about tempo for the Ninth Symphony. Each of the first three movements, if performed at the tempo that Beethoven indicated, lasted exactly thirteen minutes, and the choral movement, the glorious fourth movement, lasted twenty-one minutes, which meant that the entire symphony was brought home in exactly sixty minutes. But the context of this performance of the Ninth Symphony was also special. The first scheduled performance of the symphony had been canceled; it had been slated for Patriots' Day, the day of the Boston Marathon. As a result, more than one hundred of the injured from the marathon bombing were present at Symphony Hall for the rescheduled performance, and so were a goodly number of the first responders. Off Zander went, carrying the rest of us with him, leading the symphony in a majestic gallop. It was all we could do, by the time the chorus entered, to stop from standing. When the symphony ended, everybody jumped up and erupted in applause, and the lady standing next to me, a perfect stranger, flung her arms around me. There was incredible electricity in that room, made possible through music and through human community.

Human interconnectedness. The power of disciplined imagination and of feeling. No matter how our culture goes on to configure itself, people will crave this interconnection. Humans are the hardware, but the humanities are the software. Digital revolutions notwithstanding, we the people have the priority. After all, we were the first World Wide Web.

© 2014 by Paula Fredriksen



## Phyllis M. Wise

*Phyllis M. Wise is Chancellor of the University of Illinois at Urbana-Champaign. She was elected a Fellow of the American Academy in 2013.*

As the chancellor of a major research university, my job is to blend the idealism of 43,000 students with the practicality of running a billion-dollar enterprise with more than 2,500 faculty and 8,000 employees. An institution like the University of Illinois has no shortage of idealism. Every fall, we welcome about 7,000 students who leave their communities and their families to join us and 36,000 other students in the middle of cornfield country. They come from all over – predominantly from Illinois, but also from every state in the nation, and over one hundred countries around the world – and with incredibly different backgrounds. It is our privilege to work with these students, to teach and learn from them during these formative years of their lives. When I think about the students who grace our campus, I am reminded of Daniel Burnham, one of the great architects in the world, from Chicago, who advised, “Make no little

## Higher education fueled the Industrial Revolution and the knowledge economy, and today it provides social mobility to people who may otherwise never dream of becoming leaders of our society.

plans. They have no magic that stir the blood of men.”

When I think about the time that the students will spend with us, I think about the amount of change that will occur during only those four to six years of study. I think about Thomas Friedman, author of *The World is Flat* (2005), and, six years later, *That Used to Be Us* (with Michael Mandelbaum, 2011). Friedman has said that when he wrote the first book, Facebook didn’t exist, tweeting was something birds did, 4G was a parking space, the cloud was what was in the sky, LinkedIn was a prison, and apps were what you did when you wanted to go to college. But despite the rapid pace of change, the mission of academic leaders and faculty remains steadfastly the same.

Our mission is to extend the boundaries of the minds of our students, and to extend the boundaries of what is possible for the faculty so that they can pursue what they must. Our mission is to combine that idealism with practicality. For a leader of a public research-intensive university with eroding support from the state, with revolutionary research and innovations in learning, with rising tuition that is obstructing our wish to provide excellence and access for our students, this is an incredible time in higher education. At a visioning exercise held at the University of Illinois over the last few years, I have asked two questions: what are society’s greatest challenges going to be twenty to fifty years from now; and what is the role of the major public research university in the United States? We gathered information from many people, including our faculty, staff, students, and alums, and

the community leaders in Urbana-Champaign and in Chicago. And we came up with six emerging themes, such as energy and the environment, health and wellness, and cultural understanding.

These themes will frame our strategies over the next several years of how we recruit new faculty and how we develop new courses. Are we ambitious? Yes, we are. But I hearken back to Daniel Burnham: “Make no little plans.” And we are not alone in our ambition; we share it with the great universities of this country, which are together the envy of the world. I believe that higher education’s great contribution to civilization has been to develop the talent of predominantly young people. It fueled the Industrial Revolution, it fueled the knowledge economy, and today, it provides social mobility to people who may otherwise never dream of becoming leaders of our society.

Higher education, particularly at research universities, has transformed agriculture, medicine, communications, energy, our study of the environment, and transportation. And if we plan carefully, higher education will continue to play this role as a shaper of our world. I strongly believe that as educators and academic leaders, we owe it to the people of this world to provide to their daughters and sons the most transformative educational experiences that we possibly can, while we also meet the challenges of society, providing the basic discoveries, innovations, and applications that will make the world a better place for us all. ■

© 2014 by Phyllis M. Wise

---

# On the Arts and Sciences

On October 13, 2013, as part of the 2013 Induction weekend, **Ken Burns**, President of Florentine Films, and **Ernest J. Moniz**, U.S. Secretary of Energy, spoke about the challenges and opportunities for the arts and the sciences.



## Ken Burns

*Ken Burns is a documentary filmmaker and President of Florentine Films. He was elected a Fellow of the American Academy of Arts and Sciences in 2011.*

*Editor's note: Ken Burns's presentation included a preview of his forthcoming film *The Roosevelts: An Intimate History*. The remarks that appear here are from the Question & Answer session that followed the preview.*

### Question

There is so much material. How do you pick it, and how do you figure out the story?

### Ken Burns

Well, this is our job. There is in filmmaking a proverbial cutting-room floor, which one

assumes is filled with the detritus. It is not; it is filled with extraordinarily good scenes that just don't fit in. And most of what we struggled with over those seven years is trying to refine a narrative that a priori cannot be encyclopedic but has to in some ways represent a diversity of things.

The first thing we do is work with dozens of scholars. In fact, of the people who appear on camera and the people who advised us, we had 1,400 years of postgraduate experience in the Roosevelts or adjacent presidential administrations.

We worked with them for many years and then with our own materials, and then we started to shape it all. Inevitably the film will not be everything or capture every nuance, but I think you will be surprised at how deeply it goes. It is a very complex narrative, perhaps the most complex we have yet had to wrestle with. The title is slightly deceptive; it isn't just an intimate history. It is about politics and what was going on.

For us, with the Roosevelts, it was important to have an inner perspective without descending into psychobabble and also represent the larger political-social-military narrative as accurately as we could.

### Question

Why did you choose to focus on the people and less on the political decisions they faced?

### Burns

That is the bias of the selection you saw. I assure you the politics is there in spades. Everywhere, in every episode. From the Depressions that took place, and the class warfare that took place in the 1870s

and 1880s that influenced the developing career of Theodore Roosevelt through to the very last episode with Eleanor fighting for the Universal Declaration of Human Rights in San Francisco at the beginnings of the United Nations. You will not be disappointed.

We felt it was important that these not appear – as they too often do in our studies – to be abbreviated to just a political track. They had to have multiple modes of inquiry. My old alma mater, Hampshire College, likes to say that we can get two things by the triangulation that can take place from multiple perspectives.

### Question

I read that when Franklin first got sick, Eleanor was going through his pockets and found a love letter. She knew he had betrayed her.

### Burns

That is not quite right; that discovery happened three years before. He was stricken in the summer of 1921. In 1918, coming home from an inspection tour as Assistant Secretary of the Navy, he developed double pneumonia. When he arrived after the ship had brought him to New York, Eleanor was helping to unpack and discovered he had been having an affair with her social secretary, Lucy Mercer.

Eleanor had suspected something was going on and had already gotten rid of her. Yet Lucy had somehow joined the Navy and been assigned to Franklin's office. Then the Secretary of the Navy Josephus Daniels said, "wait a second," and he got rid of her.

Nonetheless, apparently, the infatuation, the affair – the only affair – went on.

But she had discovered it three years before, and it was for the rest of her life, as someone says in the film, “the badge of honor of your intimacy with Eleanor Roosevelt.” She extended that badge to many people in her life, rehashing this most horrible of betrayals, which had taken place several years before the polio incident.

ple did back then of Roosevelt, including members of his own party.

Roosevelt did enjoy the luxury of owning both the House and the Senate. Not the Supreme Court, although he would see what he could do about that. But even then there were strange coalitions, and Social Security passes with a great deal of progressivism – a progressivism born in the Republican Party.

### **Too often we apply the template of other periods and temperaments to a contemporary situation and find people lacking or wanting in some huge respect, as many people did back then of Roosevelt, including members of his own party.**

#### **Question**

I would love to hear you speculate about the current political situation based on Roosevelt’s optimism. I believe Roosevelt said something like, “There are those who welcome me and I welcome their hate,” talking about the economic royalists. Some say that the current president ought to take that kind of attitude and show that kind of strength. I am wondering what the lessons of history are: Can you be Roosevelt again, or was it a moment in time that is not repeatable with that kind of presidential leadership?

#### **Burns**

This is the ultimate question. And this is merely one man’s opinion: you cannot be Franklin Roosevelt, because there can be only one Franklin Roosevelt.

Too often we apply the template of other periods and temperaments to a contemporary situation and find people lacking or wanting in some huge respect, as many peo-

ple did back then of Roosevelt, including members of his own party. So there are some very interesting parallels to today. It is stunning the kind of gridlock that Barack Obama faces with regard to even the simplest of things – say, the original stimulus package, which is a fraction of what Franklin Roosevelt was able to do back then in real dollars. One thinks about the kind of speed with which an economic recovery would have been over had the government primed the pump.

Now, many people disagree with me politically and economically about that, and what we try to do in our film is not impose our own sense of perspective on it, but allow different voices to coexist. But I think Barack Obama is very much like FDR. He is a community organizer, and a lot of that is about how you get people to appeal to their better angels, as John Meacham and Abraham Lincoln would say.

These are really complex things. But having the kind of Republican Party that thinks that funding research and development in essential science is frivolous provides impediments.

And let us also not dodge a central issue of my entire body of work: the president is a black man. A good deal of the opposition, a good deal of the code words, the birther movement – all of the obstacles that have been put in the way of his efforts – are based entirely on the color of his skin and not the content of his character or the quality of his ideas.

#### **Question**

Seeing this was a very moving experience for me, and some of those images that you had of Franklin Roosevelt brought me to tears. I was a small child during the Second World War, during which time my father was absent. Your film brought back that experience of looking up to Franklin Roosevelt as a surrogate for my absent father.

#### **Burns**

You hearten me, because I am not interested in excavating the dry dates and facts and events of the past. I am interested in an emotional archaeology.

That does not mean I am interested in sentimentality or nostalgia. But our founders understood correctly that there are higher emotions, and too often in our correct retreat from sentimentality and nostalgia we go merely to the rational world where one plus one always equals two. We do so at our peril, because we miss the power not only of the humanities but also of the sciences, where one and one quite often makes three.

This is what compels our personal lives and our love, our sex, our relationships, our family, our art, our work: all of this stuff has to do with that improbable calculus. John Adams, Thomas Jefferson, James Madison, and others of our founders spoke about the pursuit of Happiness, with a capital H – not the pursuit of things but some other larger lifelong learning that would in turn synthesize and provide the spark – believing that if

human beings were free enough to govern themselves and choose their own faith and pursuits that a new kind of human evolution would take place, one of the mind and of the spirit. That is the pursuit of happiness.

I am a Lincoln man and have been all of my professional life, but I have always seen George Washington as number one. In baseball, it's Babe Ruth; in pop music, it's the Beatles. But then you are always really arguing about who's in the number two position. Lincoln has always held that position for me, but after working on this film, I have to say that Franklin Roosevelt joins him in that second position.

After that you might have to pick up the list at number ten and leave all the rest blank, because the difference between those three extraordinary human beings, those extraordinarily effective politicians, and all the rest is so great. A lot of this has to do, I think, with these higher emotional connections that become the glue that might hold the shards of that dry pottery excavated from some distant and useless past.

### Question

I am curious how you bring the contributions from historians and other academic figures together. Do you have them involved in an iterative way over the entire project?

### Burns

They are involved from the beginning. They may look at initial proposals, advise as to how the structuring might be – not in a filmic sense, but from a kind of thematic sense – and then they are involved in looking at two or three iterations of the script before we even begin to start editing.

Remember, we are out collecting stuff. We shoot first and ask questions later. I don't want to go to David McCullough or Doris Kearns Goodwin or George Will and say,

**Our founders understood correctly that there are higher emotions, and too often in our correct retreat from sentimentality and nostalgia we go merely to the rational world where one plus one always equals two. We do so at our peril, because we miss the power not only of the humanities but also of the sciences, where one and one quite often makes three.**

“Look, can you get me from paragraph two to paragraph three on page seven of episode six?” – which is something too many of my colleagues do. They don't start shooting until after the script is set in stone, and then it is set in stone and there is no corrigibility involved. But we are corrigible to the end.

In fact, at the last screening – what we call a fine cut – we were moving to what we call “lock the picture, stop editing.” We were adding things that came out of conversations we were having with ourselves and with our scholars, just about fine-tuning things. About antitrust back in episode two with Theodore Roosevelt and finding more places where the ghost of Theodore can appear. He dies at the end of episode three, but he is this huge presence. You hear his name mentioned two times in the polio episode and five times in the introduction to episode five, where he has been dead for 13 years.

Many of the scholars who have worked with me – like William Leuchtenburg has for almost 35 years – understand not just the apples and oranges of scholarship but also what we are doing. They have not only brought great scholarship to our films but also helped us understand so much more about our subjects.

And we think we have shown them ways in which the particular fashions in the humanities represent period myopia. In the field I bump up against the most, history, the fashions of historiography have for more than

half a century – until recently – been essentially anti-narrative, at times interested in Marxist or economic determinist theories or semiotics or deconstruction or queer studies.

Strangely enough, the popular forms that have been legitimately denigrated for their superficiality nonetheless, at least as we try to configure them, present possibilities of embracing all of those disciplines, all of those particular insights or ways of looking at or structuring materials.

The new film is not without narrative. It is not without economic, even Marxist-determinist, issues and conflicts, dialectics, that take place throughout the film. Nor is it without a consideration of what we would call today queer studies, or deconstruction, or semiotics, or other things.

We think the abandonment of narrative in the academic academy was a gigantic mistake – for the academy as well as for the rest of us – because no longer does an interest in the stories of our path trickle down as it once did. That is being corrected, but we have had to rely on popular history to return to a sense of a very essential “and then, and then, and then,” which is the building block of any narrative.

The scholars we use – who are, we believe, among the very best in their fields in this particular subject – are our friends from beginning to end. We don't let them go if we feel they have huge concerns: thematically, structurally, or otherwise.

### Question

I am curious about the process you go through to find things: letters, recordings, articles, photos, films.

### Burns

The rules are slightly different, but the scholarship we do, the patience that is required, would in no way shock a scholar, scientist, or someone doing research for a book. We spent seven years on this. If you are doing it quick and dirty, as the History Channel might (which doesn't do history anymore anyway) or Arts and Entertainment, now called A&E (although it is neither), you might be able to assemble everything you need with a few visits to various archives.

We had to spend years. We assembled a database for this film of more than 22,000 images that are all completely described as to their provenance: where they came from, who owns the rights, and a full description of what is taking place in each one. The final film probably has 2,500 still photographs in it.

The same is true of the newsreels and of the talking heads, where a few onscreen appearances might represent three hours of interview transcripts. But with those few appearances, you can have a huge presence in an episode.

I have lived in New Hampshire for the last 35 years. We make maple syrup there. We take 40 gallons of sap to make one gallon of syrup. That sort of process is familiar to scholars and scientists, I believe. It involves a great deal of patience, which is something my medium is not always famous for. We also ask our audiences to reward our work with their attention, which is, in this day and age, a much more difficult proposition.

### Question

How do you avoid schizophrenia when you have multiple projects going on at the same time?

### Burns

It is like your children. I can be up in my office, and when one of my four daughters walks in the door, I recognize her voice. I am making the same film over and over again. That is to say, each film asks a deceptively simple question: "Who are we? Who are these strange and complicated people who like to call themselves Americans? What does an investigation of the past tell us about not only where we have been but where we are and where we may be going?"

So the schizophrenia is avoided by both the similarity and the distinctions: the similarity that these are my girls, and the distinctions that Sarah, Lilly, Olivia, and Willa are about as different from each other as night and day.

### Question

From your perspective in the cinema and a deep sense of history, what is your view of the recent popular movie about Roosevelt on the Hudson? Do you consider it a travesty that trivialized the story, or does it have some redeeming historical value? Second, how do you find out roughly how large your audience is for these fantastic movies compared to the broader American movie-going audience?

### Burns

Let me answer the second part of your question first while I sharpen my knife for the first half.

It is hard to measure and compare motion pictures and their box office with the ratings

for public television. We know that we consistently reach tens of millions of people with a large series. *The Civil War* is still the highest rated. The next is *Baseball*, then *The War* (about World War II), then *The National Parks*, and then *The Dust Bowl* and *Prohibition*. If you take out the British import *Downton Abbey*, we own most of the top five highest-rated programs.

Each day school is in session, *The Civil War* series, which is more than 23 years old, will be shown 2,500 times. *Lewis & Clark*, 1,500 to 1,700 times. *Baseball* about 1,200 times; *The War*, the same. We have pretty good numbers to claim that. Unlike most broadcast television, which is skywriting and disappears at the first zephyr, our films are long-lasting.

*Hyde Park on the Hudson* died, I am happy to say, a very quick death. I had the opportunity to see it at the Telluride Film Festival before its release in 2012. I know a little bit about the story, and perhaps this gives me a kind of righteousness that I should temper before I give you the review I am about to give!

The film postulates that the king and queen of England – who have come to the United States to gauge where their American cousins will be for the coming war – might have gotten lost on their way from Manhattan to a hugely important picnic that takes place at Hyde Park. In the film they end up in some field of flowers. In reality, tens of thousands, hundreds of thousands of Americans lined the road every stretch of the way; there was no danger of being lost.

The film also suggests that Daisy Suckley was part of a harem that included her and two secretaries – Missy LeHand and Grace Tully, as well as his old love Lucy Mercer – a harem that Eleanor Roosevelt looked on with a kind of bemused lesbian inattention. The most egregious thing of all is the idea that Suckley was there to service the president, who is por-

trayed as a randy, lecherous old man. Nothing could be further from the truth.

We can complain and excoriate the liberties that were taken by the filmmaker, while exalting the great performances given by Laura Linney (as Daisy Suckley) and Bill Murray, who played FDR quite effectively, as well as a couple of scenes that were quite wonderful. But we also have to stand back and permit this to happen. I know of one other fellow who took lots of histories, conflated them, merged characters, rearranged

## **John Adams, Thomas Jefferson, James Madison, and others of our founders spoke about the pursuit of Happiness, with a capital H, believing that if human beings were free enough to govern themselves and choose their own faith and pursuits that a new kind of human evolution would take place, one of the mind and of the spirit.**

the dates, and changed settings. His name is William Shakespeare, and we still like him for doing that sort of stuff.

So we want to make sure we leave open the door for this kind of wholesale revisionism and changing of history in hopes that we do not inherit too many *JFKs* and *Hyde Park on the Hudsons*. Unfortunately, we still have to muddle through them in order to get the few people whose license delivers extraordinary truths.

### **Question**

I was touched by your use of the term *emotional archaeology*. How do you negotiate and interact with the living members of the family as part of your research? Do they approach you? Do you approach them? And how was that interaction?

### **Burns**

The “emotional archaeology” phrase was something I said to a reporter when I was trying to explain what I was doing. My first film was an hour-long film called *Brooklyn Bridge*; it was the first time people were using first-person voices, active movement within the frames of things, and complicated sound effects and music. When the reporter asked me why anyone in their right mind should watch a film about a bridge

that wasn’t ten minutes or shorter, I said I had a really hard time getting it down to an hour. (As you know, my profligacy has continued since then, and with my Vietnam project I will subject you to 20 hours.)

With regard to family members: it depends. Sometimes, in intimate stories, family members are hugely important to sort stuff out: when you are able to reach out to people who knew the person and can help flesh them out, that is helpful. That was the case with my Frank Lloyd Wright and Huey Long projects, and in an upcoming film on Jackie Robinson I interviewed his widow, daughter, and surviving son extensively; we have not started editing, but I imagine they will be a huge part of it.

With the Roosevelts, you have two families – two families that were often at war with each other because of the ascendancy

of Franklin Roosevelt. The Oyster Bay Roosevelts had the sense that they were the inheritors of the medal of TR, not this Democrat Franklin, who seemed to be passing them at every point along the road.

Something else that happens in families is that you become prisoners of the stories you have been told and the things you believe. We have found, particularly in this one, that it is very important to triangulate with the historians and the people who have studied your subject.

We have met most of the descendants, we love them, and we hope we have their blessings. But there will be times they will say, “This story wasn’t told,” and we have to answer, “Yeah, because it’s not as important, we think, to the larger narrative.”

But each thing is different. And at many junctures, we considered going to dozens of people from both branches of the family – the Hyde Park and Oyster Bay sides of the Roosevelts – to find some intimacies. At the end we always thought that was the prudent thing to do.

### **Question**

The thing that strikes me about your films is that you bring out the humanity of the central figures, but also the humanity of the people who are living there. Within *The Civil War*, for example, there are so many letters from people in the field; it is not just about the prosecution of the war. How do you go about achieving that kind of balance?

### **Burns**

Well, it goes back to Ecclesiastes and the idea that human nature remains the same. We say “celebrity,” and what you are struggling not to say is “ordinary people.” What you discover is there is no such thing as an ordinary person: the complexity in each of us is worth volumes.

One of the reasons the academic academy retreated, understandably, from narrative is that it was always the history of great men. In American history, it was a series of presidential administrations punctuated by wars. (Because of my parochial and provincial nature, I am limiting my comments to American history. That is my bailiwick, and it makes me even more limited in my confidence to speak beyond it.)

The academic academy quite correctly rejected that model, unfortunately rejecting narrative at the same time, favoring instead a kind of bottom-up story that was going to tell the millions of historic stories of women, labor, minorities, and so-called ordinary people like you and me. What happened was that the pendulum just swung to the other extreme. Some historians said you could write a history of Illinois without mentioning Abraham Lincoln. That cannot happen.

What you want to have is some sort of synthesis. You want one and one to equal three. That is what I am trying to do. And I think that is what you want to happen. You want to have a top-down version – those great men *did* do great things – meeting a bottom-up version that is able to embrace and contain the multitudes, and thus bring in stories about labor, about women.

The approach I try to take with my films permits us to unify them and meet in the middle and to have some sense of both. There is a moment in the Civil War series that speaks directly to this. We started with Abraham Lincoln and then went to the head of the Union Army, then we went down to a corps commander, a general, and then we went down to a division, and then we went down to a regiment, and then we went down to a captain, and then we went down to an individual private. We then went over to an individual private on the Confederate side and took it back up to Jefferson Davis. That is what we try to do in every film –

sometimes literally but more often than not thematically and figuratively.

If you do that, then you have the possibility to develop the kind of empathies, as well as understandings, that come from that triangulation. You only get better. As scientists will tell you, you can fix a point much more accurately if you can triangulate it. In my case, if you do it only one way, you are then subject to the fashions of historiography. And we hope to escape their specific gravity as often as we can. ■

---

© 2014 by Ken Burns



## Ernest J. Moniz

*Ernest J. Moniz is U.S. Secretary of Energy. He was elected a Fellow of the American Academy of Arts and Sciences in 2013.*

There are a lot of comments about the situation in Washington, D.C., right now, particularly around the shutdown and the debt ceiling. I can confirm from the front lines the absurdity of the current situation. If you look at only the science areas, the Antarctic research programs are in great jeopardy, and one of last year's Nobel Prize winners was furloughed last week. At the Department of Energy (DOE), our Energy Information Administration went on furlough on Friday. So now essential information services that are supplied to companies and to researchers across the country – information on things like how much petroleum product we have in storage should a major hurricane occur – have been closed down.

The missions of the DOE are complex. Sometimes we are semi-amusingly characterized as the department of weapons and windmills, quarks and quagmires. We have

four major missions: (1) nuclear security, nuclear weapons, nuclear materials control; (2) windmills, which characterize our work on energy technologies; (3) quarks: we remain the largest supporter of the physical sciences in this country, providing essential tools for both big science and small science, such as light sources, neutron sources, accelerators; and (4) quagmires, which refer to our legal and moral obliga-

to debate what's not debatable." The thesis we have consistently put forward, and on which I believe we are making serious progress in the political environment, is that what we know about the risks of climate change is well beyond what we need to know in order to drive prudent action on the part of the government. We can argue about what we do, how fast we do it, but we are moving beyond the issue of debating the

## What we know about the risks of climate change is well beyond what we need to know in order to drive prudent action on the part of the government.

tion to clean up the mess of the Cold War. The windmills and weapons align with the work of this Academy, particularly Academy projects on global security and energy and the global nuclear future.

Twenty-five years ago, the human genome project was a critically important undertaking. Unknown to many is the fact that this project was started by Charles DeLisi, who subsequently served as the dean of engineering at Boston University. He went from the National Institutes of Health to the DOE to head the research program on health and the environment.

When he saw the kinds of capabilities DOE had for "industrial-type science" – large, high throughput, high computation – he ran a workshop at Los Alamos that was the beginning of the Human Genome Project. The collaboration went all the way through to the end: DOE was responsible for much of the tool development and for three chromosomes being mapped. So we have a history of using our tools to go beyond what you would think of as the borders of DOE's missions.

During my first day in office, the media picked up on a sound bite relevant to the climate-change discussion: "I'm not here

fundamental driver to take action. Now, is everyone in Congress there? No. But we are now unmistakably getting into the issue of "what do we do?"

The statement I am making is not based upon interpreting complex results of complex models. I am not diminishing the importance of those models, but to drive action, it is frankly data and arithmetic. After all, the issue of degrees centigrade – I am not going to argue whether it is one or six – being associated with scales like doubling of carbon dioxide in the atmosphere has been known for well over a century. The data tell you that that kind of a scale is enormously important for the globe.

We know how to count molecules: how many CO<sub>2</sub> molecules are emitted in combustion of fossil fuels. And if we just naively do the arithmetic, it would be just over two decades to reach doubling. Now, we know the carbon cycle stretches that out; there is absorption in the oceans, etc. But the scales are clear. As a basis for prudent action, we don't need to go to the complex models. The trap there, of course, is that many are looking for anomalies to point to, but never with a scientific suggestion as to why the simple counting rules don't apply.

That is a very important part of the argument, and I believe we are making progress, that we have moved onto the next stage. But when all is said and done, we also must remember that carbon dioxide is unique among the greenhouse gases in the sense of its long (namely, centuries' scale) persistence. As the Intergovernmental Panel on Climate Change report said a few weeks ago, we can think of this as leading to a CO<sub>2</sub> emissions budget for any particular level of CO<sub>2</sub> concentrations. If one takes a standard that has been talked about – for example, 450 parts per million – it's about two decades to run out the budget. That is not much time for the energy system.

The energy system is hard to move, but we have to move it, and this decade is critical. We have to make substantial progress in bending the curve of greenhouse gas emissions over the next ten to twenty years.

The energy business is a multi-trillion-dollar-per-year business that is highly capitalized – with huge capital requirements for

highly regulated business with lots of political interest is a persistent reality.

Those are not a collection of characteristics for a nimble system, however, one that we can imagine changing in a short time. It is also why we have to start today, or start yesterday, to make the transition: over this decade-long period, we need to have made substantial progress. That is why this decade will be so critical.

I argue – and this is somewhat controversial in the government – that it is critical to accelerate the transformation of the energy system to a pace that has not been typical. But to accelerate this transformation, we have to work and do work along the entire innovation chain, from basic research to development to demonstration and deployment of the new technologies.

This is where it gets a bit more complicated. For example, loan-guarantee programs, which are supposed to advance technologies beyond where they currently sit in the marketplace: we have an active

### **We have to make substantial progress in bending the curve of greenhouse gas emissions over the next ten to twenty years.**

assets that last a long time. Eighty percent of the business today is fossil fuel. Fundamentally it is a commodity business. So a solar energy source and a coal plant are both providing the same service to the end user: producing light. It is not like the IT world, where lots of brand-new consumer services are being offered. This makes change highly cost sensitive.

This is the framework within which we must make the transformation to a low-carbon world. Energy provides essential services for everything we do. As a result, there is no point in complaining about the nature of the business. That it will remain a

loan portfolio today of nearly \$35 billion to advance a low-carbon world, and we have tens of billions of dollars of remaining authority to do more.

But even Congress itself voted for a loan-loss reserve account, anticipating that clearly we would have some failures (e.g., Solyndra) in a portfolio of this type. Our current projection is that we will not use more than 10 percent of the loan-loss reserve account, which you might assume means a pretty successful risk management process. Of course, in the political arena, having voted for something does not change the underlying game.

The president, at the end of June, did change the game when he put forward in his Georgetown speech a climate action plan (CAP). The plan is lengthy and has three overall large elements. One is to mitigate the risks of climate change, and this means essentially lowering greenhouse gas emissions over time.

Second, and this was a new step that had been avoided for a long time by many, including many in the environmental community: we have to recognize that we are already experiencing some of the impacts of climate change (statistically this is clear). Therefore, even as we mitigate, we have to start focusing on adaptation measures.

Third, we have to collaborate with other countries – China is an obvious example – because in the end, even if we in the United States show some leadership in this, we cannot solve the real problems without international collaboration.

CAP acknowledges that it would be preferable to work with the Congress for legislative remedies; however, the plan is put forward on the assumption that this will not happen in these next years. And so CAP is, roughly speaking, everything we could think of doing using existing executive authorities to advance the program.

A lot of this will be the federal government working with cities and states, where a lot of creativity is actually coming to the fore in terms of advancing climate programs.

As I said, this decade is critical for launching this transformation. Roughly speaking, we have to do three big things. First, we have to raise our game on energy efficiency, on demand-side management. Second, we have to continue, at least for some time, the increasing reliance on natural gas, because the truth is that it has been displacing coal, and that has in turn accounted for roughly half of our CO<sub>2</sub> emissions reductions. We are now back to the CO<sub>2</sub> emissions levels of 1995. Third, we have to innovate. We have

to have the very low-carbon technologies cost-effective and ready to compete in the marketplace by the end of this decade.

A lot is going on with energy efficiency. We have doubled light vehicle efficiency standards up to 2025, and the Department of Energy, working with the Office of Management and Budget, has dislodged a real backlog of appliance efficiency standards.

We also extended the loan program. We have \$8 billion in new loan authority to fund fossil fuel projects that reduce greenhouse gas emissions. We need to address fossil fuels as well as look at renewables.

While a lot of people have not been paying attention, wind, solar, LED, and electric car technologies have been reaching marketplace competitiveness. Clearly some policy incentives have been in place here, but we have always had time-limited incentives. In fact, the natural gas industry had about twenty years of incentives, and obviously now it is running on its own.

In 2012, the largest capacity addition of any single technology in the United States was wind (see Figure 1). On-shore wind now costs about 5 cents per kilowatt-hour in good wind locations. Despite a slight increase in costs a few years ago, the trend is again downward, and the cost reduction over the last thirty years is dramatic.

The Holy Grail of photovoltaic modules has been 50 cents per watt (see Figure 2). The price is now about 75 cents. Over five years, we have seen an enormous drop in these costs, and deployment has been going up; it is still small, but it is going up. Today, a utility can build a large photovoltaic farm for about \$1.80 per watt, which, once you do the arithmetic (assuming a 20 percent capacity factor and a 5 percent cost for capital), works out to about 5 cents per kilowatt-hour – which is very competitive.

With the falling cost of wind and solar energy, business models in the energy industry are being challenged. That is a part

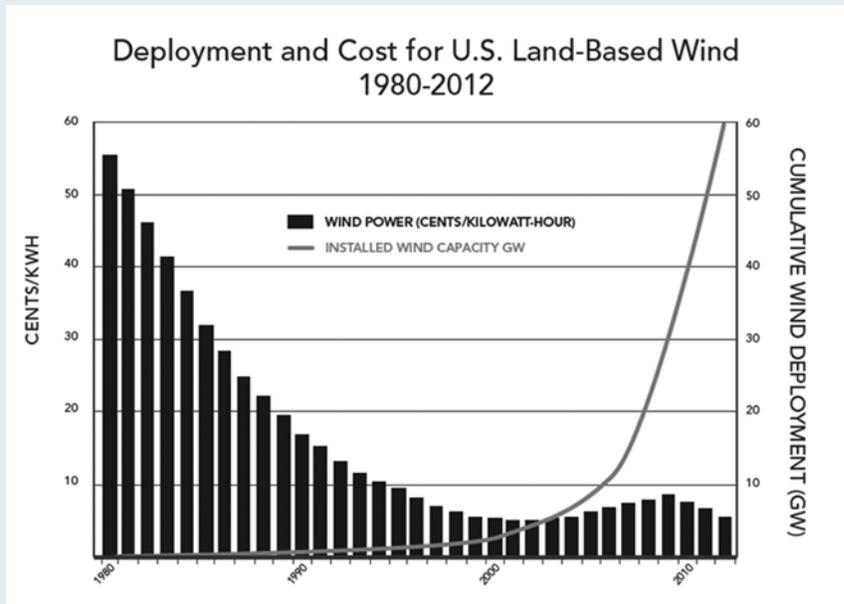


Figure 1

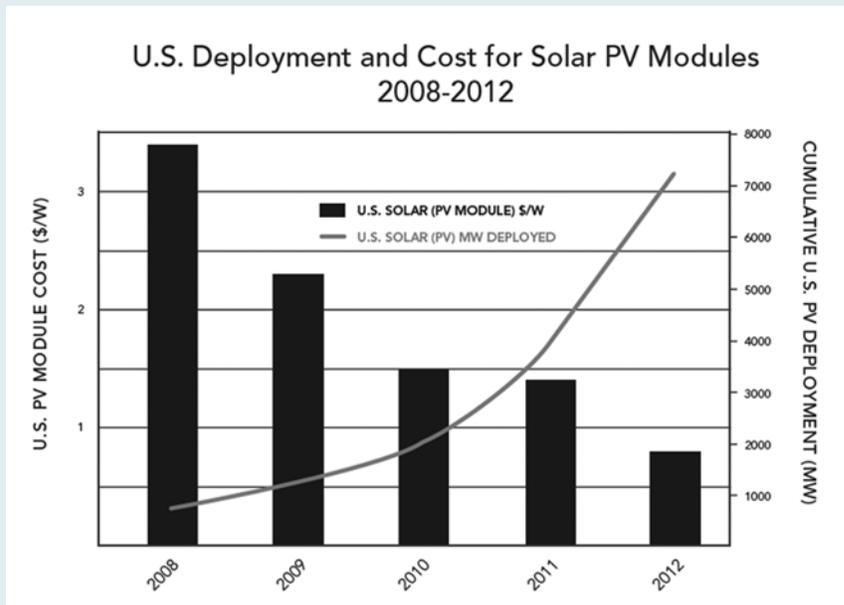


Figure 2

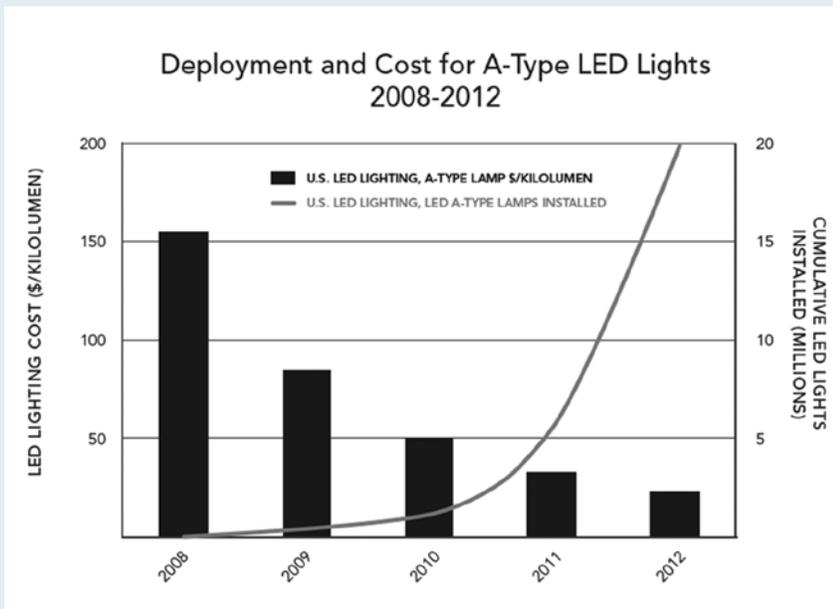


Figure 3

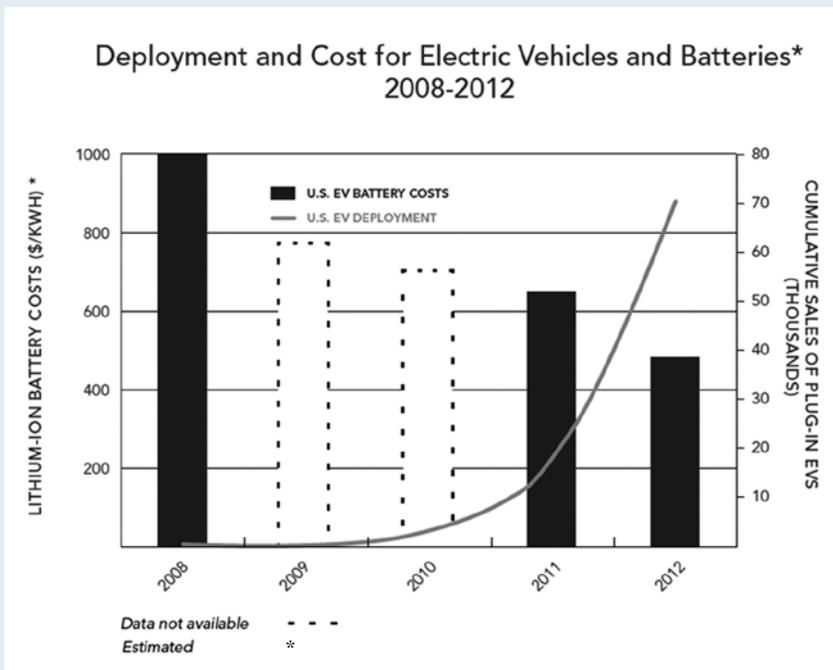


Figure 4

of the transformation that we will need, but it's not always smooth.

For example, in many states today you see a raging battle between established utilities and public policies on “net metering.” If you own a rooftop solar system and you are still connected to the grid – which you must be if you want to sell the power back – who pays? The utilities are now saying we need different rate structures so that everybody pays their fair share of infrastructure costs. I don't know how it will turn out. But it is a revolution. Business models are changing.

The cost reductions for LEDs are rather incredible and are still occurring (see Figure 3). Soon after we published a chart showing that the cost of an LED replacement for a 60-watt incandescent bulb was about \$15, Wal-Mart announced they were selling some LEDs at \$10.

A 60-watt incandescent lightbulb lasts about a thousand hours. The LED replacement gives twenty-five thousand hours of operation. Thus, not only will you save because one replacement LED now costs less than the equivalent twenty-five incandescent bulbs; you will also save about \$125 in energy costs over the lifetime of the LED. At today's LED prices, there is no issue of this being marketplace competitive. When the bulbs cost \$50, price was a big initial barrier. Now with the cost at \$10 or \$5, we are looking at a revolution in lighting.

Finally, the cost of lithium ion batteries for electric vehicles dropped by a factor of two from 2008 to 2012 (see Figure 4). This is still too much for the general marketplace. If the cost is, say, \$500 per kilowatt-hour of storage and you want a vehicle with a substantial range, you might need 70 or 80 kilowatt-hours. That gets to be real money – something like \$40,000 for your batteries. That is called a Tesla. And while Tesla has been a great success, its business model is not quite that of GM or Nissan.

**We are already experiencing some of the impacts of climate change (statistically this is clear). Therefore, even as we mitigate, we have to start focusing on adaptation measures.**

Tesla is following the track of the classic disruptive technology: find your niche market, which is not so cost-sensitive, and then keep driving those costs down. Its initial goal was just to provide a great performance car. And a Tesla is really a great performance car.

Tesla is one of the companies that got a DOE loan guarantee: half a billion dollars. At the time – you might recall that in 2009 the entire U.S. auto industry was supposed to be dead – the loan was viewed as highly risky. Tesla has now paid back the loan nine years early with a premium for the taxpayer – an early repayment penalty! – and in 2014 they will have created three thousand jobs in California, and they are going to start exporting Teslas. When I was in Paris earlier this summer, I learned from the ambassador there that Parisians have placed twenty-five thousand orders for Teslas, because it’s a great performance car.

This is a tough business to move quickly because of its scale, its capital requirements, etc. But don’t look away, because mass adoption of these technologies is not always ten years out. I am optimistic that we can effect this kind of transformation.

The second part of the president’s climate action plan is adaptation. Hurricane Sandy, which was fed by higher-than-normal sea levels and somewhat warmer water, was very destructive of our energy infrastructure.

The DOE is working with the state of New Jersey to design micro-grids – although at 50 – 80 megawatts, they are not so micro – that will restore infrastructure so New Jersey will be much more resilient to future threats to the electricity system and protect key transportation routes. That is an exam-

ple of rebuilding the infrastructure in a smart way. Let’s build it for good economic reasons, but build in resilience to threats like major storms.

We have to take a more integrated view. Features such as the resilience of the energy infrastructure to extreme weather events are part of it, but our infrastructure right now is under three kinds of threats that we must look at. One is extreme weather. A second is cybersecurity. The third is called “kinetic,” which is a fancy word for events such as assaults on electricity substations. The DOE is looking at all of this, bringing it together.

Hurricane Sandy taught everybody another nasty lesson: our energy infrastructures are highly interdependent: electricity, natural gas, transportation fuels, communications. In New Jersey and part of New York, when the grid went down, we could not deliver transportation fuel, partly because the preparation had not been done. We had no standard interconnects at most gas stations so that somebody could bring in a generator and get fuel pumps running.

Other countries do this, and resiliency is going to be another major focus at the DOE over the next three years. We are looking at the infrastructure and the interdependencies so that we can be more resilient during future events, which we expect will get more intense as the globe warms more.

In closing, I repeat that this is a crucial decade for action on climate change, such as accelerating innovation and building resilient energy infrastructure. ■

---

These remarks are in the public domain.

## Restoring Justice: The Legacy of Edward H. Levi

On November 13, 2013, David F. Levi (Dean and Professor of Law at Duke University School of Law), Jack Fuller (former Editor and Publisher of the *Chicago Tribune*), Virginia A. Seitz (Assistant Attorney General for the Office of Legal Counsel in the U.S. Department of Justice), Harold Hongju Koh (Sterling Professor of International Law at Yale Law School), and Mark L. Wolf (Senior Judge of the U.S. District Court for the District of Massachusetts) discussed the legacy of Attorney General Edward H. Levi. The program included a welcome from Leo L. Beranek, former President of the American Academy. The discussion served as the Academy's 2001st Stated Meeting. The following is an edited transcript of the presentations.



### David F. Levi

*David F. Levi is Dean and Professor of Law at Duke University School of Law. He was elected a Fellow of the American Academy of Arts and Sciences in 2007.*

We have a wonderful group of panelists who will talk about the book that Jack Fuller edited, *Restoring Justice: The Speeches of Edward H. Levi*, which collects many of the speeches when my father was attorney general. Our speakers include Jack Fuller, who is the former editor and publisher of the *Chicago Tribune*. He is a Pulitzer Prize-winning journalist and author of a number

of novels and other pieces. He was a special assistant to Attorney General Levi from 1975 to 1977. Virginia Seitz, whom I may call General Seitz, is the Assistant Attorney General in the Office of Legal Counsel in the U.S. Department of Justice. Prior to her appointment in 2011 she was a partner in the Supreme Court and Appellate practice of Sidley Austin, and she was also a law clerk for Supreme Court Justice William J. Brennan, Jr. Harold Koh, my good friend, is the Sterling Professor of International Law at Yale Law School. From 2009 to 2013 he was the Legal Adviser to the U.S. Department of State. He has served as Dean of Yale Law School and is a very distinguished scholar, having written many influential works, particularly in the area of international law. Mark Wolf is a Senior Judge of the United States District Court for the District of Massachusetts. He was appointed to the Court in 1985. He served as Deputy United States Attorney for the District of Massachusetts from 1981 to 1985, and was a special assistant to Attorney General Levi from 1975 to 1977.

It is not hard to draw certain parallels when we compare events today to what we remember experiencing in the mid-1970s. Attorney General Edward Levi came to office right after Watergate. You may remember that at that time many of his predecessors were being prosecuted. The head of the FBI and two former attorneys general

of the United States had been indicted. And there was a general loss of confidence in all establishments. There was a belief that the Department of Justice's prosecutorial and enforcement activities were too partisan. And there was an acrimonious feeling in public discourse that was unprecedented at the time.

Tonight we are going to explore some of the themes that were of concern to my father as he was coming in to the Department of Justice. Jack Fuller will address "Government by Discussion." General Seitz will discuss "A Ministry of Justice." Harold Koh will speak about "The Government and the University/Academy." And Judge Wolf will address the "Attorney General as a Teacher."

---



## Jack Fuller

*Jack Fuller is former Editor and Publisher of the Chicago Tribune and former President of the Tribune Publishing Company. He served as a Special Assistant to Attorney General Edward Levi in the U.S. Department of Justice from 1975 to 1977. Fuller was elected a Fellow of the American Academy of Arts and Sciences in 1991.*

Attorney General Levi attributed the phrase “government by discussion” to Walter Bagehot. Bagehot had written that government by discussion would break the bonds of the ages and set free the originality of mankind. He was thinking mostly about free discussion as a nurturer of discovery and creativity. Attorney General Levi believed in that too, but the reason that the phrase attracted him when he was attorney general was that he saw government by discussion as a way to generate understanding and consensus around very difficult, even tragic, policy choices that had to be made. There were many barriers then as there are now to realizing the ideal of a government by discussion. Secrecy in the interest of national security was one of them. The need

**The challenge that Levi set for himself, for the people around him in the Justice Department and for government in general, was not the repeal of human nature, but the improvement of human behavior by spirited conversation and rigorous mental effort.**

for discretion about advice privately given or confidentially shared was another. A third is the simple desire within government to hold knowledge close, because knowledge is only power when it’s not generally known.

Levi defended confidentiality in government, something that was then, under the name of executive privilege, discredited during the Nixon administration. And in fact, there’s a talk in the book devoted to the idea of confidentiality. He defended not only national security and secrecy in appropriate circumstances but also the use of executive privilege. Yet at the same time he insisted on sharing information – particularly about such things as electronic surveillance and intelligence investigations by the FBI – more information than had never been shared before. He did this because he understood that one of the drawbacks of secrecy is that it makes it impossible to generate public consensus.

But it was not only consensus that Levi sought in the idea of government by discussion. He also liked to cite Cicero’s quote that if you couldn’t understand your opponent’s position you didn’t understand your own. He believed vigorous discussion improved thought. Discussion was the way he made decisions. In fact, sometimes when everyone around him seemed to be in agreement in one direction he would often swing to the other side with such vigor, such intellect, that he would scare you into believing that he might actually go in the direction he was arguing. He did that to motivate us to argue our positions forcefully, but also so that he

would understand his own position better. Levi was not naïve about pursuing government by discussion. Long before he became attorney general he said the following in a speech to the American Jewish Committee (those of you who knew Levi well will recognize this voice):

While I suppose all of us like to talk, few of us like to listen, to have our thoughts jarred, or to reshape our ideas. My grandfather, who was a well-known rabbi, and who certainly liked to talk, came home one day and announced he was feeling very empty. “I have been exchanging thoughts,” he explained, “with Rabbi X – .” My grandfather, if not Rabbi X – , would forgive me this quotation. It aptly illustrates what goes on in most discussions, except that probably we don’t feel empty; we feel full with the same old thoughts we always had.<sup>1</sup>

Government by discussion is an ideal. Like all ideals, it is hard to realize. And the things that made it hard, including this eagerness to speak and unwillingness to listen, are in some sense just human nature. The challenge that Levi set for himself, for the people around him in the Justice Department and for government in general, was not the repeal of human nature, but the improvement of human behavior by spirited conversation and rigorous mental effort.

<sup>1</sup> Jack Fuller, ed., *Restoring Justice: The Speeches of Attorney General Edward H. Levi* (Chicago: University of Chicago Press, 2013), 84.



### Virginia A. Seitz

*Virginia A. Seitz has served as Assistant Attorney General for the Office of Legal Counsel in the United States Department of Justice since her confirmation by the Senate in June 2011.*

It is an honor to be here and to speak about the continuing influence of Edward Levi from the point of view of an Assistant Attorney General currently serving in the Department of Justice. I would like to describe Edward Levi's vision of a Department of Justice that "acts judicially." I have been at the Department for two and a half years and I have been married to a career lawyer who served more than a quarter-century there. So I know that Edward Levi's vision of the Department is the rule by which its career lawyers work every day and the gold standard to which its political appointees aspire.

I want to start with a quick symbolic point about Attorney General Levi's continuing influence. Each new Attorney General and all Assistant Attorneys General at the Department may select the portrait of a former AG to hang in their offices. Of course, the Attorney General chooses first, and so

each morning at the senior leadership gathering in the Attorney General's historic conference room, it is Edward Levi's portrait we all see.

As the location of his portrait illustrates, Attorney General Levi is seen as the person who restored not only jus-

ing the Department's lawyers where that support was warranted; and he spoke with wisdom and moderation about the competing interests he sought to balance in every decision he made. To paraphrase his words, he "radiated the values" of the Department's best self.

### **Attorney General Levi is seen as the person who restored not only justice but the Department of Justice in the wake of events that eroded public trust in many government institutions.**

But the Department of Justice in the wake of events that eroded public trust in many government institutions, including the Department. Every day, in numerous decisions, the Department must deal with the tension that arises because on the one hand, it is led by political appointees who necessarily support the President's program, while on the other hand, it must in significant respects be insulated from political concerns. Levi's shorthand for this necessity was that although the Department is in the Executive Branch, it must always act "judicially," particularly when it is making decisions that require the balancing of important interests – security and privacy, federal rights and state interests, government confidentiality and control over classified information and freedom of the press.

Edward Levi arrived at the Department at a moment when it had lost the trust of the nation by failing to maintain the proper separation between the political sphere and the Department's "judicial" functions. During his tenure, he reacted without over-reacting – he crafted institutional structures to ensure the integrity of the Department's actions; he publicly recognized the faults and flaws in some past actions while defend-

The speeches in *Restoring Justice* illustrate his judicious approach in confronting the difficult legal and legal-policy issues of his day – which are astonishingly similar to the issues that confront the Department today. To read Edward Levi's testimony about a Proposed National Security Surveillance Statute is to read about the competing interests in privacy and security at stake in last year's FISA Amendments Act, and many other statutes that involve information gathering and national security. At the end of a masterful discussion of the relevant constitutional principles, the dignitary, privacy, and law enforcement concerns at issue, and the need to arrive at a solution that balances all these concerns across shifting expectations of privacy and differing threats to security, Levi noted that according to the *New York Times*, his proposal was full of loopholes that would extend the government's powers, while others were saying that it would "cripple our national intelligence effort." By explaining the concerns on both sides, he sought to persuade the public that the Department was engaged in a serious, thoughtful attempt to balance competing concerns and to do so fairly and judicially.

Similarly, to read Edward Levi's essay on the separation of powers is to read a

thoughtful and balanced treatment of the doctrine of executive privilege, all the more powerful because it was written at the time when the doctrine's legitimacy was under attack for abuse by the President. He acknowledged the importance of the public's right to know the workings of government and the potential for abuse in secrecy, but then he built – step by step – a proof of the importance and legitimacy of the doctrine. He explained what he called a “basic truth about human beings” – that they needed privacy in order to give and receive the “candid, objective, blunt and harsh opinions” that he believed were necessary to good government decision making.

These essays are timeless, careful expositions of relevant considerations and competing interests – expositions that candidly acknowledge Attorney General Levi's reasoned judgment about the appropriate balance and the recognition that others may, legitimately, believe that a different balance is preferable.

And as significant as the content of these essays is to their judicial nature, their tone is equally important. Attorney General Levi was careful to describe, recognize, and value all competing interests. And while he sought to demonstrate that his judgments were correct, he allowed for the possibility of discussion and compromise. He valued and accepted nuance and complexity – in one of the passages I personally found most significant, he said, “Powerful tools have been developed to tell us less about more, to simplify what is complex, to substitute immediate impressions for a deeper judgment.”<sup>1</sup> These are words for the Department and all those seeking to act judicially to live by.

Having been at the Office of Legal Counsel for more than two years, I have a much deeper understanding of the place of the Department in the Executive Branch: it

is part of the administration and yet it is tasked with making balanced, careful legal decisions that are not political. The Department's career lawyers take this task seriously and, with each change of administration, they help ensure that the Department's political appointees understand and uphold this standard and the culture that supports it. I have never been at a farewell event for a political employee at the Department where sincere tribute is not paid to the long-term career employees of the division.

Attorney General Levi was legendary for his appreciation of these lawyers and for the judicial nature of their conduct. He understood that nurturing a deep appreciation for their advice and judgment would help ensure that the Department did not lose its way. He rejected the claim that “the struggle for power is what is truly and only genuine.” As he explained, this claim “diminishes reason, disparages the ideal of the common or public good, and adds legitimacy to the notion that law is only one more instrument among many to be manipulated.”<sup>2</sup> Despite what had come before, Attorney General Levi had and frequently expressed a powerful hope for the Department whose integrity he helped restore – that among the people of the United States, there is still a “great trust [in their government] waiting to be reawakened.” That is my experience of the Department of Justice, and the experience of many friends and colleagues who over the years and across many administrations have served there. The Department is not perfect, but it strains to achieve Edward Levi's vision for it.

---

<sup>1</sup> Fuller, ed., *Restoring Justice*, 12.

<sup>2</sup> Fuller, ed., *Restoring Justice*, 45.



### Harold Hongju Koh

*Harold Hongju Koh is Sterling Professor of International Law at Yale Law School. He was elected a Fellow of the American Academy of Arts and Sciences in 2000.*

This is a brilliant book edited by Jack Fuller. To be honest, it made me nostalgic, and I don't get nostalgic for Watergate that often! When you read these speeches you remember there was a time when people in politics in Washington acted like adults, when our government was committed to transparency and working out hard problems together, when attorneys general wrote their own speeches, and when public officials tried to explain complicated ideas to the public. David Levi asked me to say something about what Ed Levi's book means for a professor who goes in and out of the government. I have served for 10 years in the government in my 30 years as a lawyer. What this book gives me is faith that if you are a professor, some of what academics know matters. At a time of national crisis, a professor can make things better. If you have engaged in a life-

long quest for knowledge and truth, you might actually be not just influential but wise. And finally, that universities do have something to teach the government about restoring justice, and that someone who has spent his life teaching and studying law can actually restore the confidence of the rule of law for a battered nation. This was a very inspirational message to me.

There are many interesting things about academia in this book. The most interesting statement that Edward Levi makes is that scholars must have the freedom to be wrong, so they may be right. By contrast, policy-makers don't really have the freedom to be wrong; that's one reason why there is a difference between being a professor and being a policy-maker. The policy-makers need to get it right the first time. On the other hand, I was very struck by the fact that Edward Levi, even after he was at the Justice Department, convened a group of constitutional law professors, including Phil Kurland and Paul Freund, to advise him on the

to express during WikiLeaks. Everyone was excited that Julian Assange and Snowden were leaking huge amounts of information and nobody was talking about the corrosive effect that it was having within the government in terms of confidentiality. In every organization I have been in, particularly in academic life, confidential discussions are absolutely critical, so that in fact the individual right to privacy and governmental confidentiality flow from the same source. This is something that Ed Levi saw and expressed really masterfully in his speech in 1975 and it's something I wish we would say more about publicly now.

The second is about NSA surveillance. Jack Fuller recalls that when he asked the NSA about the Fourth Amendment, their reply was, "Actually we hadn't thought about it." While I'm sure they thought about it more now than then, it is pretty clear that our intelligence agencies have become more focused on their technological capacities than on the rights affected by what they do. After 9/11

### **The key to Ed Levi's contribution to American life is that he believed that the law could be an antidote for even the most pervasive national cynicism.**

Fourth Amendment questions raised by the NSA surveillance issue. It shows that even to this day, academics may contribute valuable ideas to public debate—for example, today's discussion about having a privacy advocate representing the private interest in the debate about the NSA surveillance.

Let me highlight three ideas in the book that jumped out at me as being particularly relevant to things that I had to work on in my recent time at the State Department. The first is the passage that Jack mentioned about the relationship between confidentiality and privacy. This is an idea that we tried to express and Secretary Clinton tried

we built very extensive structures to protect security and we did not develop structures to protect liberty and privacy that were of equivalent strength. Technology moved ahead of law and oversight structures. That might have been bearable for 12 years but now that we are trying to move to a new phase, to a sounder footing, we need to harmonize the structures of security and liberty in a more satisfactory way. That is something that I think Ed Levi saw very clearly.

The final point is about the relationship between cynicism and belief in the rule of law. The word "cynicism" appears a lot in Edward Levi's book, because when he came

**After 9/11 we built very extensive structures to protect security and we did not develop structures to protect liberty and privacy that were of equivalent strength. Technology moved ahead of law and oversight structures. . . . Now that we are trying to move to a new phase, a sounder footing, we need to harmonize the structures of security and liberty in a more satisfactory way.**

in to the Department of Justice, people were understandably pretty cynical. There had been five attorneys general in six years, and a couple of them had been indicted. It was not a great moment for people who said that we are lawyers or we believe in the rule of law. And he even said at his own swearing-in, “We have lived in a time of change and corrosive skepticism and cynicism concerning the administration of justice. Nothing can more weaken the quality of life or imperil the realization of those goals we all hold dear than our failures to make clear by word and deed that our law is not an instrument of partisan purpose.”<sup>1</sup> And so he put forward as an antidote to this cynicism the notions of evenhandedness in the law, a commitment to decency, a suggestion that law is part of life, that a good legal system is like a good family or a good religious institution. It embodies the values that are common to many.

And maybe the most touching speech of all was the one that he gave to the graduating class of the FBI National Academy, to people who are going off to be police officers. He said to them, “You stand where fear and cynicism now meet. But there is also a great trust waiting to be reawakened. By your conduct and skill – and I hope in part by virtue of what you have learned at this

Academy – I am sure you will show the people of America that they may trust in the law and in you.”<sup>2</sup> And that, I think, is the key to Ed Levi’s contribution to American life. He believed that the law could be an antidote for even the most pervasive national cynicism. As Lincoln would say, he was calling all of us as lawyers and academics to the “better angels of our nature.” That is why even today, 40 years later, we should still be listening to him.

---

---

<sup>1</sup> Fuller, ed., *Restoring Justice*, vii.

<sup>2</sup> Fuller, ed., *Restoring Justice*, 4.



### Mark L. Wolf

*Mark L. Wolf is Senior Judge of the United States District Court for the District of Massachusetts. He served as a Special Assistant to Attorney General Edward Levi in the U.S. Department of Justice from 1975 to 1977.*

I would like to offer a more personal perspective because Edward Levi had a very profound effect on me as an individual. In doing so, I will share some thoughts about how I think his history as a teacher substantially contributed to his most admirable legacy.

One of the things that was very striking to people about Edward, and I think it would strike this audience, too, is that his personal staff consisted exclusively of young assistants. In 1975, when he came to the Department of Justice, his staff included Jack Fuller, Douglas Marvin, John Buckley, Ron Carr, and me. We were all 28 years old. We knew that Edward had been a young assistant to Attorney General Francis Biddle during World War II. Nevertheless, we wondered why he only hired people to work closely with him who were each under 30 themselves.

I got some direct insight into this eleven years later, in 1986, when Edward spoke at the memorial for my friend and colleague, a member of this Academy, Judge Charles E. Wyzanski. Charlie Wyzanski had a remarkable career in Washington in the administration of Franklin Roosevelt before he was 30 years old. In a eulogy for Charlie, Edward said that when he became Attorney General he agreed with the judge that he should surround himself with youthful assistants because “the young . . . bring to government a flexibility of mind, an intensity of effort, and an enthusiasm of spirit.” Edward very much valued and wanted these qualities to test what was, fairly or unfairly, characterized as the conventional wisdom of the career officials in the Department of Justice, and to complement the experience and wisdom of presidential appointees like Assistant Attorney General Antonin Scalia and Solicitor General Robert Bork.

Edward fully engaged us in his government by discussion. I could use all my time regaling you with anecdotes concerning

found and enduring influence on me. It is interesting to be reminded of the aspirations he expressed at the FBI Academy because I would say that the most obvious influence Edward had on me was manifest in the case involving James “Whitey” Bulger.

Edward had a portrait of Attorney General Harlan Fiske Stone, a dean of Columbia Law School, hanging in a conference room. In 1924, when Stone created the modern FBI and appointed J. Edgar Hoover as its director, Stone warned that “there is always the possibility that a secret police may become a menace to free government and free institutions because it carries with it the possibility of abuses of power, which are not always quickly apprehended or understood. It is important that its agents not be above the law or beyond its reach.”

As a young man, Edward had seen Attorney General Biddle, whose portrait also hung in his conference room, try to restrain Hoover during World War II when he thought Hoover was a threat to civil liberties. And, as Jack and others have men-

**Edward taught all of his young assistants, and many others, by his example of always being thoughtful, thorough, open, balanced, and, above all else, honorable.**

Edward’s conversations with John Dunlop of Harvard on immigration reform, with many experts on the proposed special prosecutor legislation, which he opposed, and on national no-fault automobile insurance with Secretary of Transportation William Coleman and John Hart Ely, his general counsel, who went on to become dean of Stanford Law School.

Edward taught all of his young assistants, and many others, by his example of always being thoughtful, thorough, open, balanced, and, above all else, honorable. He had a pro-

tioned, a considerable amount of Edward’s energy and time was devoted to dealing with the aftermath of exposed abuses by the FBI, such as the wiretapping of Martin Luther King, Jr., and the illegal acquisition and dissemination of derogatory information about political activists and adversaries.

The scandals did not involve any abuses by the FBI of its confidential informants. Nevertheless, Edward sensed that this was a place of potential danger. Therefore, he developed guidelines for the use of confidential informants. These guidelines rec-

ognized the need for confidentiality even within the Department of Justice. Ordinarily the FBI was not required to tell a prosecutor or any Department of Justice official the identity of a confidential informant. However, if the FBI learned that an informant, without authorization, had committed a crime, the agency was required to give that information to the Assistant Attorney General for the Criminal Division, who would decide whether to continue that person as an informant or instead make him a subject for possible prosecution.

The guidelines were an exemplar of Edward's concept of the Executive Branch "acting judicially." As I wrote in a decision in 1999 concerning Whitey Bulger: "[A]lthough no judicial officer is involved, the guidelines are similar in the approach to the warrant requirement of the Fourth Amendment which requires that decisions concerning whether to authorize invasions of privacy be made by neutral magistrates rather than by those engaged in the competitive business of law enforcement, who do not have sufficient objectivity to be trusted to assess correctly the relative strength of the interest which must be weighed." As I also wrote in 1999, and again in 2001, when I sentenced Bulger's partner, Stephen Flemmi, these guidelines were issued in December 1976, about a month before Edward left office, and were subsequently utterly ignored. The Department has since acknowledged that if the guidelines had been obeyed, the abuses revealed in the Bulger case, including multiple murders for which Bulger will soon be sentenced, would have been prevented and an FBI agent would not now be in prison for being complicit in some of those murders.

I have quoted Edward frequently since I have become a judge. Two weeks ago in Turkey, I spoke to several hundred judges and lawyers from 36 countries about how to balance the interests of security and liberty at

a time of terror. I noted that as John Adams, the founder of this Academy, famously said, "A democracy is a government of laws and not men." I then added that in his remarks when he was sworn-in that Harold quoted, and very consistent with what General Seitz mentioned, Edward said that "if we are to have a government of laws and not men, then it particularly takes dedicated men and women to accomplish this through their zeal and determination, and also their concern for fairness and impartiality."

I also quoted Edward last week in Prague when I was speaking to young judges seeking to establish honest judiciaries in many former Soviet bloc countries. They found Edward's insights inspiring. And to my law clerks, who are very well represented here today, I express my aspirations in a memorandum I give them the first day they come to work, by quoting what Edward said about Judge Henry Friendly at an event in 1976:

The dimensions of the law can be narrow, its directions can be erratic, responsive to whims and fads. The law can be lost in technicality, confused in its purposes. This is not true when law finds its proper spokesman, when the craftsman is combined with the humanist, when the issues of public policy are seen in the light of history, when the spokesman speaks within the defined conception of the role of law, lawyers, and the function of the courts.

Edward brought all of these qualities to the Department of Justice, which he regarded as a ministry of justice. When he died in 2000, the *New York Times* wrote, "In the two brief years that he led the Justice Department Mr. Levi set an example of respect for the Constitution and the rights of Americans that remains a benchmark for distinguished public service today." We are unanimous on this jury and, if you read the book that Jack so brilliantly edited, I am

confident you will concur that it provides convincing evidence that this verdict was just and true.

---

## Discussion

### Levi

Several of our speakers mentioned that maybe this was a moment in time when one could still give a fireside chat or give a talk to FBI agents or address the nation in a fairly complex way, and people would actually pay attention. Of course, we don't know that they were paying attention then but we like to think maybe they were. But could that moment come again? How do we advise the nation so that we can have this kind of dialogue at a more complex level?

### Fuller

It is much more difficult today to get and hold people's attention on anything, let alone something complex and difficult. So in that respect the rhetorical effort has to be even greater. I think that there are certain things that one could do, particularly in the areas of national security and freedom, that get people's attention. I remember the very first day I arrived at the Department. I walked in and the secretary said, "It's about time. They have been waiting for you." I had my bags with me because I didn't even have a place to stay. "Who are they?" I asked. "The attorney general and the FBI director," she said. I went in to Edward's office and he said, "Good, you're here. We can get started. Friday (or whatever day it was) I'm going to be revealing the contents of J. Edgar

Hoover's secret files to the Congress and I want you to write the testimony." Though we know now what the contents of the secret files were, which were a lot less interesting than people imagined them to be, I think openly revealing things that had not been talked about before still gets attention and I would be in favor of doing that now.

### Levi

Harold, is there a real role here for the academy?

### Koh

I think the academy can demand government transparency and I think the attorney general can demand government transparency. And the attorney general can explain his reasoning to the people. This is what is amazing about these speeches. Edward Levi obviously wrote these speeches himself and he explains very complex ideas in a way that makes you understand the subtleties. I don't see that today. I see a lot of unnecessary concealing of legal analysis, which damages trust, and I see situations where when the choice is to be either more transparent or less transparent, the decision always tends toward the less transparent. Many of the internal opinions are presented in extracted form, when in fact it would be better if they were brought forward either through the analysis of the attorney general in a speech somewhere or in testimony somewhere. I think when trust is damaged it is a time for more transparency to heal that damage. To be clear, my experience in the government is that the government does a pretty good job. Real corruption, real incompetence, is more rare than the pundits like to claim. In fact, there is a higher and more impressive level of internal discussion in government than I have seen in other parts of my life, and if people saw that they would feel better about the government.

Let me give you an example: the NSA surveillance issue versus the health care website issue. The exact same people who think that the website designers are totally incompetent are terrified about what the NSA will do with all the information they have gathered. In one area ordinary citizens assume total incompetence on the part of the government; in another they assume total competence.

### Wolf

We see Edward's mind and his voice in these speeches. It was education by example. He led the department by recognizing complexity and nuance and by being transparent in his own thought processes.

### Koh

In the last ten years, how many speeches by a cabinet member do you remember? And how many were written by the cabinet member from the beginning to the end? In my view, it would be far better if we had more cabinet members who have coherent philosophies and can express them themselves in as clear a fashion as Ed Levi did.

### Fuller

It is hard today to recognize alternative arguments and that people of good will might see things differently. But it was hard then, too, and we have to remember that. One of the talks that I find most remarkable was testimony on electronic surveillance that Edward gave to the Senate Select Committee on Intelligence. The testimony goes for 60 pages in the book, and he declined the generous offer of the chairman to do a shorter version. He delivered all 60 pages to whoever was in the room at the time. He delivered this talk at a time when significant courts were questioning the constitutionality of all electronic sur-

veillance without a warrant. We were doing electronic surveillance without a warrant in counter-espionage and in foreign intelligence matters, and we were doing it regularly. This was a very nervous-making time, and you might think that his testimony would therefore be a ringing endorsement of the absolute overwhelming evidence and constitutional argument that supported doing such things. The testimony was not like that. It was about the tensions embodied in the Constitution and the Fourth Amendment. They were hard to resolve then. And it may be even harder now, but just as important. ■

---

© 2014 by David F. Levi, Jack Fuller, Virginia A. Seitz, Harold Hongju Koh, and Mark L. Wolf, respectively



To view or listen to the presentations, visit <https://www.amacad.org/restoringjustice>.

---

# Middle East Regional Security Challenges: The View from Turkey

On November 13, 2013, Memduh Karakullukçu, President and Vice Chair of the Global Relations Forum in Istanbul, Turkey, spoke about “Middle East Regional Security Challenges: The View from Turkey” at the Academy’s Distinguished Speaker Lunch and Roundtable Discussion. The following is an edited transcript of his presentation.



## Memduh Karakullukçu

*Memduh Karakullukçu is President and Vice Chair of the Global Relations Forum in Istanbul, Turkey.*

## Introduction

Because events, disputes, and rapprochement come and go very fast in my region, any snapshot I give today will have a very short expiration date. Just a month ago, Turkey’s and Iraq’s central governments were at loggerheads. And now, after a recent visit by our minister of foreign affairs, the discourse has rapidly shifted and may shift back again. Syria has so many factions, and their alliances and animosities are so complex and in flux, that any facts I can offer will be either inaccurate or of very short-term relevance. The internal dynamics of the Kurds are equally complex. In the last

**The economic vision for Turkey’s regional politics in the last decade has been about ensuring stability and increasing trade with our neighbors. Turkey’s growth model benefited from the stability in the region, which helped our exports and our economic growth during a time of crisis in our traditional export markets.**

few days, we learned that the Iraqi Kurdish leader, Mr. Barzani, will meet with the Turkish Prime Minister in Diyarbakır, Turkey, and that the Syrian Kurds and the Kurdish political party in Turkey are unhappy about this meeting. And this list of incessant twists and turns in the region goes on.

So rather than imposing on you the details of the never-ending shifts of the Middle East and trying to decipher them in their minutiae, let me take a more distant view and share how I am trying to make sense of it all.

Three conceptual models guide my thinking and analysis of the region as I watch the events unfold. The first relates to the internal dynamics of the Arab revolt. The second focuses on the role of the United States in the region. And the third concerns the Turkish role in the region.

## Dynamics of the Arab Revolt

When the Arab revolts started, the question that preoccupied my mind most was whether this would be a “security” decade or an “economic and social development” decade, and what would determine that. At the core of the changes that we have been seeing is the

gap between society’s, especially the youth’s, expectations and the delivered reality about life standards and economic prosperity.

The gap was probably there for a long time but the clear and vocal social expression of that expectation is the novelty in the region. Before this forceful expression, we simply did not know the magnitude even though the expectations had been accumulating over the years. What happened with the Arab revolts is that we now know beyond any doubt that the expectation gap is there, and the odds are it will be an enduring characteristic of the region for some time. How that gap between social expectations and delivery is managed will thus be the key to the region’s evolution.

I look at that gap – how it is evolving, whether it is narrowing or broadening – to project where we are heading. If it had been managed well and smoothly, this could have been a development decade. Instead, I think this will end up being a security, or rather an insecurity decade.

Sound and good solutions to addressing the gap require significant capital injection into the region, as indigenous growth rates and savings rates are bound to be low for

some time. If the world had found a way to channel capital into the region while gradually improving the local business environment, these two dynamics could have reinforced each other and I think we could have managed the gap peacefully. Alternatively or in parallel, we could have also

**The transition from U.S. engagement in global affairs to U.S. *selective* engagement in global affairs will not be easy. We have entered a phase where the United States and the rest of the world will have to develop and crystallize an understanding of that separation and, therefore, the U.S. role in the world.**

sought ways to manage the expectation side of the gap by providing a long-term roadmap that could smooth out and moderate the intensity of the demands over a longer horizon. That would have removed some of the pressure.

Early on, there were some encouraging signals from senior figures in D.C. in the direction of injecting capital. Unfortunately, that did not materialize. And the Deauville process, through which the Western governments and some regional countries could inject capital into these economies, did not deliver very much.

Since the expectation-delivery gap is not being narrowed, the internal social and political dynamics of these countries will inevitably dictate their own outcomes. One alternative is for the political leadership to change the agenda from a focus on economic concerns to a focus on polarizing identity politics, which can be an equally potent social/political force. By magnifying identity polarization and the associated demands that come with it – through religion, sectarianism, and ethnicity – political leadership can shift the attention away from the impossible

economic agenda and garner public support at least from one side of the polarized society. If they cannot close the expectations gap because they do not have the financial/economic wherewithal to do so, politically there aren't really many other viable alternatives. The scenario of offsetting or substituting the

economic gap with magnified identity politics is arguably what we observed in Egypt after the 2012 presidential election.

But the path of identity politics is difficult to sustain because the social frustration with the unresolved economic expectation-delivery gap is compounded by the disappointment of social segments that fall on the wrong side of identity politics. That leaves a third alternative for managing the gap, the more brutal one of simply suppressing it through renewed authoritarianism, which is the traditional approach in the region.

The problem with identity politics or authoritarianism is that they do not appear to be stable if we assume that the heightened demands of the society are there to last. Once the social demand is there, one might be able to play for time through identity politics or by suppressing the public's demand. At some point, however, it catches up with you. What is more, the two solutions of identity politics and authoritarianism create and deepen fractures that make the original problem even more intractable. Eventually, if the consequences of these two

alternative paths cannot be contained, they lead to internal turmoil, erosion of internal security, and, possibly, the erosion of interstate security.

So, yes, I feel this decade is turning out to be a decade of insecurity. Of course, one needs to calibrate this framework for different countries. In places where sectarianism was already deeply ingrained, like Syria or Iraq, you start with a different basis. There it is a short step to instability if you don't manage the whole process well. In places like Egypt and Tunisia, the fluctuations of instability can be contained for some time but not forever. This is where we are now.

Where was Turkey in all this? I have heard the Turkish minister of foreign affairs many times clearly articulating a regional development vision, which was aspirational and sincere. The economic vision for Turkey's regional politics in the last decade has been about ensuring stability and increasing trade with our neighbors. Turkey's growth model benefited from the stability in the region, which helped our exports and our economic growth during a time of crisis in our traditional export markets.

When the revolts began in the region, the Turkish hope was that these countries would be integrated into the world economy through democratic structures and that Turkey would take an active part in the process. Implicit in that belief was the assumption that our Western partners would not let the region slide into the state it is in today.

One can argue that was a high stakes gamble or an unrealistic assessment. When the region took a turn toward sectarianism, authoritarianism, and instability, Turkey was caught somewhat off guard. Arguably, everyone was hoping that somebody else would pick up the tab, so probably we were all caught off guard when nobody in the end did. In any event, Turkish foreign policy has been trying to manage the slide into unknown territory.

The republic's traditional foreign policy has been to keep a healthy distance from Middle Eastern affairs, and the current government has been criticized for diverging from that position in some circles. My reading is that it was an error in calibrating the model I just outlined. Decision-makers hoped the region would rapidly move onto the benign development trajectory. In hindsight, the likelihood that the good outcome would prevail was probably always lower than what most of us thought or hoped.

The region is now fluctuating between identity politics and authoritarianism. In some countries the situation has moved beyond this and turned into a true security crisis. In others, the fluctuation continues. But why did the development trajectory fail in the first place and can it be rescued?

For starters, the expectation/delivery gap was probably unrealistically high from

Can we get back on track? I suspect that the expectations of the population are today being reconsidered, recalculated, and reduced as the societies live through this horrible turmoil. So if and when the region and the world are ready to take on a strategy of integrating these economies, the process will probably start with lowered expectations.

### The U.S. Role

It is widely accepted and expected that the United States will rationalize its global engagements. Normally these decisions are cyclical and can easily be reversed with a new administration. That could be true here as well. But the changes this time seem to be a bit more structural and permanent, driven by political and economic priorities and constraints.

## The geometry of trade interdependence is an important element that will shape Turkey's thinking and thus the long-term stabilization of the region and its integration with the world.

the outset, reflecting years of frustrated expectations. Reducing the gap through economic growth would require very high levels of capital, which were not forthcoming at a time of European and American financial constraints.

For Egypt and Tunisia, the Western actors arguably made a political miscalculation. Political leaders explicitly or implicitly decided that the wiser course was to wait for these societies to stabilize before embarking on any investment. The problem is that the gap was real, intense, and impatient. We did not have the luxury of waiting. Social dynamics would find other less than ideal ways to deal with the gap and they did.

The implications of this shift are still not clear, and I think it will take time before we all adjust to its ramifications. The prioritization will probably require a separation of global security challenges between issues that relate to the workings of the global order and issues of a more regional nature. The global threats, which I will call the contour agenda, will almost certainly continue to receive the attention of the United States. On the other hand, the odds are that the United States will gradually try to extricate itself from the regional/local conflicts.

If the change is indeed structural and U.S. engagement in the world continues to be consolidated, rationalized, and priori-

tized, the implications of the shift need to be considered.

The problem with focusing on contour issues and letting go of the regional and the local is that the distinction between the sets is not clear. This situation was amply demonstrated by the chemical weapons problem in Syria. For a while we thought Syria could be formulated as a regional issue. When chemical weapons came into the picture, it became a global contour issue.

Moreover, actors who wish to gain U.S. support or who want to bring the United States into the game have all the incentives to blur the distinction. So the transition from U.S. engagement in global affairs to U.S. selective engagement in global affairs will not be easy. We have entered a phase where the United States and the rest of the world will have to develop and crystallize an understanding of that separation and, therefore, the U.S. role in the world. This phase will involve uncertainty and the confusion, disagreements, and disputes that go along with it.

This dynamic is already playing itself out in the Middle East. Certain parts of the region embed so much uncertainty as it is that the incremental uncertainty introduced by the changing U.S. role may be simply too much to bear. This is true for the Persian Gulf and for Mashriq.

Of course, as a Turk my threat perceptions may be conditioned to view the existing uncertainty as intolerably high in the region. And it may be the case that unless the United States tolerates these regional turmoils, it may never move to a new regional disengagement mode. This is precisely why it will be an uncertain period in everybody's security and foreign policy calculations. This ambiguity is one of the key trends underlying the current picture; it shapes the sectarian calculations, and it shapes national security calculations and actions.

If the United States successfully extricates itself and limits itself to contour imperatives, we will still need pillars of stability to anchor the region. Turkey, like everybody else, is struggling with the change in the U.S. role and the new demands that this shift will place on others. The Syrian situation, where Turkey expected and desired stronger U.S. engagement, is to some degree a reflection of that struggle. In Iraq, the U.S. withdrawal has created a context where balancing the relations with the central government and the Kurdistan Regional Government (KRG) has become more relevant and complex.

The bottom line is that the reformulation of U.S. engagement appears to be a real process, which is creating incremental uncertainty in the region. Either we assume that this is a transition cost to a new equilibrium, which will be painful, or we decide that the Middle East cannot sustain this extra transition burden and that the resulting fracture and conflicts will inevitably turn into a contour issue for the United States. If it is the latter, the rationalization of the U.S. role in the Middle East may have to be postponed.

My hope is that the debate about U.S. engagement in or extrication from the region will be undertaken candidly with its allies rather than presented as a friendly *fait accompli*. We need to sit down and talk about it clearly. This is not happening. Transactional and immediate issues are taking precedence over the broader debate.

### The Turkish Role

If the U.S. role in the region will be rationalized and if Turkey is potentially one of the key anchors of the trajectory toward integrating the region with the world, we have to take a realistic assessment of what Turkey can do, what it actually does, and what it represents.

Turkey's economy has a regional bias. Trade with the region has grown rapidly

in the last decade, with exports increasing from around 10 percent to nearly 30 percent of all Turkish exports. However, in recent months, exports have come down and, given the volatility, may continue to decline.

Nonetheless, the rapid shift toward the region has created increased Turkish aspirations and economic expectations. Our imagination for future economic growth is much more tied to the region than before. Fifteen years ago our aspirations were predominantly tied to the European market. Though that market is still our largest market, it has decreased as a relative percentage of overall Turkish exports.

On the upside, this rebalancing has served Turkey well after the global recession because it has allowed it to diversify away from Europe. As a result, the stability of the region has become not only a political prior-

**If we want Turkey to have a substantive role in stabilizing and integrating this region with the world, it has to be free from regionally constrained hopes and concerns. A globally oriented Turkey will have a much calmer and much freer hand in dealing with the problems of the region.**

ity for Turkey but a structural and economic priority. If 30 percent of your exports go to the region, you want the region to be stable.

The downside is that this growing economic link also constrains and complicates Turkey's political decisions *vis-à-vis* the region. Reliance on the region for our exports, for our economic aspirations, inevitably impacts our political calculations.

Therefore, the geometry of trade interdependence is an important element that will shape Turkey's thinking and thus the long-term stabilization of the region and its integration with the world.

The other element of economic geometry is energy. Turkey depends on Russia and Iran for 80 percent of its liquid natural gas (LNG) supplies. These supplies are not substitutable, because they are pipeline delivered and there is not sufficient LNG redundancy for us to be able to drop or replace one supplier with another. That interdependence also constrains Turkey's outlook and unavoidably shapes reflexes *vis-à-vis* the region.

If Turkey is to play a role in the stabilization of this area and its economic progress, how we formulate its trade orientation and energy dependence will be critically important. From a strategic perspective, I think for Turkey to become a key actor in stabilizing and integrating this region with the world, Turkey has to be less regionally situated and more globally oriented.

If Turkish economic aspirations are shaped by an export portfolio and, more broadly, an economic structure that are not regionally focused but instead globally diverse, Turkish incentives and instincts toward the global commons will be shaped accordingly. Similarly, if Turkey moves from being an energy corridor to becoming a key node in the global energy network, it will inescapably become one of the strong advocates and custodians of global security. A globally motivated and equipped Turkey will be more free and capable of integrating the region with the world.

## **If Turkey is to play a role in the stabilization of this area and its economic progress, how we formulate its trade orientation and energy dependence will be critically important.**

When thinking about Turkey's role in and outlook for the region, one could conceivably argue that it would be better to maintain and deepen the current geometry of symmetric interdependence between Turkey and the region to ensure Turkey's sustained engagement with the region. But after watching how the internal and external dynamics have unfolded as Turkey entangles itself with the region, I don't think this alternative will serve the purpose. Regional dependence simply constrains, distorts, and burdens the Turkish outlook.

A geometry where Turkey's orientation and economic stakes are global is likely to serve as a much more effective framework for the region's stabilization and economic integration with the world. A regional actor that is structurally drawn into the intractable regional tensions and calculations can hardly serve as a force for constructive change.

### **Conclusion**

The demand for better life standards in the region seems to be the new reality in the Middle East. Turkey has a positive regional vision for the Middle East but was caught off guard after it, along with others, misjudged the timing and uncertainty of changing U.S. engagement and the evolution of the crises. If we want Turkey to have a substantive role in stabilizing and integrating this region with the world, it has to be free from regionally constrained hopes and concerns. A globally oriented Turkey will have a much calmer and much freer hand in dealing with the problems of the region.

At the Global Relations Forum, we hope to begin a discussion with our friends in the United States, Europe, and Asia about the future of the region. I anticipate that the next time we meet I will have more to say on how we can get out of this quagmire. Even better, I hope I can say that the quagmire is behind us and that the region is on the path to economic salvation. I am afraid though the latter is still quite a few years away. ■

---

© 2014 by Memduh Karakullukçu

## Science Policy

### *Initiative on Science, Engineering, and Technology*



#### Neal Lane

*Neal Lane is Malcolm Gillis University Professor at Rice University. He also holds appointments as Senior Fellow at the James A. Baker III Institute for Public Policy and in the Department of Physics and Astronomy. He serves as Cochair of the Academy's Initiative for Science, Engineering, and Technology and as Cochair of the Academy's project on New Models for U.S. Science and Technology Policy. He was elected a Fellow of the American Academy in 1994.*

The American Academy has been concerned about the pursuit of scientific knowledge since the very foundation of the organization. Today, the Academy's Initiative on Science, Engineering, and Technology, which I chair with Charles Vest, † former President of MIT and of the National Academy of Engineering, provides a framework for the Academy's many projects about science and technology policy and the adaptation of science and technology in society.

---

† The Academy mourns the passing of Charles Vest (September 9, 1941 – December 12, 2013).

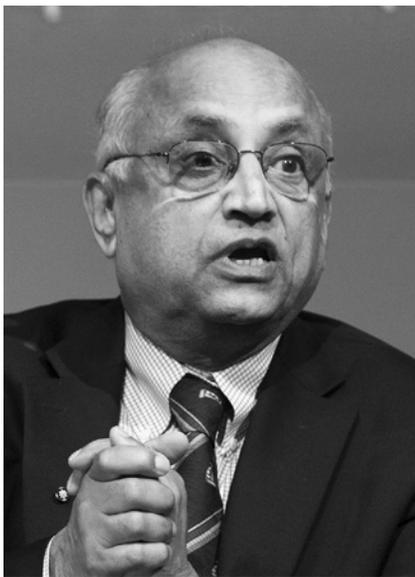
**The Initiative on Science, Engineering, and Technology provides a framework for the Academy's many projects about science and technology policy and the adaptation of science and technology in society.**

Recent Academy projects have examined scientific literacy, the treatment of scientific topics in the university curricula, the evolution of the Internet and its influence on social norms and institutions, and public trust in vaccines. The Academy's ongoing ARISE II project – Advancing Research in Science and Engineering: The Role of Academia, Industry, and Government in the 21st Century – seeks to foster new relationships across the disciplines and between the private and public sectors to sustain a competitive U.S. research enterprise. I would like to welcome Venkatesh Narayanamurti to speak about ARISE II, which he cochairs with Keith Yamamoto.

---

---

## ARISE II



### Venkatesh Narayanamurti

Venkatesh Narayanamurti is Director of the Science, Technology, and Public Policy Program at the Belfer Center for Science and International Affairs at the Harvard Kennedy School. He is also the Benjamin Peirce Professor of Technology and Public Policy and a Professor of Physics at Harvard University. He is Codirector of the Academy's ARISE II project. He was elected a Fellow of the American Academy in 2007 and serves as a member of the Academy's Board of Directors and Council.

The Academy's ARISE I project, which published its report in 2008, was quite important in two respects: it identified high-risk, high-reward research as a critical element of advancing America's research enterprise; and it argued for the support and funding of early-career investigators. In fact, partly as an outgrowth of the ARISE I report, the National Institutes of Health (NIH) launched the NIH Director's Pioneer Awards to support high-risk, high-reward biomedical and behavioral research. Meanwhile, the Department of Energy has increasingly tried to fund young investiga-

tors, reflecting the perceived value of youthful input in a field where the average age of investigators has been steadily rising.

When the ARISE II executive committee met to discuss the next set of challenges, they concluded that there were many issues for which the interplay of the physical sciences, biological sciences, engineering, computation, and medicine could be instructive. Therefore, to learn from each other's disciplines and to see what new connections could be formed, our committee drew its members from these many and diverse fields, producing a far-reaching and stimulating debate about what actually were the major problems ARISE II ought to address. Together, we looked to the origins

of other important arguments in his report, including that societal well-being was closely related to the NIH, and that the development of manpower and of the education system were important roles for the federal government to play in the economic and technological development of the nation. And of course, the National Science Foundation (NSF) owes its very origins to the Vannevar Bush report. The report has served this country well in many ways, helping to establish the continuum of discovery and application; but it is time now that we look again at how the scientific disciplines are faring, and at what more can be done to support their advancement.

On the economic front, increased global competition has caused profound changes,

**The two overarching goals of ARISE II are to move from interdisciplinary to transdisciplinary research; and to develop new policies and networks that bridge the divide between basic research and application, promoting cooperative, synergistic interactions among the academic, government, and private sectors throughout the discovery and development process.**

of the physical sciences, biological sciences, and engineering and we traced that history to the present day, and we concluded that research now is at an inflection point.

The physical sciences and engineering became prominent in the national scene, especially with federal agencies, in response to the great challenges of World War II. The Vannevar Bush report, *Science, the Endless Frontier*, which called for an expansion of governmental support for the sciences, was critical in drawing a connection between the physical sciences and engineering and national security. Vannevar Bush made sev-

especialy in the physical sciences and engineering. The end of the Cold War, the decrease in the emphasis on national security, and the increase in economic competition have led to a new era of globalization. But these events also signaled that the physical sciences and engineering, condensed matter physics and engineering especially, were closely aligned because of work driven by World War II and conducted in the industrial laboratories that were then icons of the surging fields. Bell Labs, IBM, Xerox PARC – these companies no longer perform the level of research that we as a nation require.

The life sciences had a slightly different origin. The pharmaceutical industry actually evolved out of chemistry and mechanical engineering; but historically, there has been very little connection between basic research in biology and the pharmaceutical industry. The pharmaceutical industry is simply not doing the long-term work necessary for broad discovery and invention. There are, of course, counter-examples with biotechnology companies such as Genentech, but nevertheless, there has been an established culture where the discovery is disconnected from its applications.

Computation has become an important branch of science and engineering. In fact, much of the recent progress in biology is due to biologists having become much more quantitative, increasing their ability to process the big data the field produces. Similarly, biology has profoundly influenced engineering, leading to the introduction of synthesized, biologically inspired materials. Both developments suggest the many ways that the physical sciences, biology, medicine, computation, and engineering can learn and benefit from each other.

In light of this, our committee identified two overarching goals and eleven recommendations that strive for new models of integration, cooperation, and coordination across two intersecting planes. You can think about the disciplines of physics, chemistry, engineering, medicine, biology, and computation as one axis, and the stakeholders – industry, government, and academia – as the other axis. Of course, these fields and sectors are intertwined in many complex ways, but the ARISE II committee sought to rethink these two axes and make certain recommendations that may lead to a deeper union both between the stakeholders and between the academic disciplines.

And even though interdisciplinary and multidisciplinary research has been discussed for many years – the field I come from,

material science and condensed matter physics, was inherently always interdisciplinary – we are also searching now for a fundamental union between the disciplines – especially across the physical and life sciences. That's why we coined the word *transdisciplinary*. Interdisciplinary implies preexisting space between disciplines, while we are exploring a deeper connection between the fields of research. And so we defined our two overarching goals: to move from interdisciplinary to transdisciplinary research; and to develop new policies and networks that bridge the divide between basic research and application, promoting cooperative, synergistic interactions among the academic, government, and private sectors throughout the discovery and development process.

Within these goals is a series of recommendations. As one example, we recommend support for shared central research facilities that can bring different groups of researchers and different methods of organization together. And with such core research facilities, we recommend the funding of stable staff appointments to direct them. Such physical common ground can serve as a unifying force for these disciplines. There is no one solution to unifying the fields and creating shared stakeholder interests, but we have developed a collection of such recommendations that together can form a deeper integration.

And of course, we feel that this is both a bottom-up and a top-down enterprise. For example, deans and provosts of universities must provide the resources, as well as act as the conductors to actually facilitate departmental integration. Grand challenges, meanwhile, represent bottom-up action, beginning with researchers identifying the compelling and timely problems that stand at the frontier of knowledge. Such was the case with President Obama's BRAIN Initiative (Brain Research through Advancing Innovative Neurotechnologies),

which began with the efforts of a molecular biologist and have since brought together the NIH, the Defense Advanced Research Projects Agency, and NSF, in the process hybridizing the operational structure of each organization.

The alliance between academia and industry is a major focus of ARISE II's recommendations, which seek to enhance the permeability between the two at all career stages, and to develop policies that focus on the shared interests of academia and industry. We believe industry must change in significant ways and must be willing to participate in research as a partner, or to contribute some of the major funding, as has been the case in the Human Genome Consortium. Of course, with transdisciplinary and integrative research there are intellectual property issues, though these have often been overemphasized. In some cases, especially in research targeting long-term and far-reaching problems, intellectual property, or creating profits for a university or industry, should not be the driving force; rather, the intellectual exchange, resource exchange, the growth of knowledge, and the benefit to society is of principal importance. And in this vein, ARISE II has made recommendations and encouraged bold experimentation for industry, academia, government, and funding agencies. I think that the ARISE II report, along with other reports of the American Academy and the President's Council of Advisors on Science and Technology, will help build enough momentum in these extremely important areas to ensure a bright future for science and engineering in the United States.

---

---

## *New Models for U.S. Science & Technology Policy*



Neal Lane

The focus of the Academy's project on New Models for U.S. Science & Technology Policy – which I cochair with Norm Augustine, retired Chairman and CEO of Lockheed Martin and former Undersecretary of the Army – is the need, in this country, for more long-range thinking and planning in many areas of science and technology (S&T) policy. This project joins a collection of important studies by the American Academy, the National Academies, and other think tanks around the country that have taken on various aspects of S&T policy. These studies have produced reports containing thoughtful recommendations, which stand as the product of the enormous intellectual resources of all of you who are involved in these issues. But the response to these projects on the part of the policy-making apparatus, largely at the federal level, has been disappointing.

The New Models project is bringing together experienced researchers, former university presidents, industrial leaders, and former members of Congress and federal officials – all of whom have experience

in the world of public policy – to see if there might be a better way forward. Our first thought was, why not reorganize government? Well, some of us are not going to be around long enough to see that happen, and I think we have plenty of data to show that if you do indeed reorganize government, it's likely to go badly. So we are looking elsewhere. Our goal is to explore new mechanisms – models – that can raise the national profile of science and technology; promote long-term S&T policy considerations and planning; and help the American people better understand the importance of investments in S&T, research in particular. Without the public's awareness and support, U.S. science and technology is likely to stay "in the weeds," mixed in with all the other policy matters that vie for public attention

research, and academic researchers and their students make discoveries and invent technologies, the results of which are made public through peer-reviewed journals. Private industry takes it from there, and through the technological and business innovation of many forward-looking companies the fruits of research are made available to the American people. The agreement has worked quite well for half a century; but much has changed in that period of time and many of us have begun to question how well this system serves us today.

In 1993, I went to Washington, D.C., as a new Director to the National Science Foundation (NSF), and began to make the rounds of Washington to introduce myself and talk about the Foundation. Many people on Capitol Hill thought the NSF was

**The goal of this project is to explore new mechanisms – models – that can raise the national profile of science and technology; promote long-term S&T policy considerations and planning; and help the American people better understand the importance of investments in S&T, research in particular.**

and political support. While many of these other issues are important, it is our view that advances in science and technology are vital to the nation's ability to deal with most of its other needs and, thus, warrant special attention. Moreover, since research discoveries do not usually pay off right away, it takes patient investments over time to bear fruit – and that is not today's mindset.

As Venky has already noted, at the end of World War II, the Vannevar Bush report, *Science, the Endless Frontier*, spawned a partnership – a kind of agreement between the federal government and the universities – whereby taxpayer money pays for

that place with the Einstein statue outside. I mean, I love the place with the Einstein statue, but it is really not part of the federal government. Fortunately, there were knowledgeable champions of science on the Hill who explained to me that there is a big disconnect: "First of all, the public is not hearing from you scientists. We in Congress are not hearing from you very much either. And we are definitely not hearing from our constituents that they care a lot about these issues. You guys need to straighten this out." This stark message got my attention. I then remembered that former Congressman George Brown had told us much the same

thing over thirty years ago; but at the time we thought, “George is a friend, but maybe he doesn’t quite get it.” Well, he did get it: he saw the problems coming long before the Gingrich revolution, which was not necessarily helpful for science and technology, at least research funding.

Today, the nation’s federal government-university partnership has changed, as industry has steadily increased its funding of R&D – though much more D than R – and its collaboration with universities. Our view, at least my view, is that going forward, the role of industry will be increasingly important, both through enhanced cooperation with universities and by voicing stronger support for federal funding of university research. Otherwise, it is hard to imagine how we can steer this American S&T ship in a more positive direction. The ARISE II report obviously represents an important step. These are large, complex issues that Venky’s ARISE II committee took on. Our job with the New Models initiative is to find a way to ensure that the recommendations of ARISE II and ARISE I, as well as the important reports coming out of the National Academies’ National Research Council, the National Science Board, the President’s Council of Advisors on Science and Technology, and other organizations keep the drumbeat going so that we can move the nation’s S&T policies and policy-making apparatus toward necessary change.

Do we now know what the better way is? Well, frankly, no. But we are having a good discussion about it and we have some big ideas on the table. I can’t be sure which ideas will see the light of day in our final report, but at least we are having an adult conversation about important matters. Our study group has met twice to discuss how to put these ideas into practice. We have held several conference calls and made individual calls on the periphery. Norm and I both agree that publication of the report, some-

time this spring, is only the first step. The next step is to expand these conversations and the ownership of the ideas.

We will likely frame the report around the theme of restoring the American Dream. We used to hear quite a lot about that dream – our parents lived it, and many of us did as well. I don’t think we hear much about the American dream anymore, and we should worry about that. Given that science and technology are central to future U.S. industries, jobs, and the well-being of all Americans, it is worth explaining the connection. Research is only part of the picture, but it is a critical front-end part. No research means no science and technology, hence, no progress as a society. We hope we can make a difference. As with all American Academy projects, we strongly encourage you to support what we are doing, share your ideas, and participate in whatever way you wish.



---

# Security and Energy

## *Committee on International Security Studies*



### 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 serves as Cochair of the Academy's Committee on International Security Studies and as Codirector of the Academy's Global Nuclear Future Initiative. He was elected a Fellow of the American Academy in 2006 and serves as a member of the Academy's Council.*

Let me first offer congratulations to the new members of the American Academy. I can personally attest to the fact that if you let yourself be drawn into the work of the Academy, it can become a significant and gratifying strand in your professional portfolio. What you have in front of you is a potentially life-altering opportunity. For me, over the last decade, a large fraction of my personal research agenda has run through the American Academy, and I am very much the better for it. My role here is first to give you a thumbnail sketch of the Committee on International Security Studies, of which I am privileged to be cochair. And then we will turn to our colleagues to

**The Committee on International Security Studies is setting its agenda for the future, and we are interested in launching projects that address residual nuclear risks, the ethical dimensions of the use of force, and emerging security threats, including cyber security.**

hear about a couple of the projects that we have undertaken in the recent past.

In the summer of 1960, the American Academy convened a study group on the subject of arms control, which was a novel concept at the time. Not even theoretically conceived, much less politically or policy-relevant, this study group evolved into something that came to be known in the intellectual history of the field as the Harvard-MIT Study Group on Arms Control, which was institutionalized at the Academy. The group produced a special issue of the Academy's journal, *Dædalus*, which was subsequently published as an edited volume called *Arms Control, Disarmament, and National Security*. This is now regarded as the so-called bible of arms control. The group also sponsored the work that led to the single most famous conceptual study of arms control, a little book called *Strategy and Arms Control*, by Nobel laureate Thomas Schelling and his then-graduate student Morton Halperin.

This work was absolutely formative, both in developing the concept of arms control and in promulgating it credibly into the policy debate. In fact, in December 1960, there was a meeting in Moscow, something that in those days was so unusual as to be unprecedented, at which the *Dædalus* volumes on arms control were actually briefed to Soviet colleagues. It is often said that arms control is an unnatural act in the sense that it involves a kind of security cooperation with your bitter enemy. So, the initial reaction of

our Soviet friends was not exactly congenial, but over the course of a decade, they came to be converted to this set of ideas.

The taproot was the proposition that even the most bitter enemies, even the most deeply hostile adversaries in the nuclear era shared a common interest in avoiding nuclear war. And that this shared interest could best be pursued in the context of negotiated management of the rivalry and arms race, through which both sides could be more secure and the nuclear balance could be more stable with less expenditure of resources than would otherwise have been the case. By 1972, we had our first major arms control agreement between the Soviet Union and the United States, and that initiated a long era of arms control between these two great rivals, which in fact constituted the core of Soviet-American relations over the better part of a quarter of a century. The work that was done at the Academy can accurately be described as world-changing.

Well, this group came to be institutionalized. By 1963, there was a committee within the Academy. It has existed continuously ever since. In 1982, it came to take its current form and name, the Committee on International Security Studies. We have just passed our thirtieth anniversary. From one decade to the next, we have tried to tackle what we view as some of the biggest challenges on which we have some comparative advantage and where we believe we could contribute to the national debate. In the 1980s, the Academy was a major player in

the so-called Star Wars Debate on missile defense, catalyzed by President Reagan's missile defense initiative. In the 1990s, the Academy sponsored a strong strand of work on the questions of sovereignty and intervention, triggered in part by the protracted crisis in the Balkans and whether or not we should intervene there.

In the last decade, we sponsored work looking at how to order what was called the post-Soviet space. The collapse of the Soviet Union created a vast, unsettled reach in much of Central Eurasia – how were we to think about preserving security and avoiding conflict in that part of the world? John Steinbruner, my cochair of the committee, did a wonderful project on the governance of the military use of space that was very influential in shaping how people think about these management issues.

The committee has met over the last few days and we are beginning to set our agenda for the future, drawing from a number of exciting possibilities. We are interested in addressing what we would describe as residual nuclear risks. Begin with the remarkable fact that almost a quarter of a century after the fall of the Soviet Union, many of the features, attributes, and embedded risks associated with Cold War nuclear postures still exist, still have not been disentangled, still have not been eliminated, and worse, have completely dropped off of the policy agenda. There is no interest or enthusiasm for these subjects at all.

Our committee has substantial enthusiasm for launching a project on the ethical dimensions of the use of force in this new era that we are entering. There are all kinds of new questions arising. In recent years, for example, the United States has arrogated to itself the right to identify and assassinate by drone attack anyone it regards as an enemy. One by one, person by person. Is this a norm we would find acceptable if this proposition were directed against citizens of the United

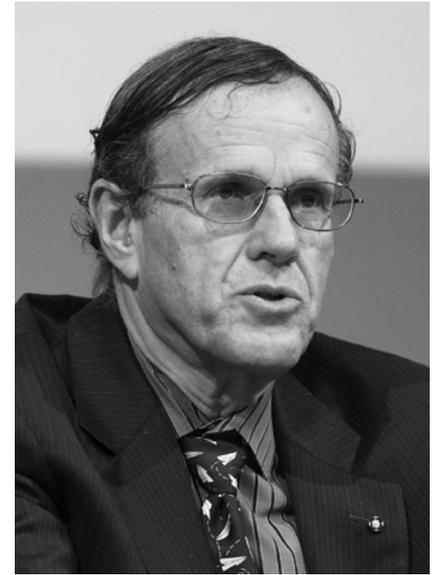
States by command of another state? In its far-flung interventions and global policing activities (for example, in the struggle to combat international terrorism), the United States sometimes believes it necessary to take steps that in many contexts are regarded as lawless. Can the United States break the rules in order to enforce a rules-based system? What are the ethical dimensions of that?

We also are eager to look at emerging security threats, and there is substantial interest in the committee in developing a project on cyber security, which is one of the new areas that has become very fashionable in the security realm. Here again, the United States plays a special role: so far, it is the leading practitioner of the known cyber attacks. So here we are again, at the cutting edge of creating precedents and establishing norms that, if directed against us, we may not find so appetizing.

Recently, the major project that the committee has sponsored in the security area has been known as the Global Nuclear Future project. It is now five years old; and I'm heavily involved in it, along with my colleague, Bob Rosner, professor of physics and astrophysics at the University of Chicago and former director of the Argonne National Laboratory. Bob is next going to describe what we have been up to in the Global Nuclear Future project.

---

## *The Global Nuclear Future*



### Robert Rosner

*Robert Rosner is the William E. Wrather Distinguished Service Professor in the Departments of Astronomy & Astrophysics and Physics at the University of Chicago. He is also on the faculty of the Enrico Fermi Institute and the Harris School of Public Policy Studies. He is Senior Advisor to the Academy's Global Nuclear Future Initiative. He was elected a Fellow of the American Academy in 2001 and serves as a member of the Academy's Council.*

The aim of the Global Nuclear Future project is very simply stated: to explore methods to ensure the safe, secure, and sustainable management of the global expansion of nuclear power. The project has drawn from a broad range of U.S. and international scholars, spanning across disciplines as varied as international security, public policy, and physics. And Steve is being modest – he is the codirector of the project with Scott Sagan of Stanford. I serve as a technical advisor. The project has been funded largely by the John D. and Catherine T. MacArthur Foundation, the William and Flora Hewlett Foundation, the Alfred P.

---

## Can we influence the nuclear policy-building processes of nuclear newcomers, and of other relevant regional stakeholders, to ensure that future national and regional nuclear policies conform to international best practices and treaties on nuclear safety, security, and non-proliferation?

Sloan Foundation, and Carnegie Corporation of New York.

We have focused primarily on the Middle East and Southeast Asia because they are the regions where most of the current interest in expanding nuclear power is today. More specifically, we have focused on countries that are actively engaged in thinking about becoming nuclear. They are not currently nuclear states; they want to be. The classic examples of countries pursuing peaceful nuclear energy programs would be the United Arab Emirates – in particular, Abu Dhabi – and Vietnam. The question is, how do they introduce nuclear power in these areas in a way that is safe and secure, given that their domestic human and technical infrastructure is typically not appropriate for nuclear power? How do they actually go about becoming nuclear, and how do they do it in a way that inspires some sense of confidence in the rest of the world? And how do these countries pursuing nuclear energy programs impact and ultimately shape inter-state relations, regional nuclear governance processes, and the global nuclear order more broadly?

The obvious question for us is: can we influence the nuclear policy-building processes of these nuclear newcomers, and of other relevant regional stakeholders, to ensure that future national and regional nuclear policies conform to international best practices and treaties on nuclear safety, security, and non-proliferation? How do we speak to the relevant stakeholders, making

sure that nuclear power usage ultimately does conform to international standards? That is at the heart of the issue. Right up front you have to admit that the time has long passed where we, as Americans, can lecture other people, if such a time ever existed. The question therefore is, as a practical matter, how do we engage in these discussions without seeming to instruct or condescend from the outside?

Our aim has been to arrive at solutions collaboratively, with the active involvement of all principal stakeholders. We have pursued this goal by engaging in an open discussion with these stakeholders in which we are simply equals. And in these discussions we focus not only on the desirable end-states, the secure nuclear-powered nirvana where we would like to be, but also on how you actually get there given both the political and financial constraints. To help facilitate these discussions, we operate under Chatham House Rule, and in response we have found our discussion partners to be engaged, frank, and focused on solutions.

So what have we actually done? We have convened regional conferences, typically outside the United States, involving key stakeholders, including participants from industry, government, and involved NGOs. In the United States, we have hosted policy briefings with government officials and representatives of the international nuclear industry. And being largely academics, we have also commissioned papers and volumes coauthored by regional experts, fos-

tering academic cooperation and promoting inter-state intellectual exchanges. It is not only our voice being broadcast.

The project started with a two-volume issue of *Dædalus*. That is actually how I got roped into this project, and it's a very effective tool, I must say. That two-volume series of essays was quite definitive in laying out the various aspects of the nuclear fuel cycle and its surrounding issues, and it was not simply singing from one sheet. Contributors spanned the full range of expertise from around the world – from the nuclear industry, nuclear engineering, academia, and the world of diplomacy – and their voices represented anti-nuclear and pro-nuclear perspectives. The two volumes served as a grand debate for the entire subject of nuclear power.

Beyond the *Dædalus* volumes, the Global Nuclear Future project has focused on two large areas: the current and future status of the Nuclear Non-Proliferation Treaty given the expansion of global nuclear power, and also how the combination of nuclear technological innovations and new business model concepts can lower the risks involved with the spread of nuclear power. For example, how do you prevent incidents such as Fukushima? In that case, we have gone to Japan to discuss with the Japan Atomic Energy Agency how they can deal with independent regulation of the nuclear industry, something they had not done prior to Fukushima.

The project has published many publications: *Shared Responsibilities for Nuclear Disarmament: A Global Debate*, by Scott Sagan; *Nuclear Collisions: Discord, Reform and the Nuclear Non-Proliferation Regime*, by Steven Miller; *The Back-End of the Nuclear Fuel Cycle: An Innovative Storage Concept*, by Stephen Goldberg, Robert Rosner, and James Malone; *Nuclear Reactors: Generation to Generation*, by Stephen Goldberg and Robert Rosner; and *Lessons Learned from "Lessons Learned": The Evolution of Nuclear Power Safety After Accidents and Near Accidents*, by Ed Blandford and

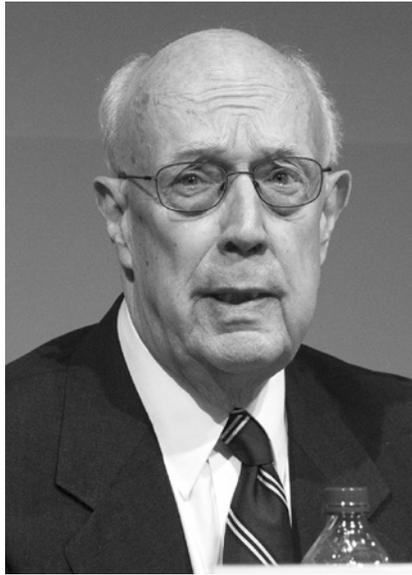
### *The Alternative Energy Future*

Michael May. You can infer from the titles the span of our interests. We have also been involved in the preparatory conferences to the Nuclear Non-Proliferation Treaty negotiations, and we have had regional workshops in the places where nuclear power is being actively discussed, including Abu Dhabi, Singapore, Hanoi, Tokyo, and Hiroshima. And I confess, it has all been both a lot of fun and extremely interesting.

Where are we heading? In 2014, we are going to have a wrap-up workshop in Indonesia in collaboration with the School of Advanced Diplomatic Study, Paramadina University of Indonesia. Symbolically, that wrap-up will represent a transition toward the “locals” actually beginning to take the lead. We are not fully there, but it is an encouraging direction for Southeast Asia. And in collaboration with the Center for Non-Proliferation Studies and the Middle East Network on Nuclear Non-Proliferation and Disarmament, we are also preparing to run a one-week training workshop for journalists on nuclear-related issues, the aim of which is to make sure that journalists feel empowered to cover these subjects and to ensure transparency and accountability when talking about nuclear power. We can't hold a useful public discussion if the participants feel overwhelmed by the content.

Finally, we are looking at new studies, such as the regional impact of the Vietnamese nuclear program. And we are looking at the present state and the evolution of nuclear liability laws that concern how the spread of nuclear power can affect neighboring states. That is a topic that has not yet received much attention. Finally, we are thinking through the security risks posed by “insiders.” These subjects may serve as the germs of new studies and new programs, perhaps even the next version of the Global Nuclear Future project.

---



#### **Robert W. Fri**

*Robert W. Fri is a Visiting Scholar and Senior Fellow Emeritus at Resources for the Future. He is Cochair of the Academy's Alternative Energy Future project. He was elected a Fellow of the American Academy in 2010.*

The interesting thing about the Academy's Alternative Energy Future project is that it is not about energy; it is about people and institutions. If you expect, as we do, that the physical energy system is undergoing a major transition – chiefly to decarbonize – then that process requires major societal advancements in addition to the expected technological advancements. Our present system of energy is closely intertwined with how we function as a society, yet we know far less about the societal consequences of the energy transition than we do about the technology and economics of this change. That is what our project is investigating.

We are proceeding along two lines. One is applying the social sciences to accelerate and enable innovation in the energy system. The other is to understand how insti-

tutions and policy instruments that govern the energy system have to change alongside the energy transition. My cochair, Maxine Savitz, is going to talk about the first, and I will talk about the second.

---

---

## The Alternative Energy Future



### Maxine L. Savitz

*Maxine L. Savitz is retired General Manager of Technology Partnerships at Honeywell, Inc. She currently serves as Vice President of the National Academy of Engineering and Vice Chair of the President's Council of Advisors for Science and Technology. She is Cochair of the Academy's Alternative Energy Future project. She was elected a Fellow of the American Academy in 2013.*

This month marks the fortieth anniversary of the Arab Oil Embargo, an embargo that doubled oil prices in the United States. Though gasoline was still well under a dollar per gallon, even with the price increase, the embargo triggered fuel shortages and long lines at the gasoline pumps. Moreover, it made us aware of what kind of energy we used to heat, cool, and light our buildings and offices; run our factories; and move freight and ourselves. The efficient use of energy in buildings, industry, and transportation became one of the solutions to these growing concerns. By efficient use of energy, I mean providing the same service with less energy. Energy efficiency has since made major contri-

**The work of the Alternative Energy Future project has shown us that the energy policy community and the social sciences community need to talk and work together, and policy-makers must have improved access to existing social science research on energy.**

butions to our needs, but it has not yet reached its potential.

Recent studies by the National Research Council, McKinsey, and Deutsche Bank have identified enormous potential for further improving the efficiency of energy use in the United States through a combination of technology adoption and policy actions. Such a combination could reduce energy use from what we currently use by up to 30 percent by 2030 in all regions of the economy, and especially in buildings and in transportation. But significant hurdles remain, many of which have little to do with the technology and cost and performance, and much more to do with the lack of understanding of how the technologies succeed, first in the marketplace and then in the hands of the public. These challenges inspired the Alternative Energy Future workshops that we held beginning three years ago. The workshops included a number of participants from industry, including the head of Honeywell's Buildings Automatic Controls, who reported that 80 percent of the people who buy a programmable thermostat, which is three or four times the cost of the little round ones, never use them. That incredible investment in dollars, technology, and energy is going unused.

In November 2010, the president's Council on Science and Technology issued a report to the president on accelerating the pace of change in energy technologies through an integrated center for energy policy. I cochaired that report with

now-Secretary of Energy and Academy Fellow Ernie Moniz. One of our recommendations was that the Department of Energy, with the National Science Foundation, should initiate a multidisciplinary social science research program that will provide critical information and support for policy development that advances the diffusion of alternative energy technologies. The research program should fund experts from the physical sciences, engineering, economics, sociology, public policy, international relations, business, and the other disciplines. Questions requiring rigorous study include: how and why are advanced energy technologies, both on the demand and supply side, accepted or rejected by the consumers or suppliers? What are the barriers to adaptation and adoption? Will the public accept a specific technology? What market conditions are needed for technology to compete?

After the report was issued, Bob and I visited with Steven Koonin at the DOE and Cora Marrett at NSF to discuss implementing this recommendation. That meeting led to funding from both agencies for us to start the Academy's Alternative Energy Future study. Over the last three years, we have held several workshops, published two issues of *Dædalus*, and authored the report *Beyond Technology: Strengthening Energy Policy Through Social Science*. This work has shown us that the energy policy community must recognize the value of social science, and social scientists must develop a better

understanding of the needs of the policy community. The two communities need to talk and work together, and policy-makers must have improved access to existing social science research on energy and language that energy policy-makers can understand. Again, it is about communication.

Collaboration between the two communities should focus on and prioritize specific research and energy needs. With continuous support from NSF, we held a workshop in Washington, D.C., a year ago that brought together investigators from government, academia, and industry to discuss novel approaches to understanding and overcoming some of these barriers, and to explore the lessons learned. An additional objective of that workshop was to explore how the goals could be reinforced through the creation of a research coordination network that would be composed of people who were being funded currently by both the DOE and NSF, a group you could count on less than two hands. So, we decided to work with seven projects that were underway. These included a project at Stanford, funded by ARPA-E, which was the only social science project funded out of 3,900 total project applications. The Energy Behavior Institute at the Stanford Precourt Institute for Energy has twenty research projects underway, and two-thirds of the staff and researchers are social scientists.

We have selected projects related to photovoltaics, for acceptance by both utilities and consumers. And the Climate Decision Making Center at Carnegie Mellon, funded by NSF, is studying the utilization of social science research on sustainability and energy. The work will be enriched by participation of a project from Columbia University, the Woodrow Wilson Fund, and Avista Corporation, a utility in the Northwest that gets the deliverers of energy involved. We met with John Holdren and others at the Office of Science and Technology Policy, in addi-

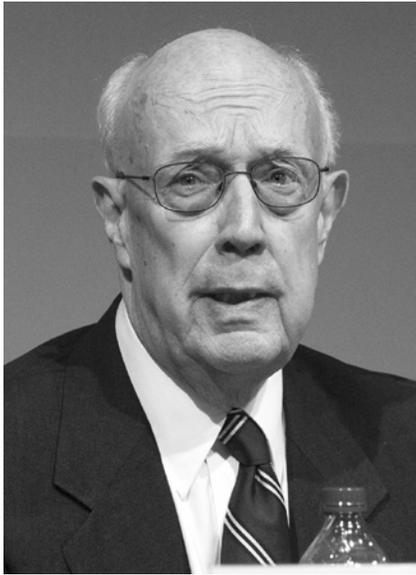
tion to other staff in the Executive Office of the President, and there was agreement on the goal that this research coordination network be used to design and test methods to evaluate how effectively this research is being integrated into existing energy policies – sort of as test cases. Holdren encouraged our work, and we have gone on to talk to Dave Danielson, Assistant Secretary of DOE for Efficiency and Renewables, who requested a two-page proposal and for us to meet with some of his staff.

But we have not limited our partners to the federal government; states have been active participants in these issues as well. This summer, the New York State Energy Research and Development Authority (NYSERDA) issued a solicitation for New York State pilot projects involving engineering and social science, with awards totaling \$400,000. And we have been talking with NYSERDA about holding a workshop with their grantees, along with federal grantees, to evaluate how these projects are going and to allow the grantees to communicate with each other. It has been a fascinating journey so far, and I want to thank John Randell and the staff at the Academy for their tremendous support throughout the whole thing.



---

## The Alternative Energy Future



Robert W. Fri

As I mentioned, the second element of the Alternative Energy Future project involves institutions and policy. The premise is that the existing institutions and policies in place to operate and govern the energy system are built for today's energy system, not for the system we would like to have thirty or fifty years from now. So what *should* those policy instruments and institutions look like?

In order to begin to get a grip on this somewhat fuzzy question, we first tried to describe the nature of the issues in more detail in one of our issues of *Dædalus*. A number of authors contributed wonderful articles exploring a variety of questions, such as in what institutional setting does the renewable energy industry flourish? (I will tell you, it has very little to do with whether renewable energy resources are anywhere nearby.) Or how can you negotiate international arrangements for climate change when you cannot achieve a grand bargain? In what ways do existing institutions hinder the effectiveness of economic incentives like cap and trade, which strives to change the energy system? One essay also argued that

**If the transition in the physical system of energy is going to take decades, how do you create a policy framework that will stand up over time and continue to push the system in the direction that you want it to go?**

Elinor Ostrom's idea of a polycentric system of governance may be more appropriate for the new energy system than the hierarchal system of government that we have today, and another essay looked at the question of larger-scale sustainability and what constraints that puts on the energy transition.

Following this broad exploration, we decided to take one of these issues and dig into it more deeply. We chose policy durability and asked the following key question: if this transition in the physical system of energy is going to take decades, how do you create a policy framework that will stand up over time and continue to push the system in the direction that you want it to go, but that is also sufficiently adaptable and sufficiently capable of taking onboard and using the vast amount of new information that will be developed over the period? An extraordinary group of scholars faced this question in our Alternative Energy Future workshop held earlier this year, and we drafted a consensus statement. We agreed that despite the complexity of the problem, and the need for more research, we knew enough to list three or four necessary conditions for policy durability that are actionable by policy-makers today. So we have an immediate, actionable plan and we have troops on the ground to execute it, in addition to a conceptual research agenda.

Both of these approaches have resulted in a particularly good reception in virtually all quarters. These issues resonate with policy-makers, who worry about how to keep the show on the road. They also resonate with a research community that is interested in

contributing their research to these kinds of issues, and who also want to ensure that policies and infrastructure support their innovations. There has been some public interest in the project, too, with ideas from the project appearing in both *The New York Times* and on *The Huffington Post*. We are going to push ahead with these ideas, and there are now two main tasks in front of us. One is to develop an actual follow-on research agenda on policy durability with some of the scholars who attended the earlier workshop, and to try to get that research funded. And the other is to organize the symposium early next year that we hope will bring together environmental program officers of the Energy Foundation, the Rockefeller Brothers Fund, the Sloan Foundation, and the Bullitt Foundation and encourage them to integrate the tools of social science in their programs.

We think these paths that we have been following have a future. We started the project with a simple premise, that the society is going to be affected by the transition in physical energy systems, and exploring that premise has produced some very interesting and useful issues and opportunities. We have been very pleased with the favorable reception we have received so far, and hope that the policy-writing and research continues in new communities, and that we may continue to follow this trail to see where it leads.

# Humanities, Education, and Social Policy

## *Commission on the Humanities and Social Sciences*



### Philip Bredesen

*Philip Bredesen served as the 48th Governor of Tennessee from 2003 to 2011. He is a member of the Academy's Commission on the Humanities and Social Sciences and the Lincoln Project. He was elected a Fellow of the American Academy in 2012.*

The Commission on the Humanities and Social Sciences is much newer than the other projects you have heard about today, but it is already creating a model for projects the Academy could pursue in the future. The genesis of the Commission was about two-and-a-half years ago, when two senators, Lamar Alexander and Mark Warner, and two members of the House of Representatives, Tom Petri and David Price, from two different parties in each case, wrote the Academy a letter. If I can paraphrase, the letter acknowledged the necessity of STEM education—science, technology, engineering, mathematics—in the United States today. At the same time, the letter stressed that we cannot lose sight of the importance of the humanities, which have always been the other leg that education in this coun-

try has stood upon. The letter then posed the question: what steps can federal, state, and local government, universities, foundations, educators, and others do to support the humanities in the United States?

The American Academy draws about half of its membership from the academic world, including administrators and college presidents as well as highly respected faculty members. It is an extraordinary group of people possessing unprecedented convening power. The Academy created its Commission on the Humanities and Social Sciences and held three group meetings, followed by six regional meetings around the country, to discuss the questions raised in the letter. The regional meetings were fascinating to me. While national education policy discussions focus primarily on STEM right now, we found there is actually an enormous amount of interest in the sub-

ject of the humanities, with initiatives and activities flying just below the radar in many different communities. and security. Karl Eikenberry, former U.S. Ambassador to Afghanistan, retired U.S. Army Lieutenant General, and a member of the Humanities Commission, has spoken quite eloquently about the problems the military will face without citizens trained in languages, cultural and regional studies, history, and so forth. The intrinsic group, on the other hand, argues that the humanities derive their value not from their measurable economic or political output, but from their innate intellectual worth.

The second axis concerns the issue of whether the Commission ought to focus on asking Congress for funding, or whether it ought to focus instead on taking a moral stand about the importance of the humanities.

Our discussions resulted in the first report of the Commission, published last June, *The Heart of the Matter: The Humanities and Social*

**We need the humanities for our nation's defense and for the strength of the economy. We need the humanities to help produce the thoughtful and critical-minded citizens that our democracy needs to thrive. And as individuals, we need the humanities to help us lead more fulfilling lives.**

Sciences for a Vibrant, Competitive, and Secure Nation. I have to say that it struck a chord with the nation more than even I thought it would, attracting an enormous amount of interest from academics, journalists, and the public. We are already beginning to see proposals that were introduced in *The Heart of the Matter* starting to take shape on university campuses, and the Commission is now moving toward phase two of the project, which is to build off this positive beginning with the kind of follow-on work the report calls for.

In the discussions we have had as a Commission, people have generally spread themselves in their approach along two major axes. The first axis concerns exactly how you justify the humanities. Members of the Commission tended to view the value of the humanities as principally either *instrumental* or *intrinsic*. The instrumental crowd argues that the humanities are critical to the future of our nation's creativity, economic success,

Sciences for a Vibrant, Competitive, and Secure Nation. I have to say that it struck a chord with the nation more than even I thought it would, attracting an enormous amount of interest from academics, journalists, and the public. We are already beginning to see proposals that were introduced in *The Heart of the Matter* starting to take shape on university campuses, and the Commission is now moving toward phase two of the project, which is to build off this positive beginning with the kind of follow-on work the report calls for.

---

I would like to leave the specifics of our work and talk for a moment about the Commission on the Humanities and Social Sciences as a model for the workings of the American Academy itself. When I entered office as the Governor of Tennessee, I thought that engaging the academic community in addressing public policy problems was a no-brainer, something I was absolutely going to do. I live and work in Nashville, and Vanderbilt University was an obvious resource. But I was a complete failure at engaging the academic community in this way. A number of factors contributed to this failure: different time scales, the economics of the university, and simply how the state operates. And frankly, I was looking to bring knowledgeable people together who could help create a solution; what I often got was a lot of people who had already carved out their own solutions and were interested in promoting their answers.

Until recently, the American Academy had been a mostly quiet academic institution. But I believe that this organization has tremendous potential to provide some of the policy background and intellectual policy work that this country so badly needs. The United States must engage its immense academic resources in creating solutions to the problems it faces, more deeply than what goes on in a D.C. think tank. The Academy possesses, of course, an abundance of quality thinkers in its membership, but also a convening power through which we can advance this important process. Remember, this organization was founded by people who were up to their necks in the public policy issues of their day. Benjamin Franklin, John Adams, and Thomas Jefferson were not isolated thinkers, but were deeply involved as actors in the policy-making process. I think it would be wonderful if the Academy, in a way that is suitable for the modern era, returned to these roots, reuniting America's policy questions with the resources

of the academic world in a thoughtful and constructive way. The Commission on the Humanities and Social Sciences represents an opportunity to get started, and to do so effectively.

I want to conclude with a request. This is obviously a group of very smart people, people who are highly respected leaders and shapers of opinions in their communities and institutions. I would ask of you, as you leave here today and in the years ahead, to be a proselytizer for the importance of having two legs for the educational system in our country to stand upon. We need the humanities for our nation's defense and for the strength of the economy. We need the humanities to help produce the thoughtful and critical-minded citizens that our democracy needs to thrive. And as individuals, we need the humanities to help us lead more fulfilling lives.

---

## Commission on the Humanities and Social Sciences



### Annette Gordon-Reed

*Annette Gordon-Reed is the Carol K. Pforzheimer Professor at the Radcliffe Institute for Advanced Study, the Charles Warren Professor of American Legal History at Harvard Law School, and a Professor of History at Harvard University. She is a member of the Academy's Commission on the Humanities and Social Sciences. She was elected a Fellow of the American Academy in 2011.*

Serving on the Humanities Commission, and seeing the dedication that people from all walks of life have poured into this project, has been one of the most exciting and meaningful experiences of my life. The Commission includes scholars, university presidents, politicians, musicians, architects, and filmmakers – George Lucas, for example, participated in every meeting because he is one of the many members who are so deeply committed to the idea that the humanities and the social sciences are integral parts of any society.

Many of us have children, and many have children now graduating from college. Everyone is interested in finding a job. Peo-

ple are thinking more instrumentally about education than they may have in the past. The relevance of the humanities, social sciences, and liberal arts to our modern economy has been publicly called into question. But others, Steve Jobs is one example, have stressed the importance of the interplay between the creativity of the liberal arts, humanities, and sciences.

I am a member of the Board of Trustees of Dartmouth College, a college that focuses on the liberal arts. Dartmouth features a very strong engineering component as well, but it is viewed as a part of the liberal arts. The engineers there believe that the arts and humanities are vital to the training of their student engineers. At Dartmouth, we

We divided the Commission up into groups, each with a different area of focus. We had groups focusing on K – 12 education, on two- and four-year colleges, on research and the graduate arm of the university system, and on cultural institutions as well, since humanities education also takes place in museums, cultural centers, and elsewhere. I was in the K – 12 section because I think this is a critically important area, not only for the humanities and social sciences, but the sciences as well, which we do not view in opposition to the humanities.

But K – 12 education is a difficult process to grapple with, and one of the things that we discussed is the system of localized control over education curricula. We don't all

**Our report, *The Heart of the Matter*, has been very well received. But beyond the positive feedback is a shared aspiration to use the report as something on which to build. We are hosting new regional meetings to try to engage still more people in this process. This should not be done from the top-down; ideas must come from ordinary citizens as well.**

hear from people all over the world who are interested in the model of education that we have in the United States. The countries that we think of as focusing primarily on the STEM disciplines, China, for example, are realizing that there is something missing when the focus is all on the so-called hard sciences, that there is something to be said for the way we do things here in our system of higher education, which is really the envy of the world. People come from all over to study in the United States, and they learn that our university model is not only concerned with science, but also with the arts and humanities.

agree about what should be taught – I am from Texas, and I am often called upon to explain my home state's views on education to people who do not live there. We don't all agree about what it means to be a citizen. Where does that leave civic education? And with a balkanized K – 12 education system, how can we create one central message that we would like to communicate? We can't, and that is why we have engaged not only the members of the Commission, but we went out and talked to regional and state humanities councils, to involve people from different regions of the country and benefit from their understanding of the process as

---

## *The Lincoln Project: Excellence and Access in Public Higher Education*

they have experienced it. The whole subject of history – my own field – is contentious, and historical interpretations vary widely by region. Citizens are today discussing the Fourteenth Amendment in many contexts, about what the history of the amendment means, about state authority, about how it informs our response to the government shutdown, about what the president can and cannot do. Having an educated citizenry is a prerequisite for any kind of substantive consideration of these issues. The discussion may not give us the final answer, or the best answer, but participating in these types of discussions is part of what it means to be a citizen in a democracy.

Our report, *The Heart of the Matter*, as was mentioned before, has been very well received. But beyond the positive feedback is a shared aspiration to use the report as something on which to build. We are hosting new regional meetings to try to engage still more people in this process. This should not be done from the top-down; ideas must come from ordinary citizens as well. I have been enormously gratified by my participation on the Commission, and I look forward to continuing its work. Please, join us with your ideas, with your hopes and your proposed solutions about what we should do, because we are truly in this together.

---



### **Robert J. Birgeneau**

*Robert J. Birgeneau is Chancellor Emeritus and Silverman Professor of Physics, Materials Science and Engineering and Public Policy at the University of California, Berkeley. He is Cochair of the Academy's Lincoln Project and a member of the Academy's Commission on the Humanities and Social Sciences. He was elected a Fellow of the American Academy in 1987.*

The Lincoln Project is at a very different stage from the Humanities Commission, which I also serve on. This project is at its very beginning. We held our first meeting here at the Academy only days ago, and it was an exciting and stimulating meeting. I am particularly pleased to have as a cochair of the Lincoln Project Mary Sue Coleman, President of the University of Michigan.

I am sure that I do not have to explain to anybody in this room that public research universities have faced extraordinary financial challenges over these past six or seven years. Unprecedented in history, the cuts in state funding that we have received are much worse than those that occurred during the Depression. This has been a singular time

for public education in the United States. To particularize the state disinvestment in terms of one institution that I understand well, when I started as Chancellor of the University of California, Berkeley in 2004, the state provided 29 percent of our total budget. When I finished as Chancellor last May, that number had plummeted to 11 percent.

If the compact that Governor Schwarzenegger had signed at the time of my recruitment was honored, then our funding from the state this past year would have been \$590 million. Instead, it was \$240 million; we lost \$350 million out of our budget over a very short length of time. To put that in human terms, this means that the state withdrew the salaries for more than one-half of our 8,000 staff who support the educational enterprise. Clearly, this presented an extraordinary challenge.

Why should we care about this? Why do public universities matter? The motto for both UC Berkeley and the Lincoln Project is "Access and Excellence." To put it succinctly, the greatest challenge facing our country in higher education is whether or not we are going to be able to maintain both access and excellence in our great public universities. I will not go through the details of the financial models for public research and teaching universities, but suffice it to say, I have no doubt that we could maintain access if we sacrificed the excellence of our institutions, as we could also maintain excellence by sacrificing public access. However, our country simply cannot afford to compromise on either if we want to sustain both our economic preeminence and our democratic society.

If you look at the top ten comprehensive public research and teaching universities in the United States, you will see that in the last year, they educated about 375,000 undergraduate students. This includes just the top ten universities! Clearly, this is an enormous number of students, and whether it is Michigan or Berkeley or Colorado, these under-

graduates are typically the very best students in their respective states. These institutions are providing an education to our country's most talented young people state by state (excluding, of course, the very small percentage of top students who go off to our elite private universities). Furthermore, these students are diverse in every sense of the word.

I will again give Berkeley as an example because I know this school best: currently on the Berkeley campus, we have 4,000 undergraduates whose family incomes are \$20,000 a year or less. Four thousand is the size of the entire undergraduate body at a representative private university like MIT. Nearly every one of these low-income students will be the first in his or her family to graduate from

Many of us, perhaps myself most prominently, believe that the progressive disinvestment in higher education by the states across the country is irreversible. This conundrum is not going to be solved through repeated trips to state capitals pleading for a return to a past system of investment. We believe that the model for the support of elite public higher education is broken, and we need a new model—a model that will involve, among others, the federal government not just supporting research, but supporting operations directly. The U.S. federal government does not now support the operations of its great public universities; this is in contrast with the situation in every single other country with which we compete economically. We both

tee. Because this topic is a public policy and political challenge, our committee includes politicians like Phil Bredesen, the former Governor of Tennessee, former Senator Kay Bailey Hutchison, and former Governor of California Gray Davis. We have also enlisted business people, and we have a number of current and former university leaders, from both public and private research universities. In addition, we have a number of talented data experts because we must make our case convincingly. This cannot be an exercise in whining; it has to be fact-based, with reliable historical data and projections into the future. Finally, we have communications specialists because we recognize the challenges that public higher education has faced

### **The greatest challenge facing our country in higher education is whether or not we are going to be able to maintain both access and excellence in our great public universities. . . . The goal of this project is direct political and social action that will result in genuine and lasting reforms to the model for the support of public higher education in the United States.**

college. When these students graduate they will elevate not just themselves but, most often, their entire families along with them. Furthermore, close to 90 percent of these 4,000 undergraduate students at Berkeley are people of color. Public universities therefore represent an extraordinary mechanism for social mobility in our country, most especially for underrepresented minorities. Frankly, we could solve our economic problems at Berkeley simply by reducing by a factor of two the need-based financial aid that we offer to low-income students, and instead devoting those funds to staff and faculty salaries. However if we did that, we would be betraying our mission as a public university. We are not going to do that; and this defines our challenge.

recognize and appreciate the phenomenal support that public universities have received from private philanthropists. Indeed, it has been private philanthropy that has saved Berkeley over these past six years. However, we also believe that corporate America must step up to the task; their support so far has been disappointing. In California, at least, if our major high-tech corporations simply repatriated 1 percent of the money annually that they are holding offshore and dedicated it to higher education this would solve our problem. Of course, we also need the state governments to act more responsibly.

To address the plight of higher education, most especially in our country's great public teaching and research universities, we have put together a broad-based commit-

tee. Looking ahead, we might very much like to explore these challenges in an issue of *Daedalus* of our own, but if we stopped there, we would have failed. The goal of this committee is direct political and social action that will result in genuine and lasting reforms to the model for the support of public higher education in the United States. While we must first provide the basic information and make our case convincingly, we will follow up this scholarly work by playing a direct, active role in support of public higher education in the corporate, philanthropic, state, and federal government sectors.

in communicating properly all aspects of our enterprise to the various sectors of society.

Looking ahead, we might very much like to explore these challenges in an issue of *Daedalus* of our own, but if we stopped there, we would have failed. The goal of this committee is direct political and social action that will result in genuine and lasting reforms to the model for the support of public higher education in the United States. While we must first provide the basic information and make our case convincingly, we will follow up this scholarly work by playing a direct, active role in support of public higher education in the corporate, philanthropic, state, and federal government sectors.

---

## Stewarding America



### Norman J. Ornstein

*Norman J. Ornstein is Resident Scholar at the American Enterprise Institute for Public Policy Research. He is Chair of the Academy's project on Stewarding America. He was elected a Fellow of the American Academy in 2004.*

The Academy was created to provide a forum for leading scholars, members of the learned professions, and leaders in government and business to work together on behalf of the democratic interests of the republic. The project on Stewarding America is right in the wheelhouse of that mission and charge. Really, the Stewarding America project is an attempt to look at the future of civil society in America, the pervasiveness of the sense of the common good, creating or enhancing the notion that we are all in this together.

When we started this project, I had just finished a book on the state of our political system with my coauthor and Academy Fellow Tom Mann called *It's Even Worse Than It Looks*. We just printed the paperback edition and I should have called it *It's Even Worse Than It Was: A Year Later*. All of us know the chal-

**The Stewarding America project is an attempt to look at the future of civil society in America – the pervasiveness of the sense of the common good – creating or enhancing the notion that we are all in this together.**

lenges we face in an era of partisan and ideological polarization; and during the present government shutdown, these challenges are very palpable. Now, frankly, if we only had to contend with ideological and partisan polarization, which we have experienced many times in American history, we could overcome that. There are ways in which you can find a compromise. Many issues are not ideological in nature; many of the issues we have been discussing here this morning are examples of things on which we can find common ground. But what we have now is a tribalism where if you are for it, I am against it, even if I was for it yesterday.

A couple of weeks ago, I was struck by a segment on comedian Jimmy Kimmel's late-night show in which an interviewer took to the streets and posed to strangers, "Which do you support, Obamacare or the Affordable Care Act?" We met a group of people who replied, "Obamacare, that's awful, it'll destroy the country and the economy; it's socialism. The Affordable Care Act is wonderful." That example may tell us something about the state of civic and other education in the country, but it also tells us that labels matter now much more than they did before. That is a terrible problem, and it is combined with a series of other deep challenges we face.

We have witnessed the decline of the public square. When I and many of you grew up, Americans shared a common set of facts. We tended to get our information from the same small number of sources. There were plenty of problems with that. There were

issues, including race, that for many decades were ignored or treated unfairly in that public square; but the point is, if you have differences in viewpoints but share a common set of facts, you can then argue constructively from there. Today, rather, we cannot agree even on a starting point. How can you deal with the problem of climate change, as we have discussed today, if a sizable share of your public and political actors believe that it's a hoax? You cannot even begin to discuss whether a regime of regulation, of a carbon tax, of cap and trade are appropriate, or how fast you ought to move and at what levels. You cannot even talk to each other.

This impasse also has roots in the recent and dramatic change in the role of money in American life and politics. During last year's Induction weekend, Jim Leach, then chairman of the National Endowment for the Humanities, gave an extraordinarily eloquent and powerful discussion of the post-*Citizens United* world. We have been there before; it was called the Gilded Age. We are moving to a new Gilded Age, one that distorts priorities and interests in directions that do not answer to the common good. We have seen a dramatic coarsening of the culture and discourse in this society. If you go on television and lie and get caught in the lie, the only lesson learned is that if you double-down on the lie, you will get your own cable television show or talk radio show, or if you are a political figure, donors will flood you with money and you become a hero or heroine to your base. Combine these standards of honesty with the decline in

civility and the dramatic growth in inequality and it is a challenge to be hopeful.

Neal Lane was talking earlier about the American Dream, how our children and grandchildren cannot necessarily embrace the idea that if you simply apply yourself, you can achieve your dreams. Strains of this disillusionment have begun to extend to the social fabric as well. Where I fear we are headed – and what I have seen the last few years – actually reminds me of the movie and the book that preceded it, *The War of the Roses*, in which there is such intent on destroying your adversaries or scoring political points that you are oblivious to the notion that you are destroying your own society along the way. This is our danger: when you have a monomaniacal focus on issues like sequesters, you cannot take into account the greater cost to society of ignoring the things that grow the economy, that grow the educational system, that prepare our children for the future.

In response, there are many institutions, organizations, and individuals focused on what we can do about it. The Bechtel Foundation, which helped fund this project, has studied citizenship. We decided that our particular focus would be on the role of institutions in stewarding America. William Galston and I edited the Spring 2013 issue of *Dædalus* on “American Democracy & the Common Good,” which focused on American institutions in the public and political sphere: from the courts to the military, to the political institutions and the parties, to unions and corporations, to the nonprofit sector and journalism. We tried to look at the broader culture as well, what Deborah Tannen in her essay has called “The Argument Culture,” and we looked at the history and tradition of compromise, trying to imagine how we can reestablish a public commons.

If you have not yet read this *Dædalus* volume, it is now available online, and I would

urge you to read these essays because they are quite elegant and profound. But we also want to move toward an agenda of action; we need to engage leaders more than we have. Unfortunately, we are living in an era of populism, with an economy that has been stagnant, and where it is tough to find leaders in any institution who can command a broader level of public support. Some of our leaders, including a few in the military, have feet of clay. We need both a new generation of leaders and for an older generation of leaders to step up, to begin to shift the culture and change the institutions.

We are planning a conference that will focus on a plan of action for the future, and we hope to engage all of you – that is the role of the Academy. We are joined together with the founding members of the Academy – John and Samuel Adams and John Hancock, among others – to answer a call to action. We are stewards of this society. ■

---

© 2014 by Neal Lane, Venkatesh Narayana-murti, Steven E. Miller, Robert Rosner, Robert W. Fri, Maxine L. Savitz, Philip Bredesen, Annette Gordon-Reed, Robert J. Birgeneau, and Norman J. Ornstein, respectively

---

# A View of the Visiting Scholars

By Patricia Meyer Spacks

*Patricia Meyer Spacks, a Fellow of the American Academy since 1994, is the Edgar F. Shannon Professor of English, Emerita, at the University of Virginia. She has directed the Visiting Scholars Program since 2006, and codirected the program with Mary Maples Dunn since 2011.*

When the Academy's Visiting Scholars Program begins its twelfth year in September, a new director will guide it. Lawrence Buell, a Fellow of the American Academy since 2008 and Powell M. Cabot Professor of American Literature Emeritus at Harvard University, will bring his expertise as teacher, scholar, and administrator to the leadership of an innovative and thriving enterprise.

Professor Buell, one of the founders of environmental criticism as a literary specialty, received in 2007 the Jay Hubbell Medal for Lifetime Achievement in American Literary Studies. He has taught and written widely about nineteenth-century American literature, his books including a prize-winning study of Ralph Waldo Emerson (2003). A more recent work, *The Future of Environmental Criticism: Environmental Criticism and Literary Imagination* (2005), not only surveys the history of an important field, but also provides informed speculation about its future possibilities.

Professor Buell's interest in American literature and culture makes him an appropriate mentor for the Visiting Scholars, whose projects typically focus on some aspect of American culture. Moreover, his commitment to liberal education at every level prepares him to think innovatively about the needs of young people at the beginning of their academic careers. The Visiting Scholars Program has consistently explored ways to fill those needs. Its fellowships facilitate young scholars' writing and publication, but they also provide opportunities to acquire new kinds of knowledge and understanding.

The Academy has always served and been served by men and (more recently) women of distinction. The Visiting Scholars Program, supported by a consortium of contributing colleges and universities, extends the organization's reach to those showing promise at a stage of intellectual development too early for public distinction. Given limited funding and space, it can involve only seven to nine Scholars a year. Each holds a Ph.D. in the humanities or social sciences and is either an untenured assistant professor or a postdoctoral student. Two Harvard dissertation students supported by the Mahindra Humanities Center customarily join many of the program's activities, becoming part of the community, but even their inclusion brings the total number to fewer than a dozen. This fact has come to seem advantageous: small numbers facilitate bonding and enable individual mentoring.



Few other residential fellowship programs make themselves available to social scientists and humanists at early stages of their postdoctoral development. The Visiting Scholars Program typically includes mainly young people engaged in converting dissertations into books, with a minority of more advanced assistant professors working on second books. The group always contains some seeking their first academic jobs and others already established in tenure track positions. Informal systems of mentorship develop within the small community, with advice and support for the job search readily available – and without the uncomfortable competitive situations that often arise in graduate school departments. The Scholars help one another to refine job talks, providing tips based on their own interview experience, and they generally form ad hoc writing groups to criticize and encourage the work in progress of individual participants.

The more formal arrangements that have developed in the program, which Mary Maples Dunn and I currently co-direct, systematically support the Scholars. During the second semester, members of the group make formal presentations of their written work, in weekly or bi-weekly meetings that generate challenging questions and searching criticism. These sessions also, increasingly as the semester goes on, entail broad discussion of disciplinary similarities and differences, as historians encounter the assumptions of literary critics, art historians try to figure out what economic historians believe, sociologists and political scientists talk to one

another, and so on. The specific issues discussed vary from year to year, depending on the disciplines represented and the nature of the participants, but the discussions often generate complex individual commitments to intellectual activity across disciplines – commitments likely to produce significant pedagogical and scholarly effects in the long run.

The second-semester meetings follow a familiar model from centers for more advanced academics, such as the Radcliffe Institute

**The Academy has always served and been served by men and (more recently) women of distinction. The Visiting Scholars Program, supported by a consortium of contributing colleges and universities, extends the organization’s reach to those showing promise at a stage of intellectual development too early for public distinction.**

and the National Humanities Center in North Carolina. The first-semester activities of the Visiting Scholars Program, in contrast, have developed without a model, on the basis of experience from earlier years, to provide a pragmatic grounding for academic development.

When the program began, we thought it wise to plan regular afternoon meetings for the group as a whole, so that they would bond and become accustomed to collaborative functioning. In the first semester, we believed, it would be useful to have established scholars come to talk about their current work. The Visiting Scholars would thus meet important local figures and encounter models of intellectual activity.

Fellows of the Academy and other distinguished Cambridge and Boston academics generously participated in this enterprise, which often stimulated vigorous discussions. Gradually, though, it became clear that talks unrelated to the specific undertakings of the Visiting Scholars, although often interesting to their listeners, did not help them in their immediate enterprise. The rich resources of the Academy were already available to them: they could hear eminent scholars at Stated Meetings and at the monthly Friday Forums. The Mahindra Humanities Center regularly invited them to its events. Elsewhere at Harvard and at other nearby academic institutions, they might listen to speakers on virtually any subject. More of the same did not seem particularly useful.

More valuable, it turned out, was practical, up-to-date information of a sort they had not acquired in graduate school, or even in

the opening years of a teaching career. We began by inviting a literary agent who specialized in academic books. That was seven or eight years ago. She has returned every year since, patiently pointing out that dissertation advisors commonly do not really know what the publishing scene is like now for beginners, and providing specific information about how to write a good book proposal – and, for that matter, a good book. She talks, to rapt listeners, about audience, about contracts, about individual presses, about good

prose. She answers endless questions. She helps the Scholars feel like professionals, even if they have not yet held a full-time academic job.

Over the years, others have joined her, with focused information and generous responsiveness. Always, at least one editor from an academic press comes, to reinforce many of the points made by the literary agent and to talk about a publisher’s point of view toward submissions. Other speakers vary from year to year. We have heard

from public intellectuals, talking about how and why they do what they do; from practitioners of digital scholarship; from accomplished scholars discussing not what they are currently writing, but what habits they have developed to facilitate their research and writing and what practices they would recommend to relatively inexperienced writers. Visitors have pondered, among other things, ethical and moral issues raised by the activities of public intellectuals, educators’ conflicting responsibilities, intricacies of the tenure process, possibilities for recipients of the Ph.D. to find satisfying employment outside academia, and the nature of an academic’s institutional obligations. Sometimes individual Scholars have thought previously about the questions being raised, but often they find the topics in themselves revelatory. The ensuing informal discussions among members of the group frequently continue for days, and the issues visitors raise tend to re-surface in subsequent formal meetings.

Whatever their nominal subject, the Tuesday afternoon visitors repeatedly allude to the matter of writing. The literary agent stresses the importance of effective prose in selling book proposals and books alike. She also suggests specific qualities that make prose work well. Academics talking about their habits as writers often speak also of what hard work writing turns out to be, and of obstacles they have faced. Public intellectuals and editors alike may dwell on how a writer’s prose must change in order to attract a broad audience. Such topics not only provoke

**The culture of the community centers on writing, and most of its participants write more eloquently at the end of their Academy experience than they did at the beginning. In any case, they have heightened their awareness of the urgency of good prose.**

immediate questions and discussion; they also gradually begin to affect the Scholars' critical standards, revealed as they comment on one another's work.

I myself have often given one formal talk during the year on the subject of writing, revisiting the kind of advice that students receive in their freshman composition courses. That advice sounds quite different in the new context of a community whose members are writing books. Unlike most students of freshman composition, Visiting Scholars all have subjects they urgently wish to expound. Writing matters to them. As a Harvard graduate student remarked, it actually feels thrilling to revisit such subjects as the nature of a sentence when you have already discovered for yourself the importance and the difficulty of producing good sentences.

No one learns to write well just by hearing other people talk about good writing. The mentorship provided in the Visiting Scholars Program includes, for those who want it (and most do), close individual attention to the linguistic details of what a Scholar writes. All members of the group can receive critiques not only from their peers, but from Mary Dunn and me, who frequently provide line by line commentary, both written and oral. The culture of the community centers on writing, and most of its participants write more eloquently at the end of their Academy experience than they did at the beginning. In any case, they have heightened their awareness

of the urgency of good prose. Lawrence Buell, himself a luminous writer, will provide distinguished guidance for succeeding groups of Scholars.

As their stay at the Academy concludes, the Visiting Scholars produce enthusiastic evaluations of their experience. They then go into careers mainly of teaching and writing. By now those from previous classes have produced over a hundred books, some of them edited or co-edited, but the great majority works of individual authorship. They have achieved tenure in institutions large and small, or they are in tenure track positions. They have, as a direct result of the Visiting Scholars Program, deepened and broadened their understanding of their vocations. One member of the class of 2010–2011 wrote, "My residency at the Academy . . . had a profound effect on the character and quality of my scholarship. Being part of such a dynamic and gifted cohort has been by turns inspiring, humbling, and hugely suggestive. The opportunity to be in close conversation with colleagues from across the humanities has granted me a new perspective on matters of audience, argumentation, and evidence; it has also introduced me to a number of new methodologies." Like others in the program, he seems on track to become exactly what the program's originators hoped: a leader in his profession. ■

---

© 2014 by Patricia Meyer Spacks

## A View from a Visiting Scholar

By John Kaag

*John Kaag is Associate Professor of Philosophy at the University of Massachusetts, Lowell. He was a Visiting Scholar at the Academy in 2007 – 2008.*

Nestled back on its corner of Norton Woods, the House of the Academy struck me on my first day as a page out of Frank Lloyd Wright’s draft book – one of those rare structures where ancient materials take on genuinely novel forms. The architecture of the House, which is a cross between classical villa and American arts-and-crafts, reflects one of the leading ideas of the American Academy of Arts and Sciences, namely that the old and new must cohabitate for academia to remain both grounded and fresh. This was my first lesson as a Visiting Scholar.

I remember on my first day at the Academy opening the heavy oak front doors to the House. John Adams, the second President of the United States, greeted me – at least his nineteenth-century portrait did. It hangs in the central atrium between a selection of acceptance letters from Academy members: Albert Einstein, Richard Feynman, and Robert Frost, among others. I felt totally out of place. A security guard in a blue blazer approached and kindly explained: “the offices for the Visiting Scholars are upstairs.”

“And in the future,” he added, “you can use the back stairwell to get there.”

At the time, his suggestion seemed a little rude for all of the obvious reasons, but over the course of the year it began to make very good sense. There were seven Visiting Scholars that year, and as the months rolled on we became increasingly chatty and, I will only speak for myself, ill-kempt. But we also became increasingly productive. The Visiting Scholars would trundle up to the second floor of the Academy, arguing about the state of religion in America, or about how to construct a really compelling first sentence, or about the speaker that we had heard last Tuesday. And on these afternoons I was glad we did not have to lower our voices. After all, we were using the back staircase.

The Visiting Scholars had learned very different things in graduate school – how to be professors of English, history, law, political science, and philosophy. But we had also learned a common lesson: how to work in perfect isolation. It took us a number of months to overcome this lesson of graduate school, to realize that research is done best when it is done with others. This is a given in the sciences, but the advantages of collaboration and discussion are often downplayed in the humanities and social sciences, which take the monastic model of scholarship rather seriously. So it took us a little while to realize that intellectual isolation wasn’t a good in itself.



To be clear, I’ve never had as much academic freedom as I had as a Visiting Scholar. I was free to visit every library and every archive on Harvard’s campus. And I did. I was free to write, or not write, exactly what I chose. And I did. Of course, I was secretly terrified by this freedom, but I could always walk back to the Academy and commiserate with budding scholars (smarter than I was) who were just as scared. I could also look to distinguished scholars who had managed to face this freedom without going to pieces. One of them was Patricia Meyer Spacks.

Pat is indefatigable. A member of the Academy and one of its former presidents, Pat also directed the Visiting Scholars Program during my tenure. If she was not editing the latest collection of Jane Austen, she was writing a book on rereading, or during my year at the Academy, reading yet another draft manuscript from a Visiting Scholar. She didn’t have to do any of this, especially, I often thought, read materials from junior scholars who were trying to find their voices. But she did. Pat was our constant companion during our time on the second floor of the Academy. Her office – exactly the size and shape of my own – was right next door, and her door was always open. Without Pat’s daily encouragement, I would have never pursued, much less completed, my first book, *Idealism, Pragmatism and Feminism*. My interactions with Pat imparted the most important lessons that I learned as a Visiting Scholar: new forms do not survive without the help of established ones; new forms eventually become old; and when they do, there is some indebtedness to the new growth.

**The Visiting Scholars Program has provided the space for young humanists and social scientists to remember that they might have once aspired to the highly technical *and* the soaringly beautiful, and that such aspirations are not to be put off until some distant day.**

I will not forget these lessons. I will also not forget the little kitchenette on the second floor of the Academy where Joy Rohde, David Sehat, and I had lunch on a daily basis. This is the place where Joy's manuscript on the military implications of social science research took form (published with Cornell in 2013), where I provided David what he has called the most important sentence of his preface to the *Myth of American Religious Freedom* (published with Oxford in 2012), and where David, a historian, gave me, a philosopher, what remains the most constructive critique of *Thinking Through the Imagination* (which I will publish with Fordham in 2014).

By this point, it should be obvious that the Visiting Scholars Program does not operate like an intellectual "Upstairs, Downstairs." Its participants, most of them either post-doctoral fellows or untenured assistant professors, are fully integrated members of Academy life. We were encouraged to attend informal lunches held once a week on the first floor of the Academy where Academy members who lived in the Cambridge area would gather to chat about their research. The members, most of them distinguished full professors, many of them Nobel laureates, regarded the seven of us as intellectual equals or, if not perfect equals, then as very promising junior colleagues. Graduate school is meant to prepare a student to become a scholar in his or her own right, but it often only cements the rigid hierarchy between professor and pupil. As a Visiting Scholar, however, one thing was clear. I was no longer just a student.

This does not mean that I didn't still have much to learn – like how to write a successful book proposal, how to write for an audience larger than a doctoral committee, and how to understand the responsibilities of being a public intellectual. And the Visiting Scholars Program was geared to help me acquire this knowledge and the practical tools that would allow me not only to become a scholar in my own right, but a truly good one. Every Tuesday Pat would arrange an afternoon speaker for our group, who would address some aspect of writing or research. Graduate students spend a great deal of time writing, but not enough time thinking about the process itself. So these were much needed conversa-

tions. Robert Pinsky, the United States Poet Laureate, came to talk to us about style and voice and all of us listened. Very. Carefully. Reading and writing, if I understood Pinsky that day, is always an existential affair, one that is necessarily and profoundly personal. An academic author who overlooks this fact will tend to write books that are easily overlooked. This general suggestion was restated by a literary agent the next week, Wendy

Strothman, who explained the concrete and very specific guidelines that she used to judge popular academic writing – hook a reader, motivate a topic, write what you know, and avoid all semblance of jargon. She urged us to keep these guidelines in mind as we developed our next projects and invited all of the Visiting Scholars to send her draft proposals. Many of us did and we received extensive feedback.

The invited speakers, often established academics from all over the country, have changed over the years; this fall Harvard history professor and *New Yorker* author Jill Lepore came to talk to the Visiting Scholars. I had heard that she was coming to the Academy and was more than a little jealous of this year's cohort. So I contacted Lepore to give me a hint of what I had missed, to give me a sense of the advice she had given this year's Scholars (such is the audacity of a former Visiting Scholar). "The word on the academic street," Lepore said, "is that what you ought to do is to write a dissertation to satisfy your graduate school advisor, turn it into a monograph to satisfy your discipline's tenure requirements, and then, and only then, write the way you'd like to write." This was also the "word on the street" a few years ago when I went through graduate school: defer the questions of style and motivation and voice until after all of your disciplinary hurdles are cleared. Lepore continued: "There's absolutely nothing wrong with writing a highly technical dissertation and a very specialized monograph; that sort of work is crucial to the production of knowledge and the exchange of ideas. But if, all along, you wanted to write differently, you should do that from the start. Saying you'll write something soaringly beautiful after you get tenure is like saying you'll spend time with your kids after they're grown."

The Visiting Scholars Program has provided the space for young humanists and social scientists to remember that they might have once aspired to the highly technical *and* the soaringly beautiful, and that such aspirations are not to be put off until some distant day. I am grateful to have been one of these young scholars. ■

---

© 2014 by John Kaag

## Point of View: Talks on Education

by Edward H. Levi

### Reflections by Kenneth Prewitt

*Kenneth Prewitt, a Fellow of the American Academy and Vice President from 1989 to 1994, was on the faculty of the University of Chicago (1964 to 1979) during Edward Levi's tenure. Prewitt currently teaches at Columbia University, where he also directs the Scholarly Knowledge Project, sponsored by Sage Publications.*

What would Edward H. Levi, President of the American Academy from 1986 – 1989, think of crowd sourcing – of the idea, common among techno-optimists, that knowledge need not be filtered by gatekeepers – editors, curators, faculty – but should be directly and democratically accessible? A hint appears in *Point of View*, when Levi cites an adage George Bernard Shaw hung over his fireplace: “They say. What say they? Let them say.”

Levi, like Shaw, a skeptic, insisted that the frequency with which an idea is repeated “is not a test which promotes rational discussion. It is a setting in which the waves and tides of popular thought . . . have magnified importance.” (pp. 8 – 9) It is a tragedy for society, noted Levi, to believe that how often something is said or how many say it is a guide to knowledge or source of truth.

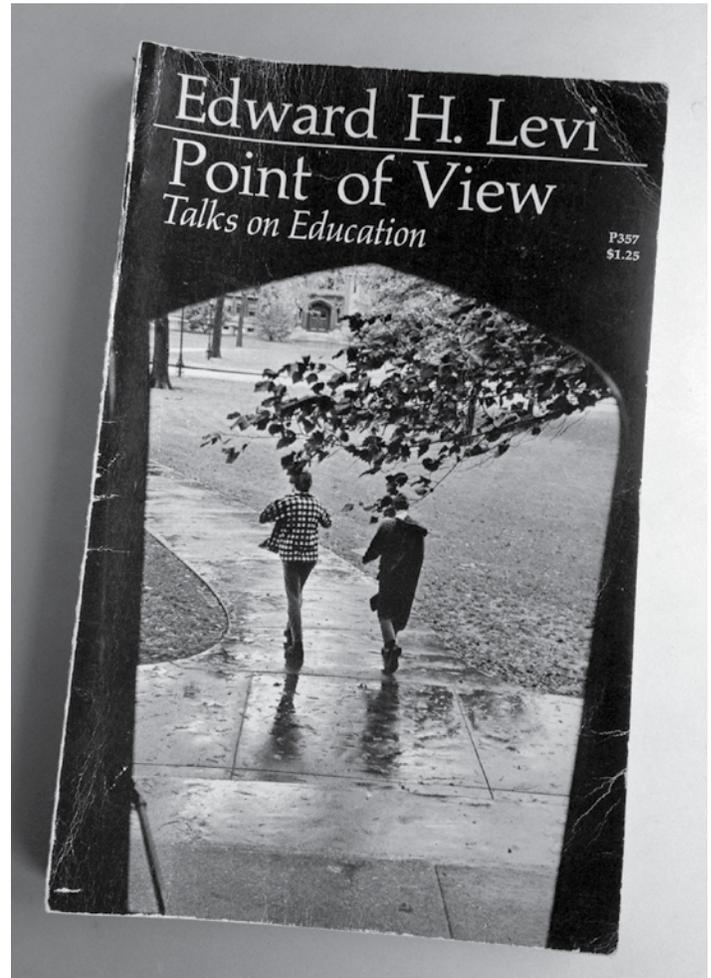
Levi's likely view on crowd sourcing is a starting point to reflect more broadly on his view of the research university – a companion essay to Jack Fuller's reflection on how Levi, as Attorney General, restored legal integrity to a government corrupted by Watergate.<sup>1</sup> Levi's task as professor, dean, provost, and president of the University of Chicago was to stiffen the resolve of its faculty buffeted by voices, some internal, doubting its authority and its relevance in the turmoil of the 1960s.

The specific challenges of a half-century ago have faded only to be replaced by new ones arriving with the digital revolution and changing market forces. Research universities, along with libraries, museums, academic societies, and scholarly publishers, have watched their monopolies erode and established hierarchies crumble. Consultancy firms, think tanks, corporations, bloggers, and, yes, social media with its algorithms are in the knowledge business now. And, yes, crowd sourcing and big data do have things to teach us. The pace is picking up; and there is anxious discussion of whether the American university will follow the path of the American news industry.

Levi's *Point of View* is relevant to dubious developments of our time: to the mercenary alacrity with which self-declared entre-

<sup>1</sup> See the Spring 2013 issue of the *Academy's Bulletin*.

Note: All quotations are taken from Edward H. Levi, *Point of View: Talks on Education* (Chicago: University of Chicago Press, 1969).



preneurial universities mix commercial pursuit with educational mission; to the sad truth that American universities are extending their global footprint more eagerly in the cash-rich Gulf States and East Asia than in Africa, where the need is much greater; to the self-censorship of politically unpalatable scholarship in closed (and wealthy) countries; to the wistful hope that technology will provide a cheap fix for poor teaching; to the infatuation with performance metrics, including the idea that the quality of a degree can be measured by the prospective income of its graduates (but not by the prospective quality of their parenting, civic engagement, or appreciation of the arts). Of these trends, Levi would ask hard questions; I doubt they would gain his approval. But these targets are perhaps too easy.

---

It may be more instructive to consider Levi's thinking through his conviction that the research university should not only study social ills, but should act on them, even directly service people damaged by them. He boasted that under his leadership the University of Chicago ". . . runs hospitals, legal clinics, offers psychiatric and psychological help within the public schools, and performs social service work. This is not just research, but service of the highest order." (p. 132) This, however, was not Levi's last word. Therein lies its importance. A research university is not a substitute government, charity, or advocacy group. If it takes up action and service it does so only as a peripheral project.

The research university has a different center of gravity. It exists to teach what is known, investigate what is unknown, and then, as the unknown becomes the newly known, replenish what is taught. Inquiry and pedagogy are linked in this endless cycle of the search for knowledge and its dissemination. It is this that distinguishes research universities from governments, charities, and advocacy groups.

Levi's argument starts from the premise that research universities are about the life of the mind, which requires that they defend "their protected remoteness; their freedom to be objective; their determination to seek intellectual truth on its own terms." (p. 55) Protected remoteness is not disengaged neutrality. The university is not a by-stander. It should engage, but not in the political ways demanded in the 1960s or the practical ways demanded today. The research university intervenes – uniquely – through propagating the inherent "worthwhileness of the intellectual pursuit of truth." (p. 182) In a famous formulation, Levi tells us that the university is custodian of reason itself. If at times it fell short in the turmoil of the 1960s, or perhaps in adjusting to the challenges of today, this did not alter its defining responsibility: self-correcting critical inquiry.

The relevance of *Point of View* today is its subtle distinction between practices and principles. It is not a defense of institutional practices – not even of cornerstones like peer-review, the seminar, or tenure. *Point of View* is, rather, a resolute defense of principles expressed through those practices. Peer review stands for expertise that assesses the accuracy and quality of knowledge claims; the seminar allows for mentoring and the transmission of standards from professor to student; tenure is simply a means to ensure inquiry free of political interference or influence by its funders.

"Creative destruction" is a phrase often found in commentary on the coming transformation of the university, especially by those who believe that such practices as peer review, seminars, or tenure should give way, at least as we know them today, to make room for technology-based practices and a more secure business model. Perhaps so, but it is well to keep in mind that the creative destruction of which Joseph Schumpeter wrote was in jobs and products. It was blacksmiths and buggy whips that had to go, but not capitalism's fundamental confidence in the profit motive. Communism erred in that regard, just as crowd sourcing's mistake is to think it has no use for gatekeepers.

A world without the University of Chicago would sadden Edward Levi. A world without a place of inquiry free of political, commercial, or service goals would alarm him. His message to us: hold fast to the foundation even if creative destruction rearranges – and tosses out some of – the furniture. ■

---

© 2014 by Kenneth Prewitt

As of press time, several Fellows of the Academy, listed below, had been nominated or appointed to key positions in the Obama administration:

**Stanley Fischer** (Bank of Israel) was nominated as Vice Chairman of the United States Federal Reserve.

**Shirley Ann Jackson** (Rensselaer Polytechnic Institute) was appointed a Member of the Advanced Manufacturing Partnership Steering Committee 2.0.

**Marc Kastner** (Massachusetts Institute of Technology) was nominated to head the Department of Energy's Office of Science.

**Janet Yellen** (United States Federal Reserve) was confirmed as Chairwoman of the United States Federal Reserve.

## Select Prizes and Awards to Members

### Nobel Prizes, 2013

#### *Chemistry*

**Martin Karplus** (Harvard University)

**Michael Levitt** (Stanford University School of Medicine)

#### *Economic Sciences*

**Eugene Fama** (University of Chicago)

**Lars Peter Hansen** (University of Chicago)

**Robert J. Shiller** (Yale University)

#### *Literature*

**Alice Munro** (Clinton, Ontario, Canada)

#### *Physiology or Medicine*

**James E. Rothman** (Yale University)

**Randy W. Schekman** (University of California, Berkeley)

**Thomas C. Südhof** (Stanford University)

### Wolf Prizes, 2014

#### *Chemistry*

**Chi-huey Wong** (Scripps Research Institute; Academia Sinica)

#### *Medicine*

**Victor Ambros** (University of Massachusetts Medical School)

**Gary Ruvkun** (Harvard Medical School; Massachusetts General Hospital)

**Nahum Sonenberg** (McGill University)

### Presidential Medal of Freedom

**William Clinton** (Bill, Hillary & Chelsea Clinton Foundation)

**Daniel Kahneman** (Princeton University)

**Richard Lugar** (Lugar Center)

**Patricia M. Wald** (Washington, D.C.)

### Breakthrough Prize in Life Sciences

**Mahlon R. DeLong** (Emory University)

**Robert S. Langer** (Massachusetts Institute of Technology)

**Richard P. Lifton** (Yale University)

**Alexander Varshavsky** (California Institute of Technology)

### Breakthrough Prize in Physics

**John H. Schwarz** (California Institute of Technology)

### Other Awards

**Shirley S. Abrahamson** (Wisconsin Supreme Court) received a Distinguished Alumni Service Award from Indiana University.

**Edward Adelson** (Massachusetts Institute of Technology) has been named a 2013 Fellow of the Massachusetts Academy of Sciences.

**Pedro Almodovar** (El Deseo Production Company) is the recipient of the European Achievement in World Cinema from the European Film Academy.

**Roger Angell** (*The New Yorker*) was elected the 2014 winner of the J.G. Taylor Spink Award by the Baseball Writers' Association of America.

**Martina Arroyo** (Indiana University) received a 2013 Kennedy Center Honor.

**Wendell Berry** (Port Royal, Kentucky) received the Richard C. Holbrooke Distinguished Achievement Award from the Dayton Literary Peace Prize Foundation.

**Robert J. Birgeneau** (University of California, Berkeley) is the recipient of the 2013 Chief Executive Officer Leadership Award from District VII of the Council for Advancement and Support of Education (CASE).

**Nicholas Bloom** (Stanford University) was awarded the 2014 Ewing Marion Kauffman Prize Medal for Distinguished Research in Entrepreneurship, given by the Ewing Marion Kauffman Foundation.

**Richard H. Brodhead** (Duke University) is the recipient of a 2013 Academic Leadership Award from Carnegie Corporation of New York.

**Colin Camerer** (California Institute of Technology) was named a 2013 MacArthur Fellow.

**Herman Chernoff** (Harvard University) received the 2013 Rao Prize.

**David DeRosier** (Brandeis University) received the Microscopy Society of America's Distinguished Scientist Award.

**E. L. Doctorow** (New York University) was awarded the National Book Foundation's 2013 Medal for Distinguished Contribution to American Letters.

**James Dumesic** (University of Wisconsin-Madison) was elected a Fellow of the National Academy of Inventors.

**Greg J. Duncan** (University of California, Irvine) is the recipient of the 2013 Klaus J. Jacobs Research Prize.

**Claire Fagin** (New York, New York) received an Award for Distinguished Service from the New York Academy of Medicine and the Lillian Wald Award from the Visiting Nurse Service of New York.

**Drew Gilpin Faust** (Harvard University) received the 2013 Ruth Ratner Miller Award for Excellence in American History.

**David Frohnmayer** (University of Oregon) received the James B. Conant Award of Merit in Education from Delta Upsilon International Fraternity.

**James Fujimoto** (Massachusetts Institute of Technology) received the 2014 IEEE Photonics Award.

**Melinda Gates** (The Bill & Melinda Gates Foundation) and **William Gates** (Microsoft Corporation; The Bill & Melinda Gates Foundation) received the Lasker-Bloomberg Public Service Award.

**Philip Glass** (New York, New York) is among the winners of the Praemium Imperiale given by the Japan Art Association.

**Shafi Goldwasser** (Massachusetts Institute of Technology; Weizmann Institute of Science) has been named a 2013 Fellow of the Massachusetts Academy of Sciences.

**Herbie Hancock** (Los Angeles, California) received a 2013 Kennedy Center Honor.

**Larry V. Hedges** (Northwestern University; NORC at the University of Chicago) has been named the 2013–2014 Statistician of the Year by the Chicago Chapter of the American Statistical Association.

**John L. Hennessy** (Stanford University) is the recipient of a 2013 Academic Leadership Award from Carnegie Corporation of New York.

**Katherine A. High** (The Children's Hospital of Philadelphia) received the 2013 E. Donall Thomas Prize from the American Society of Hematology.

**James Hynes** (University of Colorado) has been named a Fellow of the American Chemical Society.

**Tony Kushner** (Heat and Light Company) is among the recipients of the W.E.B. Du Bois Medal given by Harvard University.

**Spike Lee** (40 Acres and a Mule Filmworks; New York University) received the 20th Dorothy and Lillian Gish Prize.

**Tom Leighton** (Massachusetts Institute of Technology; Akamai Technologies) has been named a 2013 Fellow of the Massachusetts Academy of Sciences.

**Marsha Lester** (University of Pennsylvania) was awarded the Francis P. Garvan-John M. Olin Medal.

**Philip Levine** (New York University) has been awarded the Academy of American Poets' Wallace Stevens Award for Lifetime Achievement.

**Charles M. Lieber** (Harvard University) received the first Nano Research Award, established by Tsinghua University Press, Springer, and the journal *Nano Research*.

**Stephen J. Lippard** (Massachusetts Institute of Technology) received the 2014 Priestley Medal from the American Chemical Society.

**Barbara Liskov** (Massachusetts Institute of Technology) has been named a 2013 Fellow of the Massachusetts Academy of Sciences.

**Tanya Luhmann** (Stanford University) received the 2014 Louisville Grawemeyer Award in Religion.

**Thomas Mallouk** (Pennsylvania State University) has been selected as a Fellow of the American Chemical Society.

**Lynne E. Maquat** (University of Rochester School of Medicine and Dentistry) is the recipient of the 2014 Athena Award, given by the Women's Council of the Rochester Business Alliance.

**Robert C. Merton** (Massachusetts Institute of Technology) received the 2013 WFE Award for Excellence. He shares the prize with **Myron Scholes** (Stamos Partners; Stanford University; Platinum Grove Asset Management).

**Ellen Mosley-Thompson** (Ohio State University) and **Lonnie Thompson** (Ohio State University) are the recipients of the Joseph Sullivant Medal, awarded by Ohio State University.

**Bert O'Malley** (Baylor College of Medicine) received the 2014 Dale Medal from the Society for Endocrinology.

**Menahem Pressler** (Indiana University) received the University Medal from Indiana University.

**Chintamani Nagesa Ramachandra Rao** (Jawaharlal Nehru Centre for Advanced Scientific Research) received the Bharat Ratna, awarded by the Government of India.

**Hunter R. Rawlings III** (Association of American Universities) was awarded the James Madison Medal by Princeton University.

**Deborah L. Rhode** (Stanford Law School) is the recipient of the 2014 Outstanding Scholar Award from the American Bar Foundation.

**John W. Rowe** (Columbia University Mailman School of Public Health) is the recipient of the University of New England College of Osteopathic Medicine 2013–2014 Humanism in Aging Leadership Award.

**John G. Ruggie** (Harvard Kennedy School) is the recipient of the 2014 Global Environment Award by the International Association for Impact Assessment.

**Maxine Savitz** (National Academy of Engineering; Honeywell, Inc.) received a Lifetime Achievement Award from the U.S. Clean Energy Education and Empowerment (C3E) program.

**Richard H. Scheller** (Genentech, Inc.) received the 2013 Albert Lasker Basic Medical Research Award. He shares the award with **Thomas C. Südhof** (Stanford University).

**Myron Scholes** (Stamos Partners; Stanford University; Platinum Grove Asset Management) received the 2013 WFE Award for Excellence. He shares the prize with **Robert C. Merton** (Massachusetts Institute of Technology).

**James Simons** (Euclidean Capital LLC) and **Marilyn Simons** (Simons Foundation) are among the recipients of the 2013 Andrew Carnegie Medals of Philanthropy.

**Larry Squire** (University of California, San Diego) received a 2014 Memory and Cognitive Disorder Award from the McKnight Endowment Fund for Neuroscience.

**Thomas C. Südhof** (Stanford University) received the 2013 Albert Lasker Basic Medical Research Award. He shares the award with **Richard H. Scheller** (Genentech, Inc.).

**Subra Suresh** (Carnegie Mellon University) has been elected a member of the Institute of Medicine and a foreign member of the Chinese Academy of Sciences.

**Patricia M. Wald** (Washington, D.C.) is the recipient of the 2014 Outstanding Service Award from the American Bar Foundation.

**Ernest J. Wilson III** (University of Southern California) has been selected as a Fellow of the National Academy of Public Administration.

**Junying Yuan** (Harvard University) received an Agilent Thought Leader Award from Agilent Technologies Inc.

## New Appointments

**Jared L. Cohon** (Carnegie Mellon University) has been named to the Carnegie Corporation of New York Board of Trustees.

**Susan Desmond-Hellmann** (University of California, San Francisco) has been named Chief Executive Officer of the Bill and Melinda Gates Foundation.

**Brian J. Druker** (Oregon Health & Science University) was appointed to the Scientific Advisory Board of Cell Therapeutics, Inc.

**Stephen Fienberg** (Carnegie Mellon University) has been named to the National Commission on Forensic Science.

**Margaret Levi** (University of Washington) has been appointed Director of the Center for Advanced Study in the Behavioral Sciences at Stanford University.

**Stephen G. Nichols** (Johns Hopkins University) has been appointed Distinguished Presidential Fellow of the Council on Library and Information Resources.

**William Nordhaus** (Yale University) was named Chairman of the Federal Reserve Bank of Boston.

**Robert E. Page, Jr.** (Arizona State University) has been appointed University Provost at Arizona State University.

**Thomas F. Rosenbaum** (University of Chicago) has been named President of the California Institute of Technology.

**Robert I. Rotberg** (Harvard Kennedy School; World Peace Foundation) was appointed a Senior Fellow at the Centre for International Governance Innovation.

**Vicki Ruiz** (University of California, Irvine) has been named President-Elect of the American Historical Association.

**Marjorie M. Scardino** (Pearson) was appointed to the Board of Directors of Twitter.

**Inder M. Verma** (The Salk Institute) was appointed to the Scientific Advisory Board of Kite Pharma Inc.

**Judy Woodruff** (PBS NewsHour) has been named to the Carnegie Corporation of New York Board of Trustees.

## Select Publications

### Poetry

**Renato Rosaldo** (New York University). *The Day of Shelly's Death: The Poetry and Ethnography of Grief*. Duke University Press, January 2014

Fiction

**Jerry Pinkney** (Jerry Pinkney Studio). *The Tortoise & the Hare*. Little, Brown Books, October 2013

**Anna Quindlen** (New York, New York). *Still Life with Bread Crumbs*. Random House, January 2014

Nonfiction

**Bruce Ackerman** (Yale University). *We the People, Volume 3: The Civil Rights Revolution*. Harvard University Press, March 2014

**Kwame Anthony Appiah** (New York University). *Lines of Descent: W.E.B. Du Bois and the Emergence of Identity*. Harvard University Press, February 2014

**David Bromwich** (Yale University). *The Intellectual Life of Edmund Burke*. Harvard University Press, May 2014

**Peter Brooks** (Princeton University) and Hilary Jewett (Princeton University). *The Humanities and Public Life*. Fordham University Press, March 2014

**Jonathan Brown** (New York University). *In the Shadow of Velázquez: A Life in Art History*. Yale University Press, June 2014

**John Browne** (Royal Academy of Engineering). *Seven Elements That Changed the World: An Adventure of Ingenuity and Discovery*. Pegasus Books, February 2014

**Caroline Bruzelius** (Duke University). *Preaching, Building, and Burying: Friars in the Medieval City*. Yale University Press, June 2014

**Lawrence Buell** (Harvard University). *The Dream of the Great American Novel*. Harvard University Press, February 2014

**Gerhard Casper** (Stanford University). *The Winds of Freedom: Addressing Challenges to the University*. Yale University Press, February 2014

**Keith Christiansen** (Metropolitan Museum of Art). *Piero della Francesca: Personal Encounters*. Yale University Press, February 2014

**Sheldon Danziger** (University of Michigan) and Martha J. Bailey (University of Michigan), eds. *Legacies of the War on Poverty*. Russell Sage, July 2013

**Veena Das** (Johns Hopkins University), **Arthur Kleinman** (Harvard University), Michael Jackson (Harvard Divinity School), and Bhrigupati Singh (King's College London). *The Ground Between: Anthropologists Engage Philosophy*. Duke University Press, May 2014

**David Brion Davis** (Yale University). *The Problem of Slavery in the Age of Emancipation*. Knopf, February 2014

**Denis Donoghue** (New York University). *Metaphor*. Harvard University Press, April 2014

**John Dunn** (King's College, Cambridge). *Breaking Democracy's Spell*. Yale University Press, July 2014

**Robert A. Ferguson** (Columbia University). *Inferno: An Anatomy of American Punishment*. Harvard University Press, March 2014

**Henry Louis Gates, Jr.** (Harvard University) and David Bindman (University College London), eds. *The Image of the Black in Western Art, Volume V: The Twentieth Century, Part 1: The Impact of Africa*. Harvard University Press, February 2014

**Greg Grandin** (New York University). *The Empire of Necessity: Slavery, Freedom, and Deception in the New World*. Metropolitan Books, January 2014

**Christopher P. Jones** (Harvard University). *Between Pagan and Christian*. Harvard University Press, March 2014

**George Kateb** (Princeton University). *Human Dignity*. Harvard University Press, March 2014

**Arthur Kleinman** (Harvard University), **Veena Das** (Johns Hopkins University), Michael Jackson (Harvard Divinity School), and Bhrigupati Singh (King's College London). *The Ground Between: Anthropologists Engage Philosophy*. Duke University Press, May 2014

**Stephen M. Kosslyn** (The Minerva Project) and G. Wayne Miller (The Providence Journal). *Top Brain, Bottom Brain: Surprising Insights into How You Think*. Simon & Schuster, November 2013

**Madeleine M. Kunin** (University of Vermont) and Jennifer Baumgardner (The Feminist Press at CUNY), eds. *We Do! American Leaders Who Believe in Marriage Equality*. Akashic Books, November 2013

**Bruno Latour** (Institut d'Etudes Politiques). *An Inquiry into Modes of Existence: An Anthropology of the Moderns*. Harvard University Press, July 2013

**Alan Lightman** (Massachusetts Institute of Technology). *The Accidental Universe: The World You Thought You Knew*. Pantheon, January 2014

**Lawrence Manley** (Yale University) and Sally-Beth MacLean (University of Toronto). *Lord Strange's Men and Their Plays*. Yale University Press, April 2014

**Jerome McGann** (University of Virginia). *A New Republic of Letters: Memory and Scholarship in the Age of Digital Reproduction*. Harvard University Press, March 2014

**Svante Pääbo** (Max-Planck-Institut für evolutionäre Anthropologie). *Neanderthal Man: In Search of Lost Genomes*. Basic Books, February 2014

**Charles Parsons** (Harvard University). *Philosophy of Mathematics in the Twentieth Century*. Harvard University Press, March 2014

**Henry Petroski** (Duke University). *The House with Sixteen Handmade Doors: A Tale of Architectural Choice and Craftsmanship*. W.W. Norton, May 2014

**Robert C. Post** (Yale Law School). *Citizens Divided: Campaign Finance Reform and the Constitution*. Harvard University Press, June 2014

**Stanley B. Prusiner** (University of California, San Francisco). *Madness and Memory: The Discovery of Prions – A New Biological Principle of Disease*. Yale University Press, April 2014

**Ingrid D. Rowland** (University of Notre Dame). *From Pompeii: The Afterlife of a Roman Town*. Harvard University Press, March 2014

**Elaine Scarry** (Harvard University). *Thermonuclear Monarchy: Choosing Between Democracy and Doom*. W.W. Norton, February 2014

**Laurence Senelick** (Tufts University) and Sergei Ostrovsky (Tabakov Theater-Studio). *The Soviet Theater: A Documentary History*. Yale University Press, June 2014

**Ian Shapiro** (Yale University) and Joseph Lampert (Portland State University). *Charter of the United Nations: Together with Scholarly Commentaries and Essential Historical Documents*. Yale University Press, April 2014

**Werner Sollors** (Harvard University). *The Temptation of Despair: Tales of the 1940s*. Harvard University Press, April 2014

**Charles Taylor** (McGill University). *Dilemmas and Connections*. Harvard University Press, April 2014

**Billie Tsien** (Tod Williams Billie Tsien Architects, LLP) and **Tod Williams** (Tod Williams Billie Tsien Architects, LLP). *Wunderkammer*. Yale University Press, December 2013

**James Wei** (Princeton University). *Great Inventions that Changed the World*. John Wiley Company, July 2012

**Tod Williams** (Tod Williams Billie Tsien Architects, LLP) and **Billie Tsien** (Tod Williams Billie Tsien Architects, LLP). *Wunderkammer*. Yale University Press, December 2013

**Garry Wills** (Northwestern University). *Making Make-Believe Real: Politics as Theater in Shakespeare's Time*. Yale University Press, June 2014

We invite all Fellows and Foreign Honorary Members to send notices about their recent and forthcoming publications, scientific findings, exhibitions and performances, and honors and prizes to [bulletin@amacad.org](mailto:bulletin@amacad.org). ■

AMERICAN ACADEMY  
OF ARTS & SCIENCES

Norton's Woods, 136 Irving Street, Cambridge, MA 02138  
telephone 617-576-5000, facsimile 617-576-5050,  
email [aaas@amacad.org](mailto:aaas@amacad.org), website [www.amacad.org](http://www.amacad.org)

BOARD OF DIRECTORS

Don M. Randel, *Chair of the Board*  
Diane P. Wood, *Chair of the Council; Vice Chair of the Board*  
Alan M. Dachs, *Chair of the Trust; Vice Chair of the Board*  
Jerrold Meinwald, *Secretary*  
Carl H. Pforzheimer III, *Treasurer*  
Nancy C. Andrews  
David B. Frohnmayer  
Helene L. Kaplan  
Nannerl O. Keohane  
Roger B. Myerson  
Venkatesh Narayanamurti  
Samuel O. Thier  
Pauline Yu  
Louis W. Cabot, *Chair Emeritus*

PUBLICATIONS ADVISORY BOARD

Jerrold Meinwald and John Mark Hansen, *Cochairs*;  
Jesse H. Choper, Denis Donoghue, Gerald L. Early,  
Carol Gluck, Sibyl Golden, Linda Greenhouse,  
John Hildebrand, Jerome Kagan, Philip Khoury,  
Steven Marcus, Eric J. Sundquist

EDITORIAL STAFF

Phyllis S. Bendell, *Director of Publications*  
Micah J. Buis, *Associate Director of Publications*  
Peter Walton, *Senior Editorial Assistant*  
Scott Raymond, *Layout & Design*

*Bulletin* Winter 2014  
Issued as Volume LXVII, No. 2  
© 2014 by the American Academy of Arts & Sciences

*The Bulletin of the American Academy of Arts & Sciences* (ISSN 0002-712X) is published quarterly by the American Academy of Arts & Sciences, 136 Irving Street, Cambridge, MA 02138. Periodicals rate postage paid at Boston, MA, and at additional mailing offices. Postmaster: Send address changes to *Bulletin*, American Academy of Arts & Sciences, 136 Irving Street, Cambridge, MA 02138.

The views expressed in the *Bulletin* are those held by each contributor and are not necessarily those of the Board of Directors and Members of the American Academy of Arts & Sciences.

PHOTO CREDITS

Martha Stewart	pages 2, 4, 6, 8, 10, 17, 36-37, 39, 41-42, 44-45, 47-48, 50-51, 53, 55, 58
University of Texas at Arlington	page 11
Gail Oskin Photography	pages 22-24, 26, 28
Global Relations Forum	page 31

AMERICAN ACADEMY OF ARTS & SCIENCES  
Norton's Woods  
136 Irving Street  
Cambridge, MA 02138-1996 USA

*telephone* 617-576-5000

*facsimile* 617-576-5050

*email* [aaas@amacad.org](mailto:aaas@amacad.org)

*website* [www.amacad.org](http://www.amacad.org)



---

AMERICAN ACADEMY  
OF ARTS & SCIENCES