



HARVARD Kennedy School

BELFER CENTER

for Science and International Affairs

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www.belfercenter.org

Technology & Governance 2.0

Belfer Center Conference Launches New Public Policy Focus at School

Leaders of the Science, Technology, and Public Policy (STPP) program at Harvard's Belfer Center brought together about 80 of the nation's top policy makers and entrepreneurs for a two-day conference in September to brainstorm ideas for a new Harvard Kennedy School initiative on technology and governance.

Venkatesh Narayanamurti, founder of Harvard's School of Engineering and director of the STPP program, assembled government officials including **Aneesh Chopra**, President Obama's chief technology officer, **Susan Crawford**, former special assistant to President Obama for science, technology, and innovation policy, and a 1997 Kennedy School MPP graduate, and **Karen Gordon Mills**, administrator of the Small Business Administration. From the technology sector were leading innovators such as **Mitch Kapor**, founder of Lotus Development Corp., **Paul Sagan**,

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Cutting-Edge Conference: Aneesh Chopra (right), the first federal chief technology officer, makes a point during a discussion with Susan Crawford, former special assistant to the president for science, technology, and innovation policy, at the Belfer Center's Technology & Governance 2.0 conference.

Countdown to Zero Draws Heavily from Center Nuclear Experts and Research

When the Academy Award-winning producer of *An Inconvenient Truth*, **Lawrence Bender**, wanted to create a nuclear threat film with the same impact, he turned to leading experts at the Belfer Center.

The resulting film, *Countdown to Zero*, focuses on the reality of nuclear danger in today's world and makes a strong case for securing nuclear materials against terrorists. With a powerful and persuasive use of photos, video, and narrative,

the film looks not only at the danger of nuclear terrorism, but also at the risk of accidents and dangerous proliferation of nuclear arsenals. The Belfer Center's **Graham Allison**, **Matthew Bunn**, and **Rolf Mowatt-Larssen** are interviewed extensively in the film, alongside statesmen such as former President **Jimmy Carter**, former British Prime Minister **Tony Blair**, former Russian President **Mikhail Gorbachev**, and former Pakistani President **Pervez**

Musharraf. Two Belfer Center alumni—**Jeffrey Lewis** and **Scott Sagan**—also are prominently featured.

Countdown to Zero makes a strong case for securing nuclear weapons against terrorists.

Countdown to Zero argues that the most dangerous nuclear threat today is a nuclear weapon in the hands of a terrorist who could use it to kill hundreds of thousands of people. The best intelligence tells us that al Qaeda has spent 15 years attempting to acquire weapons of mass destruction. No matter whether such

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Zeroing In: Following a screening of the documentary *Countdown to Zero*, sponsored by Harvard Kennedy School's Center for Public Leadership, Belfer Center Director **Graham Allison** (left) talks with *Countdown* producer **Lawrence Bender** (right), former CIA agent **Valerie Plame**, and **Peter Galison**, professor of the practice of science and physics at Harvard. Plame and Allison have significant roles in the documentary about global nuclear dangers.

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FROM THE DIRECTOR

Graham Allison

For nearly four decades, the Belfer Center has set the national standard for policy-relevant research on security issues. The International Security Program publishes by far the most influential journal on security policy in the United States. That is not just my opinion. *International Security*, launched by our founder **Paul Doty** (see pp. 11–13), repeatedly ranks first for citations per article among all journals in the field of international relations (#1 in the last 5 of 6 years). The Center is breaking new ground on a range of security issues, including our Project Minerva partnership with MIT on cyber threats, a complex new frontier for U.S. defense policy, and an Iran Negotiation Working Group. We are also pleased to welcome a new senior fellow, **Olli Heinonen**, the former deputy director of the IAEA, who clearly knows more about Iran's nuclear program than anyone outside Iran.

Successful foreign policy relies on more than just hard power ... [So] we are establishing a fourth program: diplomacy and international politics.

As colleague and Belfer Board member **Joe Nye** often reminds us, successful foreign policy relies on more than just hard power. So we have been very excited as **Nick Burns** builds a new fourth pillar of the Belfer Center's content. In addition to our programs on international security, science and technology, and energy and environment, we are establishing a fourth program: diplomacy and international politics.

Throughout the fall, Nick and his team have been hosting a series of high-profile events and speakers. Guests have included Deputy Secretary of State **James Steinberg**, Turkish Foreign Minister **Ahmet Davutoğlu**, and Israel's former foreign minister, **Tsippi Livni**. The new Crown-Belfer Initiative, run by Nick and **Shai Feldman**, has begun intense off-the-record discussions of the hottest topics in the Middle East for top academics from Greater Boston. Nick has partnered with the university-wide Program on Negotiation and Harvard Business School's **Jim Sebenius** to co-sponsor the Great Negotiator Award.

The new diplomacy program will be home to more than Nick's Future of Diplomacy Project. The Middle East Initiative has moved under the program's umbrella, alongside the Dubai Initiative. Nick also is planning to extend the program's efforts to include India and South Asia.

On the science policy, energy, and environmental fronts, **Venkatesh (Venky) Narayanamurti**, director of the Science, Technology, and Public Policy program, has launched an ambitious new initiative on technology and governance (see article on cover page). The inaugural step was the Technology and Governance 2.0 Conference, which Venky convened in September with more than 80 of the nation's top IT entrepreneurs and policy makers.

And as one will see in this issue of the newsletter, **Henry Lee's** team is tackling head-on a number of politically loaded environment and energy issues, not least how to pay for fixing our decrepit transportation infrastructure. **Calestous Juma**, the subject of our Spotlight in this issue, is on the verge of publishing what promises to be a pivotal book on how technology can revitalize agriculture in Africa.



Arctic Heat: Deputy Secretary of State **James Steinberg** speaks at a seminar hosted by the Center's Future of Diplomacy Project about the Arctic as a strategic hot spot that illustrates challenges and opportunities facing the Obama Administration. Also shown is Future of Diplomacy Project Director **Nicholas Burns** (right), along with professors **Meghan O'Sullivan** and **Joseph S. Nye**, members of the Center's board of directors.

Kevin Ryan, Jim Smith Head Center's Research, Communications Efforts



Kevin Ryan, a retired brigadier general with extensive experience in political-military affairs, missile defense, intelligence, and U.S.-Russian military relations, has been named executive director for research at the Belfer Center.

Ryan was a senior fellow with the Belfer Center from 2005 to 2008 and was vice president of business development at iRobot Corporation from 2008 to 2009. He returned to the Belfer Center in September 2009 to lead the Center's U.S.-Russia Initiative to Prevent Nuclear Terrorism, which seeks to improve joint U.S.-Russian understanding of the threat of nuclear terrorism and actions to prevent a nuclear attack by terrorists.

"Kevin Ryan brings extensive military experience to the executive director role and will be critical in helping the Belfer Center pursue solutions to the major international security challenges we face," Belfer Center Director **Graham Allison** said. "His leadership experience includes both high-level military and public policy roles, making him an ideal person for the position."

Ryan replaces **Eric Rosenbach**, who has become managing director of national security for the Markle Foundation.



James Smith, a longtime journalist with extensive international experience, is the Center's new communications and outreach director.

As foreign editor of the *Boston Globe*, Smith led the paper's coverage of the Iraq and Afghanistan wars, as well as conflicts in the Middle East and South Asia. At the *Globe*, he also served as the national political editor during the 2008 presidential election and created a popular blog that looked at Boston's connections to the world and the world's connections to Boston. Smith worked previously for the *Los Angeles Times* and the Associated Press, reporting from locations that included Mexico, South Africa, Tokyo, Buenos Aires, and The Hague.

Allison praised Smith as a "gifted foreign correspondent who spent time in South Africa working for the Associated Press, a South Africa newspaper group, and in other positions, while acquiring an MBA at South Africa's top business school, University of the Witwatersrand."

Smith replaces **Sasha Talcott**, who has begun business school at MIT Sloan School of Management.

Nobel Laureate Ahtisaari on Diplomacy, Negotiation

Negotiation 101 tells would-be mediators: Don't dictate the outcome to the parties, and keep your own opinions to yourself.

But **Martti Ahtisaari**, the former president of Finland who earned a Nobel Peace Prize in 2008 for his serial successes defusing several of the world's thorniest conflicts, shared some counterintuitive tradecraft when he accepted the Great Negotiator Award at Harvard University in September.

"If ... you don't make it clear where you are coming from, you can waste the rest of your days."

—**Martti Ahtisaari**

Ahtisaari told an audience of faculty and students that at the outset of each negotiation, he stated clearly to all sides what he thought the outcome would be—and then he gave the parties wide scope to reach that outcome. He also said he invoked his own values of fairness and justice to guide him rather than worry about meeting some impossible standard of objectivity.

Ahtisaari was awarded the Great Negotiator Award on September 27, 2010 between two panel discussions that examined his role in developing a final status for Kosovo between 2005 and 2008, and his mediation between rebels in the Indonesian province of Aceh and the national government toward the Helsinki Agreement in 2005.

The award was created a decade ago by the Program on Negotiation at Harvard Law School, and was co-sponsored for the first time this year by the Belfer Center's new Future of Diplomacy Project at Harvard Kennedy School.

Kennedy School Professor of Practice **Nicholas Burns**, faculty director of the Future of Diplomacy Project, co-presented the award and moderated the Kosovo panel. As U.S. under secretary of state for political affairs from 2005 to 2008, Burns had been closely involved with the final status process. Burns said Ahtisaari deftly coped not only with an intransigent Serbian government, but also with fractious parties within Kosovo and complex dynamics involving the European Union, the United States, and Russia.

Harvard Business School Professor **James Sebenius**, an expert on negotiation who is on the executive committee of the Program on Negotiation, moderated the Aceh panel.

"In all the places I have been involved, in Namibia, in Aceh, in Kosovo, I have known from the beginning what the outcome is going to be," Ahtisaari said. "If you don't, and you don't make it clear where you are coming from, you can waste the rest of your days."

Harvard Law School Professor **Robert Mnookin**, director of the Program on Negotiation, said in presenting the award: "You have the capacity to put yourself in shoes of people with very different perspectives. You see the world through their eyes. At the same time, you are prepared to be assertive and straightforward. In both these respects, we are learning a great deal from you."

Case studies prepared on both the Aceh and Kosovo negotiations by Harvard Kennedy School and Harvard Business School will be used to educate Harvard students in diplomacy and negotiation.

—James Smith



Nobel Negotiator: Martti Ahtisaari (speaking), Nobel Peace Prize laureate and former president of Finland, discusses his negotiating style in his acceptance of The Great Negotiator Award, co-sponsored by Harvard's Program on Negotiation and the Belfer Center's Future of Diplomacy Project. Also pictured, Future of Diplomacy Director **Nicholas Burns** (center) and Harvard Business School's **James Sebenius**.

Turkey's Foreign Minister Opens New Crown-Belfer Middle East Series

Turkish Foreign Minister **Ahmet Davutoğlu** opened the inaugural event of the Crown-Belfer Middle East Seminar Series in September. The series is a joint venture between the Belfer Center and Brandeis' Crown Center for Middle East Studies. **Lester Crown** and **Robert Belfer**, supporters of the two centers, were recognized during the event.

Foreign Minister Davutoğlu discussed Turkey's efforts to embrace its own multi-

regional identity and carry out a "pro-active, peace-oriented foreign policy agenda." Specifically, he said, Turkey has focused on increasing stability in the region through four major avenues: 1) fostering contact between other leaders in the region, 2) showing equal respect for the security of different ethnic and religious groups, 3) integrating Turkey's economy with that of its neighbors, especially Syria and Iran, and 4) eliminating ethnic tension by encouraging regional, religious, and ethnic integration. Davutoğlu said he hopes that one day ordinary citizens will be able to drive from Tel Aviv to Damascus to Istanbul and beyond without difficulty or concern.

Davutoğlu's talk was followed by questions regarding Turkey's work in Iran, involvement in resolving the Palestinian-Israeli conflict, and domestic reactions to the Gaza Flotilla raid.

Nicholas Burns, professor of the practice of diplomacy

and international politics and member of the Belfer Center's board of directors, introduced the event by highlighting the critical importance of the Middle East region, including current issues in Iran, Israel, and the Palestinian occupied territories. This is why Harvard and Brandeis wanted to bring Boston area experts together to discuss regional issues, he said.

Turkey's foreign minister was the ideal leader to launch the series due to Turkey's increasing influence in the Middle East, according to Burns.

"Turkey is the only government [in the region] that can talk effectively with every other government," he said. "There is a lot to admire in the work that Turkey has done."

Coordinated by the Belfer Center's Middle East Initiative, the inaugural event was attended by more than 30 Boston area scholars and journalists working on issues in the Middle East. **Shai Feldman**, director of the Crown Center for Middle East Studies at Brandeis University, co-chairs the series with Burns.

—Noelle Janka



Middle East Mission: Turkish Foreign Minister **Ahmet Davutoğlu** (3rd from left) following his presentation at the opening of the Crown-Belfer Middle East Seminar Series. Pictured, (left to right): **Nicholas Burns**, **Lester Crown**, Davutoğlu, **Robert Belfer**, **Namik Tan**, Turkey's ambassador to the U.S., and **Shai Feldman**.

New Studies Explore Biofuel Mandates, Transportation Revenue Options



How Good Politics Results in Bad Policy: The Case of Biofuel Mandates

—Published by Environment and Natural Resources Program

The biofuels industry has become big policy, big business, and increasingly controversial. While countries like the United States and Brazil use biofuels to support farmers, improve the environment, and increase energy security and economic independence by reducing the need for foreign oil, environmentalists challenge the assertion that biofuels, particularly corn ethanol, offer a meaningful reduction in greenhouse gas emissions.

In his new discussion paper, “How Good Politics Results in Bad Policy,” Harvard Kennedy School professor and Belfer Center Board Member **Robert Lawrence** makes the case that the growing concerns about the impact of biofuel targets and mandates are the predictable result of a failure to follow the basic principles of good policy-making.

Lawrence says there are inconsistencies between what biofuel supporters say and what

they really want from government policies, and he argues that the current U.S. biofuel mandates do not represent the most efficient or precise instrument to meet any of the policy’s stated goals.

Although current biofuel mandates are not good policy, they certainly represent an issue that has achieved political success. In the United States, both Republicans and Democrats support biofuels, especially in farm states.

The fact that biofuels can be justified in so many ways, Lawrence writes, has been a great source of political strength. Many groups have become interested in biofuels because production and use of these fuels impact three major policy areas—energy policy, environmental policy, and agricultural policy.

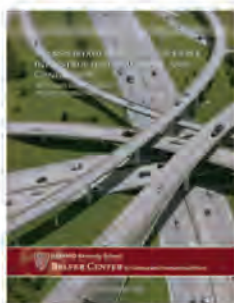
While the resulting breadth of support for biofuels has helped build political support for biofuel use, it is detrimental to good policy. Lawrence’s dilemma is that the principles of good policymaking require precision and

clarity of purpose, but the political realities of forming coalitions often benefit from ambiguity, hiding costs, accepting second-best justifications, and packaging policies together to further broaden support.

[C]urrent U.S. biofuel mandates do not represent the most efficient ... instrument to meet any of the policy’s stated goals.

Biofuels are not a policy or an end in itself, but an instrument, Lawrence writes. The first step is to agree on goals before deciding if a particular technology is the most efficient way to meet the policy goal. Focusing on the desired goal or target, he says, will increase the chances that policies will be rational and efficient.

See full text at: <http://belfercenter.org/BioFuelMandates/>



Transportation Revenue Options: Infrastructure, Emissions, and Congestion

—Published by Energy Technology Innovation Policy Research Group

The recent discussion paper “Transportation Revenue Options: Infrastructure, Emissions, and Congestion” is a summary of discussions from the Belfer Center’s May 2010 workshop “Transportation Revenue Options,” which brought together 27 transportation experts for a two-day workshop to discuss revenue-generating options such as higher fuel taxes, fees collected based on vehicle miles traveled (VMT), and congestion fees on major roadways.

The paper, by **Edward Huang**, a former ENRP/ETIP research fellow, **Henry Lee**, director of the Environment and Natural Resources Program (ENRP), **Jose Gomez-Ibanez**, ENRP faculty affiliate, and **Grant Lovellette**, research assistant, examines three main categories of user charges—charges based on fuel consumption, distance traveled, and congestion levels. It explores the financial and environmental advantages and disadvantages of each option and then discusses a number of pressing policy questions.

Policy makers have dealt with funding gaps in various ways, though rarely by raising gasoline taxes and other user fees, which is perceived as politically unpopular. Instead, despite growing budgetary problems, state and federal governments have reached into

their general funds to fill this gap. Some states have also issued bonds or raised sales taxes through local referenda approved by voters. As a result, an increasing share of transportation funding comes from nonusers and, to some extent, from future taxpayers who will have to repay the money borrowed to cover today’s transportation costs.

The current system ... is unlikely to be sustainable and VMT [mileage-based] fees will be needed as gasoline tax revenues decline.

Recognizing the tradition of the user fee principle, numerous studies have proposed alternatives to replenish transportation funds, such as raising gasoline taxes or, in light of rising fuel economy, charging motorists according to the number of miles they drive (VMT). Meanwhile, a growing number of stakeholders advocate funding options that also advance other objectives such as congestion fees or carbon taxes. While these other objectives are important, they inevitably complicate—and politicize—the debate on how to fund the nation’s transportation infrastructure.

The current system of fuel taxes still has the potential to generate large sums of revenues while reflecting many of the infrastructure and environmental costs of driving, but this is only true if fuel tax rates can be indexed

to reflect changes in inflation, fuel economy, and environmental externalities such as greenhouse gas emissions. In the long run, however, this system is unlikely to be sustainable and mileage-based fees will be needed as gasoline tax revenues decline.

The workshop determined that while changing policies is difficult, especially while the economy is weak, policymakers should take some initial steps, such as redefining the roles of federal and state governments and promoting research and demonstrations of VMT and congestion fees, to ensure that these options are well understood and, when chosen, ready to succeed.

See full text at: <http://belfercenter.org/TransportationRevenue/>



Going Green: **Joseph Lassiter** (left), Harvard Business School professor, discusses “Building Green Businesses: Issues in Entrepreneurial Finance” at a seminar co-sponsored by the Belfer Center’s Energy Technology Innovation Policy (ETIP) research group and Harvard Kennedy School’s Energy Consortium. **Henry Lee**, director of the Center’s Environment and Natural Resources Program, hosted the seminar.

These pages feature a few of the talented women and men who are current and former faculty, fellows, staff, and associates of the Belfer Center whose work is making significant contributions in public and private sectors around the world.

Faculty, Fellows, Staff, &

Featured Fellows—Focus on Research



Djavad Salehi-Isfahani researches impact of sanctions on Iran, youth unemployment on Middle East

Salehi-Isfahani is an associate and former fellow with the Belfer Center's Dubai Initiative.

Djavad Salehi-Isfahani believes sanctions against Iran will hurt Iranian citizens and may not achieve the goals of persuading Iran to change its nuclear policy.

A native of Iran and professor of economics at Virginia Tech, Salehi-Isfahani specializes in the economies of the Middle East and North Africa (MENA). He believes that ordinary Iranians who will suffer from the economic sanctions will not be sympathetic to the Western cause in part because the sanctions “do not carry a moral weight with them.”

“These new sanctions will add to the economic pain and deepen the current economic recession in Iran, but I’m not quite sure they will affect the country’s policies, specifically on the nuclear issue,” Salehi-Isfahani said. “Iran lives in a neighborhood where there are nuclear powers: India, Pakistan, Israel. Because the U.S. has not put similar pressure on these countries, Iranians feel that the U.S. does not want Iran to become a major regional power.”

Another pressing issue researched by Salehi-Isfahani, who has a bachelor’s degree from the University of London and a Ph.D. in economics from Harvard University, is the place of Middle East youth in a modern workforce. His research examines what has been termed “wait-hood,” the long period following school before Middle Eastern youth can begin careers.

In Iran, for example, about 25 percent of people under the age of 30 are unemployed, compared with just five percent of people over the age of 30, Salehi-Isfahani said. “That is exclusion of young people. They are not allowed to compete for jobs with older workers.” Allowing more competition in the labor market is important for youth, he said, because it enables them to accumulate, rather than depreciate, skills while searching for their first permanent job.

Salehi-Isfahani is encouraged by the development of the Dubai School of Government, which is a major partner with the Dubai Initiative. The DSG is a “very promising place in the region where this kind of research can be carried out, which would allow policy makers in the Persian Gulf and wider Middle East to see the benefits of doing good research with good data to understand problems and find solutions.”

—Meredith Blake



Charles (Skuk) Jones researches financing of alternative energy innovation

Jones is a research fellow with the Energy Research, Development, Demonstration and Deployment Policy project (ERD3) of the Belfer Center's Energy Technology Innovation Policy (ETIP) research group.

Nine years of service in U.S. Navy submarines was only part of Charles “Skuk” Jones’ training on energy technology innovation. One of his tours was the construction of the USS Seawolf, supervising inspections on all levels of the sea-going nuclear plant.

Jones, who has a Ph.D. in public policy and a background in engineering, became interested in science and its impact on policy and education while teaching high school physics. “The two good interest areas of research at that time were medicine and biotechnology, and energy and climate. My background was in physics and nuclear power, so energy seemed to be a good fit,” he said.

As a research fellow with the Belfer Center’s ERD3 project, Jones studies investment in innovation in the private sector and in public-private partnerships. In the spring of 2010, he co-authored a report that looked at the Department of Energy’s fiscal year 2011 budget request. The report pointed out that DOE’s funding request would not cover the energy demands of the 21st century. “We are still spending funds from the American Recovery and Reinvestment Act, which will run out in a couple of years,” Jones said. “We should try to set funding for steady growth and set a commitment to sustained efforts.”

Jones believes the future of alternative energy lies in research and policy making. For example, he said, research done on semiconductors in the U.S. has proven to be very effective and could be a model for research on global energy issues in the future.

Much remains to be done to improve energy systems and use, Jones said. “We will see how, in the near future, people wanting to start up businesses will come up with new energy technologies to compete with existing alternative energy systems, and competition will lead to the development of more efficient systems.”

“I want my kids to have grandchildren,” Jones said, “and this is one of the problems that will affect their future. Alternative energy innovation is going to require attacks on all levels, including policy, business, science and technology.”

—Lucía Córdón



Carlotta Minnella researches impact of culture on counter-terrorism policies

Minnella is a research fellow with the Belfer Center's International Security Program.

Growing up in Italy and studying in universities around the world has allowed Carlotta Minnella to gain a unique perspective on terrorism and culture. The spark for her interest in security studies came from a unique source—the movie version of Tom Clancy’s *The Hunt for Red October*. “At the time,” she said, “it raised my interest in 20th century history [and] Cold War insecurities.”

Minnella focused her studies on international relations theory and the effect of norms and cultural factors on foreign and national security policymaking. She has conducted research on security culture and counter-terrorism policies while at various universities, including Sciences Po Paris, Georgetown University, and the University of Oxford, where she is a doctoral candidate.

“[The Belfer Center offers] a unique combination of cutting-edge theory and practice that I don’t believe you can find anywhere else.”

Minnella’s Ph.D. dissertation focuses primarily on the effects of post-9/11 cooperation in multi-lateral settings on counter-terrorism and

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ENTE , and Alums

Belfer Center Programs and Projects: *International Security Program; Science, Technology, and Public Policy; Environment and Natural Resources Program; Diplomacy and International Politics; Dubai Initiative; Energy Technology Innovation Policy research group; Project on Managing the Atom; Science, Technology, and Globalization Project; Broadmoor Project; Harvard Project on International Climate Agreements; Initiative on Religion in International Affairs; Agricultural Innovation in Africa; U.S.-Russia Initiative to Prevent Nuclear Terrorism; Middle East Initiative; Future of Diplomacy Project; India and South Asia Program.*

Belfer Center Fellows Are Heart of Center's Research Community

Each year, the Center is enriched by the presence and research efforts of more than 60 research fellows drawn from governments, academia, and the public and private sector. The Center's 2010–2011 fellows hail from 15 countries in Africa, Asia, Europe, and North America. Research fellows generally are in residence for one or two years, conducting research, presenting and exchanging ideas, and advancing policy-relevant knowledge.

In addition to the research fellows, the Belfer Center hosts 17 Belfer IGA (International Global Affairs) Student Fellows this year. These Harvard Kennedy School students were selected for the fellowships from among numerous applicants concentrating their work at HKS on international and global affairs.

"If Belfer is the heart of international studies at Harvard Kennedy School, all of our fellows are our lifeblood," said Kevin Ryan, Belfer Center's executive director for research. "They bring the oxygen to our efforts to understand the world and develop policy recommendations to make that world safer and better for all."

A listing of Belfer Center's research fellows is available at <http://belfer-center.org/ResearchFellows/>. Information on Belfer IGA Student Fellows can be found at <http://belfercenter.org/IGASStudentFellows/>.



Faces of the Future: 2010–11 Belfer Center IGA Student Fellows with senior faculty and staff. Front (left to right): **Pamela Sud, Emily Janoch, Joshua Drake, Michele Goldman, Haney Hong, Carolyn McGourty, Sasha Rogers, Jinnyn Janoch, Michael Buonocore, Yumin Yeh.** Back row (far left to right): **Regan Turner, Saluja Saurabh, Graham Allison** (Belfer Center director), **Matthew Devlin, Eric Rosenbach** (Center faculty affiliate), **William Clark** (IGA Area Chair), **Ryan Clinton, Gretchen Bartlett** (IGA Area Manager), **Sayce Falk, Eric Joyce, Francisco Martin-Rayó, and Kevin Ryan** (Center executive director for research).

Carlotta Minnella (continued from page 5)

national security policy-making in various countries. She researches counter-radicalization initiatives to see how countries structure their national security policies in an international environment.

"Counter-radicalization and terrorism prevention look at the whole assortment of issues that come before a new generation of terrorists emerges. Among the policy-maker's toolkit, these policies are the ones that stand out as the most innovative and, in a sense, cutting-edge," she said. "It is interesting," she added, "to see how these policies have come about, whether domestic factors were enabling or constraining elements on them, and why they are spreading to countries with different threat perceptions—because this tells you something about the ways in which those countries cooperate in such a sovereign field as homeland security."

Minnella said she learned about and became interested in the Kennedy School and the Belfer Center through one of her professors—herself a former ISP fellow. "The Belfer Center has exceeded my expectations, and has been an extremely enriching experience in terms of coming in contact with research on counter-terrorism and international security. It's a unique combination of cutting-edge theory and practice that I don't believe you can find anywhere else."

—Emily Anderson

Condolences

The Belfer Center fondly remembers **Karen Ballentine**, a former International Security Program fellow (1996–97) and contributor to *International Security*. Ballentine passed away in July after a courageous fight with cancer. Her work was dedicated to researching and understanding conflict prevention, peace building, and the economic dimensions of armed conflict. She was a leading expert on the links between natural resources and conflict, making her a highly sought out expert by her colleagues, the broader academic community, and the United Nations.

Current and Former Fellows at Work

James Bieda (International Security Program (ISP) 2005–06) has been named regional manager in Korea for General Dynamics Information Technology. Bieda is a retired colonel from the U.S. Air Force.

Michael Boyle (ISP/Intrastate Conflict Program 2005–06) has been appointed assistant professor of political science at La Salle University.

Michael Horowitz (ISP 2005–07) has been appointed professor at the Browne Center for International Politics at the University of Pennsylvania. He recently published his first book, *The Diffusion of Military Power: Causes and Consequences for International Politics*, which assesses factors that drive the diffusion of new military innovations throughout the international system.

Azeem Ibrahim (ISP 2008–10) has been asked by the government of Pakistan to take a key role in authoring the country's new National Economic Strategy. The U.S. government supports Ibrahim's role and provides resources for his work.

Lt. Col. **Robert Pope** (ISP 2009–10) is now deputy branch chief of U.S. Central Command, U.S. Air Force, where he works on strategy, plans, and funding for security cooperation between the U.S. military and partner nations in the Middle East, Central Asia, and South Asia.

Elena Rodriguez-Vieitez (ISP/MTA 2008–09) has been named scientific project officer for the European Commission at the Institute for Prospective Technological Studies' Sustainable Production and Consumption Unit in Sevilla, Spain.

Wang Shacheng (ISP 2007–08) won the National Social Science Fund of China for his project "Study on China's Terrorism and Intelligence-led Counterterrorism." Funded by the Chinese government, the project is influential and highly respected in China's humanistic and sociological research fields.

Margaret Sloane (ISP 2002–07) has been named associate research fellow at the Center for the Study of Weapons of Mass Destruction at National Defense University.

Andrea Strimling (current ISP fellow) is researching and consulting for the U.S. Army Corps of Engineers on different tools for use in Afghanistan and other reconstruction operations.

Conference Explores Major Technology Teaching Needs *(continued from page 1)*

CEO of Akamai Technologies, and **Ian Freed**, vice president for Amazon Digital Services—at just one of the eight working sessions.

The conference, organized by STPP's **Karin Vander Schaaf** and **Tolu Odumosu**, also exploited some innovative technology. On the opening evening, Harvard Kennedy School Dean **David Ellwood** engaged in a spirited question and answer session with the conference delegates from a room at the Harvard Shanghai Center during his trip to China. Internal "tweets" about discussions were displayed on large screens throughout the conference.

The conference examined ... net neutrality ... advances in broadband, privacy, and open government issues ...

The conference examined critical aspects of the intersection of technology policy and governance, including net neutrality, looming technological advances in broadband, privacy, and open government issues that could shape technology and communications innovation in coming years. A panel of Kennedy



Critical Intersections: Venkatesh Narayanamurti, director of the Belfer Center's Science, Technology, and Public Policy Program, who planned and convened the conference, makes a point during a discussion.

School students talked about some of their own uses of cutting-edge technology.

Tim Berners-Lee, inventor of the World Wide Web and a researcher at MIT, gave a provocative lunch address, challenging governments, businesses, and academic institutions to recognize the need for free online access to data of all sorts. He reminded the audience that there are "ten to the eleventh power web pages out there" on the Web—

about the same number as the number of neurons in the human brain.

Narayanamurti described the goal of the conference as "a workshop where all participants will contribute ideas on how HKS can best educate its students and influence government policy on information and communication technologies as well as the global impact of ICTs on governments."

He noted that several Harvard centers tackle technology and communication policy issues, including the Berkman Center for Internet and Society and the Harvard Business School. "Our intention is to integrate the HKS program with these other efforts at the university," he said.

—James Smith

Tapping Top Talent: Mary Jo Bane (right), academic dean of Harvard Kennedy School, moderates the panel "Kennedy School Students Entering the Digital World" at the conference. Panelists included (left to right) HKS students **Seth Flaxman** (MPP '11), **Yasmin Fodil** (MPP '10 and co-founder, BYO Consulting), and **Philipp Schroegel** (MPP '11), U.S. Chief Technology Officer **Aneesh Chopra** (MPP '97), and Amazon Kindle Vice President **Ian Freed**.



Center and China Foundation: Can Conflict Be Avoided Between U.S. and China?

History suggests that as a rising power ascends, there will be conflict with established leaders. Such power transitions have occurred 11 times since 1500 AD, and war between the parties took place in eight of those cases.

Economic forecasts suggest that China will approximate U.S. economic power sometime in the 2020s, and the question arises: Can conflict then be avoided, or will we extend the litany of past conflicts?

For conflict to be avoided ... person-to-person and academic and policy interchanges are essential.

Over two days in August, the Belfer Center's **Graham Allison**, **Joseph S. Nye**, and **Richard Rosecrance** joined a debate on that question at a workshop in Washington with

director **Lu Mai** and other Chinese experts from the China Development Research Foundation in Beijing.

The participants addressed the question from economic, democratic, and power standpoints, and concluded that conflict was still possible between the U.S. and China, but could be averted by progressive and rapid adjustments to each other.

One participant noted that China is an outlier—a fast-rising country that still lacks democratic institutions.

There are many points of tension between the two powers: Taiwan, the South China Sea, military arms increases, and differences over non-proliferation issues. In economic terms, the trade imbalance has not been rectified, and the Renminbi remains inconvertible at too low a valuation. Also, the Chinese population does

not yet fully benefit from a greater consumption sustained by Chinese industrial progress.

Chinese participants stressed the need for the U.S. to accept the primacy of the Chinese position in East Asia, including Taiwan and the offshore islands. American participants said that Chinese moves in East Asia must be peaceful or they would be rejected.

For conflict to be avoided, both sides agreed that person-to-person and academic and policy interchanges are essential. These exchanges did not generally take place between Germany and Britain or Germany and Russia on the eve of 1914.

These preliminary hypotheses will be considered further in meetings in Beijing on January 10–11, 2011.

—Richard Rosecrance

Q&A

Olli Heinonen

The West's confrontation with Iran over its nuclear program has been one of the most strained, high-stakes diplomatic showdowns since the end of the Cold War. As deputy director of the International Atomic Energy Agency (IAEA) and head of its Safeguards Program, Olli Heinonen grew to know more about Iran's nuclear program than perhaps anyone outside of Iran. For Heinonen, a native of Finland who spent 27 years in the IAEA, the Iran case was just the latest in a series of nuclear sleuthing missions, from Pakistan to North Korea. Heinonen resigned from the IAEA in September to become a senior fellow in the Belfer Center. The Belfer Center's James Smith asked Heinonen to reflect on Iran and his own career.



Q Since 2002, the IAEA and the West have issued constant critiques of Iran's nuclear program, yet the enrichment goes on. From your new vantage point as a Belfer Center fellow, do you think the overall IAEA monitoring process is effective, or does it need to be overhauled? What changes would you recommend?

Indeed, after 30 reports and half a dozen UN Security Council resolutions, we are still at a stalemate. The IAEA is not able to confirm that all nuclear material in Iran is under safeguards. While the IAEA verification system has been able to throw light on Iran's clandestine activities, which were spread over two decades, it has not made much real progress since summer 2008 in resolving Iran's longstanding issues such as the possible military dimension.

The fact that Iran has repeatedly not heeded UN Security Council resolutions, and challenges the authority of the Security Council and the IAEA Board, has eroded the credibility of the whole NPT verification regime and sets a negative precedent. There is no single, simple recipe to rectify the current situation, other than to get back to the negotiation table with Iran. The international community has to present clear deadlines and alternatives to Iran, and make clear why it is important to restore Iran's standing as a responsible member of the Non-proliferation Treaty community.

Q What should people be looking for as they try to assess Iran's nuclear intentions? Is the key issue enrichment, or Iran's access to raw materials such as uranium and aluminum for the centrifuges? What are the warning signs for breakout toward a nuclear weapon?

The first problem is the confidence deficit, which results from almost two decades of clandestine nuclear activities and subsequent concealment activities. While Iran took steps in 2004 to be more forthcoming, e.g., in applying the Additional Protocol and suspending enrichment, it unfortunately reversed those steps and stopped the early provision of design information when the IAEA started to investigate old and emerging information on possible military dimensions of the program. This, together with Iran's drive to push ahead with larger-scale enrichment, when there is no immediate need for that, is puzzling the minds of many people. Iran talks about its rights, but it also knows that with rights come responsibilities and obligations. It is very important that Iran takes those extra steps to rectify the situation.

The international community has to present clear deadlines and alternatives to Iran.

—Olli Heinonen

Q Iran has kept on enriching uranium, most of it to 3.5 percent purity. But recently Iran has been enriching some uranium up to 20 percent, for the Tehran research reactor. Should the world be more worried by enrichment of 20 percent, knowing that Iran would have to enrich to above 90 percent to produce weapons-grade uranium?

From the technical point of view, there is a big difference in production of 3.5 and 20 percent enriched uranium (U-235%). Going from 3.5 percent to 20 percent enriched uranium also brings an important feature. Iran, like others, does this by recycling the 'tails' of the process, which makes the process more economical. This stage of recycling experience is of paramount importance for anyone who wants to pursue higher enrichments.

Securing Safeguards: Olli Heinonen (center), Belfer Center senior fellow and former deputy director general of the IAEA, makes a point at a Center seminar about the Iranian nuclear program to Matthew Bunn, associate professor with Belfer Center's Managing the Atom Project. Henry Lee, director of the Center's Environment and Natural Resources Program, also took part in the discussion.



Q Much of our focus is on Iran, but are there other nuclear trouble spots we should be worrying about? How about Syria and its program? Has it regained any ground since the Israeli air strikes destroyed its reactor site in September 2007? How about North Korea?

The Syrian case, and the limited progress made since 2007, is another challenge to the IAEA's verification authority. Without going into too much detail, it is time to consider special inspections—an option available to the Agency—to find out the facts associated with the Al Kibar/Dair Alzour site. I certainly would have preferred that the IAEA got engaged at an earlier stage, but this is the situation where we are today. So let us use the full authorities the IAEA has to make sure that all nuclear activities and materials in Syria are under IAEA safeguards.

As for North Korea, it goes without saying that North Korea should be brought back under the international verification's regime. One lesson to take away from the safeguards cases we have before us is that detections of possible safeguards breaches or violations should be brought before the Board at an earlier rather than later date.

Q Your wife, Yvonne Yew, has also joined the Belfer Center as a fellow, studying the non-aligned movement in the Future of Diplomacy Project. What prompted you both to come from Vienna to Cambridge right after you left the IAEA?

I have followed for years the important and unique work of the Belfer Center and the Kennedy School, which have very talented people and a highly motivating environment. The programs do important work and outreach in bringing about a better, safer, and more secure world. It was not easy to leave the IAEA after 27 years of service, but, at this stage, I feel that I may be able to do more by bringing those experiences to this environment. For both myself and Yvonne, we hope that our separate work here at Harvard can contribute to making that difference. ■

SPOTLIGHT

Calestous Juma

Calestous Juma, professor of the practice of international development at Harvard Kennedy School, wears many hats in his work at the Belfer Center. He is director of the Science, Technology, and Globalization project, and principal investigator for the Agricultural Innovation in Africa project, funded by the Bill and Melinda Gates Foundation. He also is a member of the Belfer Center board of directors. He has been elected to several scientific academies, including the Royal Society of London, the U.S. National Academy of Sciences, the Academy of Sciences for the Developing World, the UK Royal Academy of Engineering, and the African Academy of Sciences. He has won numerous awards for his work on sustainable development. His latest book, on agricultural innovation in Africa, will be published by Oxford University Press in December.



Calestous Juma holds a vivid memory from his childhood in western Kenya on the banks of Africa's largest lake: His mother learned a neighboring language in her 40s so she could make the transition from farmer to trader, selling fish from Lake Victoria.

"That had a big impact on me—to see her learn a new language so she could sell fish to pay my school fees," Juma said as he recounted the path from his boyhood in Kenya to Cambridge, where he joined the Harvard Kennedy School in 1999.

His household, Juma recalled, was always "very experimental," where "ideas were always being discussed in the sense of their utility—how you solve problems." His father, a carpenter, redesigned houses to keep out mosquitoes and capture rain water, and introduced new crops from Uganda.

"I had an early interest in going into the sciences, to understand how sciences contribute to society," he said. "By the age of 12, I was already an accomplished repairman myself, fixing all things electrical."

Those family roots still ground his work today. In December, Oxford University Press will publish his latest book, *The New Harvest: Agricultural Innovation in Africa*, which has the unusual personal endorsement of four sitting presidents as well as a Nobel laureate.

The book argues that "agriculture needs to be viewed as a knowledge-based entrepreneurial activity." It suggests concrete ways to boost agricultural research across Africa and says that effort must be part of "a larger agenda to promote innovation, invest in enabling infrastructure, build human capacity, stimulate

entrepreneurship, and improve the governance of innovation."

On his way to a Harvard professorship, Juma skipped an undergraduate university education entirely. He attended teachers' college in central Kenya and taught elementary school kids in the morning so he could keep his afternoons open for studying and writing.

His early writings took the form of frequent letters to the editors of newspapers, so "I was one of Africa's first bloggers."

[Juma's] latest book, *The New Harvest: Agricultural Innovation in Africa* ... has the unusual personal endorsement of four sitting presidents as well as a Nobel laureate.

That led him to a one-year stint writing for the *Daily Nation* in Nairobi on environmental issues, which brought him a job offer from the Environmental Liaison Center International, a non-profit chaired by **Wangari Maathai**, who later won the Nobel Peace Prize. He soon won a Canadian scholarship to Sussex University in England—where he earned his master's and doctoral degrees in three and a half years.

Juma went home to Kenya in 1988 and founded Africa's first independent think-tank. He ran the African Center for Technology Studies for eight years, earning a reputation as one of Africa's innovative voices in leveraging science and technology for economic growth in developing countries.

He also was the first permanent executive secretary of the United Nations Convention on Biological Diversity, a role that helped him forge ties with influential officials across Africa.

He arrived at the Kennedy School as it grappled with how to confront issues of African underdevelopment. Professors **John Holdren** and **Bill Clark** were strengthening research on science, technology, and sustainable development policy within the Belfer Center.

Juma's work has always focused on what he describes as "evolutionary technological change." His early research examined how technology changes over time as part of a wider system of innovation. For example, he did his doctoral research on the introduction of fuel ethanol technology in Brazil, Zimbabwe, and Kenya. "I developed an evolutionary approach for understanding economic growth as shaped by the co-evolution of technology and institutions."

That's one reason he is working not only with nations in Africa but with regional economic blocs and other cross-border organizations.

"Africa hasn't fully tapped the power of technology because economies are organized around nation-states with small markets," he said.

From his early "blogging" days, Juma has never lost his skill and commitment to networking. He grew to know presidents all over Africa and has been a frequent adviser to governments. In 2007, he gave the keynote address at a special summit of African presidents on science and technology. Earlier this year, he helped the leaders of the 19-country Common Market for Eastern and Southern Africa (COMESA) to develop a blueprint on how to apply innovation in regional integration.

Juma has thousands of names on his BlackBerry and maintains active Facebook, Twitter, and LinkedIn accounts. He also maintains a Yahoo group on innovation policy. "I share news on innovation with thousands of followers daily. I have always had an interest in reaching out. I learn more by sharing information, and I am an avid collector of contacts. I am also an amateur historian of coffee and frivolous objects."

—James Smith



Africa-China Concerns: Calestous Juma, professor of the practice of international development (right), speaks with **Sagal Abshir** (left), Harvard Kennedy School Mason Fellow (MPA '11), and **Wang Sheng**, a Lee Kuan Yew fellow (MPM '10) who is deputy director of the Department of African Affairs, Ministry of Foreign Affairs of China, prior to a discussion with HKS students on the China-Africa relationship.

Center and Russia's Kurchatov Institute Urge Global Cooperation on Nuclear Energy Growth, Safety, and Security

Russia, the United States, and other countries must cooperate to enable large-scale growth of nuclear energy around the world while achieving even higher standards of safety, security, and nonproliferation than are in place today. This will require building a new global framework for nuclear energy, including new or strengthened global institutions.

The Belfer Center's Managing the Atom (MTA) Project and the Russian Research Center's Kurchatov Institute offer these and additional recommendations in a new collaborative report, published in October. The report's authors and project co-directors, **Matthew Bunn**, associate professor of public policy at the Harvard Kennedy School and co-principal investigator of MTA, and **Vyacheslav P. Kuznetsov**, scientific secretary of the Academic Council at the Kurchatov Institute, led a multi-national team of more than a dozen experts in developing the report and its recommendations.

The basis of the report is the April 2009 meeting of Russian President **Dmitry Medvedev** and U.S. President **Barack Obama**. Following the summit, Medvedev and Obama said: "Together, we seek to secure nuclear weapons and materials, while promoting the safe use of nuclear energy for peaceful purposes." The two presidents agreed that they sought "to promote international cooperation in the peaceful use of nuclear energy while

strengthening the nuclear non-proliferation regime." At their July 2009 summit, the presidents repeated these objectives, and established a joint Nuclear Energy and Nuclear Security Working Group co-chaired by **Sergei Kirienko**, director-general of the Russian State Atomic Energy Corporation (Rosatom), and **Daniel Poneman**, U.S. deputy secretary of energy. The report provides recommendations for steps Russia and the United States can take to achieve these common goals.

The report begins with an outline of the world's energy challenges in the 21st century, the potential role of nuclear energy in addressing these challenges, and the issues that must be addressed if nuclear energy is to play a major role in safely meeting the world's 21st century energy needs.

The United States and Russia bear special responsibility for strengthening global efforts [related to] ... nuclear energy.

The authors argue that with more than 95 percent of the world's nuclear weapons in Russia and the U.S., most of the world's weapons-usable nuclear material, and the world's longest experience in nuclear energy, the United States and Russia bear special responsibility for strengthening global efforts to minimize the risks and maximize the



Meeting of Minds: U.S. President **Barack Obama**, right, and Russian President **Dmitry Medvedev** during their meeting on nuclear disarmament in April 2010.

benefits of the use of nuclear energy. Expanded U.S.-Russian cooperation will be essential in achieving this objective.

The report concludes with recommendations for Russia and the United States to address issues related to: safety, security, non-proliferation, extension of uranium resources, waste management, and cost reduction. It also includes recommendations for making nuclear energy more broadly available around the world and more capable of addressing multiple needs. The authors describe particular areas of joint research and development that should be undertaken, and the need to move forward with the bilateral Agreement for Cooperation in the Field of Peaceful Uses of Nuclear Energy, to provide a government-to-government framework for this cooperation.

—Neal Doyle

Countdown to Zero Features Allison, Bunn, Mowatt-Larssen *(continued from page 1)*

a device were detonated in Moscow, New York, Beijing, or another city around the world, it would result in tremendous loss of life, undermine our global economy, and fundamentally change our world.

The film also shows how the U.S. and Russia keep thousands of their nuclear weapons ready to launch on a moment's notice. If even one of these weapons were to be launched—through accident or miscalculation—the consequences would be catastrophic.

The film also warns against complacency. "Two years ago, conventional wisdom declared the U.S.-led global financial order to be sound, stable, and resilient, despite repeated warning signs to the contrary," Allison said. "Today we all wish we could have acted in time to prevent a Great Recession. As *Countdown to Zero* clearly demonstrates, the global nuclear order today could be as fragile as the global financial order was two years ago. We dare not wait for a catastrophic collapse of the nonproliferation regime. From the consequences of such an event, there is no feasible bailout."

Countdown to Zero illustrates the very real danger of terrorists acquiring nuclear materials, and it shows why we need to take urgent action today to secure these materials to a gold standard—beyond the reach of terrorists or thieves," Allison said. "I am optimistic that *Countdown to Zero* will do for nuclear terrorism what *An Inconvenient Truth* did for climate change."

The film opened over the summer in cities throughout the country. The DVD is scheduled for release in November.

Recommendations on citizen actions to prevent nuclear proliferation and terrorism can be found at <http://belfercenter.org/CitizenAction/>



Opening Night: World Security Institute President **Bruce Blair** (left), executive producer of *Countdown to Zero*, with Belfer Center Associate Professor **Matthew Bunn** (center), nuclear expert and co-principal investigator of the Center's Project on Managing the Atom, with Belfer Center International Council member **Dean LeBaron** at the Kendall Square Cinema prior to Boston's opening of *Countdown* in July. Blair and Bunn are prominently featured in the documentary. LeBaron sponsored the Boston event.

Paul Doty remembers his excitement the day he was to begin chemistry his junior year of high school. He had a small lab at his house in Chicora, Pennsylvania, and couldn't wait for his first chemistry class. As it turned out, the teacher's "acquaintance with chemistry was extremely modest," and after a few days of being corrected by his student, the teacher turned the class over to Doty. "Why don't you teach chemistry?" he asked.

That experience, Doty says, was one of several "lucky" events that directed his trajectory toward what was to become an outstanding career in chemistry, biochemistry, arms control, and international security. Another was his mother's wish for him to go to the local college and to teach in the same wooden schoolhouse he attended. That scenario's lack of appeal was enough to motivate Doty to win acceptance from Penn State, where he earned his undergraduate degree in chemistry. Having distinguished himself there, he went on to graduate school at Columbia University to study physical chemistry.

At Columbia in 1941, the atmosphere was electric. Pearl Harbor was attacked, the war was on, papers were being published on splitting the atom, and several prominent scholars in that field were at Columbia. Paul Doty began attending classes taught by **Enrico Fermi**, **Isadore I. Rabi**, **Edward Teller**, and **Harold Urey**. "It was all in the air," he said, remembering one day when he got on the elevator and there was Danish physicist **Nils Bohr**. Bohr had just escaped from Denmark, "so one just had to put the dots together."

The seed was planted • Columbia, 1941

Before long, Paul Doty was working the night shift on the Manhattan Project, trying to separate uranium isotopes. Many of his professors soon "disappeared" from campus, but he stayed to earn his Ph.D. with a 14-page dissertation—and the seed was planted for his future work in science and arms control.

From Columbia, Doty went to Cambridge University with a fellowship and a growing interest in molecular biology. While there, he traveled around Europe on lecture tours. "It was a wonderful eye opening time," he said.

In 1948, Harvard offered Doty an assistant professorship, and for the next 20 years, Harvard's chemistry department was his home base. With his wife, **Helga Boedtker**, he built a world-renowned lab which she helped manage for four decades. A record-setting 10 of his research students were later elected to the National Academy of Sciences.

In 1968, Doty founded Harvard's Department of Biochemistry and Molecular Biology, now known as the Department of Molecular and Cellular Biology. Serving as its first chairman, this became the conduit for bringing the new biology to Harvard, much helped by the recruitment of **James Watson**, co-discoverer of the structure of DNA.

One of the best-known works of Doty's laboratory was the demonstration that the two separated strands of a double helix can be reunited to reform the original active molecule. This technique became the basis of forming new forms of DNA and of determining the sequence of the four units that make up nucleic acid strands—culminating in the Human Genome Project. Doty's talents included co-founding the *Journal of Molecular Biology* as he had earlier the *Journal of Polymer Science*. Both continue as leading journals in their fields.



Doty (right) receiving an honorary degree at University of Chicago, with UC President **George Beadle**, 1966.

A game changer • Pugwash, 1957

As president of the Federation of American Scientists in 1957, Doty was invited to a meeting in Pugwash, Nova Scotia, to follow up on the 1955 global appeal by **Bertrand Russell** and **Albert Einstein** to control nuclear weapons and prevent a world war. The meeting for Doty was a "game changer."

"The Russians brought us three people [to that meeting] who were examples of what you hoped you would find buried somewhere in Russia," Doty said in his September 2010 interview with Belfer Center International Security Program Director **Steven Miller**. "One was a well-known physicist who had been a negotiator for them in Geneva; then the leader of the group was the vice president of their Academy of Science, **Alexander Topchiev**, a rugged Georgian, but absolutely committed to being a bulldog going after more collaboration between Russia and the U.S. . . . The third one was a rather non-political physicist who had done a lot of work on radiation damage, which coincided with what we were doing and which was really the easiest thing to agree on at this little meeting. . . . Topchiev invited me to come visit Russia and I went the next year."



Paul Doty with his wife, **Helga**.

Scientific diplomacy and arms control • Russia, 1958

Doty's trip to Russia in 1958 convinced him that he could help prevent the use of nuclear weapons by working with Soviet scientists outside official channels. In the following years, he made more than 40 trips to the Soviet Union to promote careful examination of the technical aspects related to nuclear arms control and avoiding nuclear war. Doty was group leader for visits with top Russian scientists who included two vice presidents of the Soviet Academy of Scientists and the physicist and bomb maker turned dissident **Andrei Sakharov**. Shortly after one meeting in Sakharov's Moscow flat, the dissident was arrested by Krushchev's forces and exiled to Gorky for six years.

The U.S.-Russia efforts led by Doty were especially successful because many of the scientists later became influential advisors to President **Mikhail Gorbachev**, whose actions would help end the Cold War.

Simultaneously with his U.S./Russia efforts, Doty became a consultant to the American Academy of Arts and Sciences as they prepared their seminal issue on arms control in the journal *Daedalus*. Scheduled for publication in 1960, this work initiated nuclear arms control as a valid academic field of study and helped guide a plan for the meeting between Presidents **Eisenhower** and **Khrushchev** in Paris in 1960.

CELEBRATING Belfer Center Founder PAUL DOTY at 90

On these pages, we celebrate **Paul Doty**, founder and director emeritus of the Belfer Center and member of our board of directors as well as emeritus professor of public policy at Harvard Kennedy School and Mallinckrodt Professor of Biochemistry, emeritus, at Harvard. Here, we share a snapshot of Paul's life and his contributions to science and international security. At 90, he continues his outstanding contributions to the Belfer Center and global community through his ongoing research, insights, and guidance.

This article was drawn from a number of sources including transcripts of a 90th birthday celebration for Doty with colleagues from the Belfer Center and Harvard's Department of Molecular and Cellular Biology in June 2010, an interview with Steven Miller, director of the Belfer Center's International Security Program, in September 2010, and an article in the fall 2005 Belfer Center newsletter.



Paul Doty standing by his founder's photo in the Belfer Center hallway. Doty founded what is now the Belfer Center for Science and International Affairs in 1974.

Another game changer • Kennedy, 1960



Paul Doty (left), with President **John F. Kennedy** and MIT President **Jerome Wiesner**, 1960. Both served on the President's Council of Advisors on Science and Technology (PCAST).

John F. Kennedy's election as president in 1960 was another game changer for Doty—a time when his interest in nuclear issues and arms control got a tremendous boost.

"I got touched by Jack Kennedy's style and substance," he said, "and also stimulated by the *Daedalus* arms control [work] in 1960.

Doty was invited to join President Kennedy's science advisory committee and helped formulate nuclear arms control proposals. He formed a National Academy of Sciences committee to oversee the exchange of Soviet and American scientists for research purposes and later convinced the Academy to establish the Committee on

International Security and Arms Control (CISAC). He even arranged a visit to Strategic Air Command for the Russian visitors. He was also deeply involved in the Dartmouth Conferences, which brought together leading citizens of the two countries to discuss matters of potential conflict and economic cooperation. This group's Arms Control Task Force, chaired by Doty, held separate meetings involving congressional, political, and military leaders as well as nongovernmental specialists. These meetings helped reduce tensions during the Cold War.

In 1960 and 1961, Doty organized two groundbreaking Pugwash conferences in the Soviet Union and the United States. In 1964, he formed a bilateral Soviet-American group that he co-chaired with the vice president of the Soviet Academy of Sciences. This group contributed critically to the Anti-Ballistic Missile Treaty of 1972. Also, beginning in 1972, Doty initiated a summer workshop on arms control at Colorado's Aspen Institute.

The Soviet-American disarmament studies that took place between 1964 and 1975 were "quite a success," Doty said. "This was a window of opportunity in that leading scientists and physicists in Russia were held in high esteem at the time, and that provided a useful 'back channel.'"



With **Jim Watson** in front of Harvard's Biochemistry Department, 1980

"Paul was my mentor. There was never a finer person on the Harvard faculty."

—James Watson, June 2010

Birth of the Belfer Center, 1974

Doty's interest in the intersection of science and international affairs continued to grow, and in 1973 he convinced **McGeorge Bundy**, then president of the Ford Foundation, to support a Harvard center for science and international affairs and several other security centers around the country.

In 1974, Doty launched what is now the Belfer Center for Science and International Affairs, continuing half-time with his biochemistry. A year later, Doty founded and became editor of the Center's *International Security* journal. Now, under Steven Miller's editorship, it continues to be cited as the most referenced journal in the field. In 1979, the Center for Science and International Affairs (CSIA) became the first research center and an integral part of Harvard's new John F. Kennedy School of Government. That same year, under Doty's leadership, the endowment for the Center rose to \$6 million.

At the CSIA (renamed Belfer Center for Science and International Affairs in 1997), Doty expanded his involvement in U.S.-Russia relations and non-proliferation research and activities. His many contributions to the Center include a focus on policy-related research and launch of the Center's robust research fellowship program. These remain crucial and successful elements of the Belfer Center's mission and impact today.

At a recent 90th birthday event for Doty, colleagues from his early days at Harvard praised him for his many contributions to science and to international security, including his unique ability to select future stars in their respective fields and to provide them with outstanding mentoring. These include a large number of the nearly 500 Belfer Center alumni who have gone on to leadership positions in government and academia.



"Paul Doty's dedication and strength of character have had tremendous impact on the life sciences and international security and on what is now the Belfer Center," said Belfer Center Director **Graham Allison**. "Paul has taken more interest, over the course of his career, in nurturing of the people whom he recruits, and in their growth, and in their success, than any faculty member I've seen at Harvard," Allison said.

In May 2010, President **Barack Obama** sent Paul Doty a birthday greeting that said: "Your multiple, parallel careers as a research scientist, teacher, mentor, builder of academic departments and centers, and pioneer in the engagement of scientists in international diplomacy and arms control have been . . . remarkable. . . . The legion of those who have learned from you and become leaders themselves includes my Advisor on Science and Technology **John Holdren**. John is effusive in his praise of your intellect, insights, accomplishments, and, above all, your work in bridging the Cold War divide to bring American and Soviet scientists together in pursuit of measures to reduce the danger of nuclear conflict. We are all in your debt."

For more information on **Paul Doty**, and links to relevant transcripts and articles, see <http://belfercenter.org/PaulDoty/>.

—Sharon Wilke



Paul Doty (left) at a Belfer Center founders event in December 2006 with (left to right) **Dorothy Zinberg**, **Michael Nacht**, and **Albert Carnesale**. Zinberg has been a lecturer of public policy at the Center since 1978; Nacht was founding co-editor with Doty of the *International Security* journal; and Carnesale was formerly associate director of the Center.

"Never stop working, even when ostensibly at play. I think this is an underlying [lesson from Paul]."

—**Dorothy Zinberg**

THE WHITE HOUSE
WASHINGTON

May 12, 2010

Dear Paul:

Michelle and I send our warmest wishes to you on your 90th birthday. We hope you enjoy celebrating this special occasion with family and friends.

Your multiple, parallel careers as a research scientist, teacher, mentor, builder of academic departments and centers, and pioneer in the engagement of scientists in international diplomacy and arms control have been as remarkable for your exceptional achievement as for the sheer duration of your creative activity.

The legion of those who have learned from you and become leaders themselves includes my Advisor on Science and Technology, **John Holdren**. John is effusive in his praise of your intellect, insights, accomplishments, and, above all, your work in bridging the Cold War divide to bring American and Soviet scientists together in pursuit of measures to reduce the danger of nuclear conflict.

We are all in your debt, and I wish you all the best for many more joyful years.

Sincerely,

"Paul taught us how to combine the spirit of science and the life of the mind with practical affairs. That's what the Center was about. That's what the Kennedy School was about."

—**Ashton B. Carter**

"What Paul did—through scientists who had contact with high officials in government on both sides—was to begin to impart a kind of seriousness to discussions of the peril of nuclear weapons. . . . And since they were not themselves in power, they could say what they wanted to each other. . . . That was [Paul's] great contribution. It may have saved us."

—**Matthew Meselson**

"Looking back at [the Cold War], it's one of the great wonders of the last century that nuclear weapons did not go off. . . . [I]t is very much due to the community of people, of which Paul was one of the leading members. This is a moment to say thank you."

—**Karl Kaiser**

"If you look at the record of the Center . . . over the course of these several decades we're going on now, [there are] 500 alumni of the Center for Science and International Affairs, now the Belfer Center. It is literally a 'who's who' in the field of international security and arms control."

—**Steven Miller**



President **Barack Obama**'s congratulations letter on Paul Doty's 90th birthday in May 2010.



Focus on Energy: John Deutch, former secretary of defense and director of the Central Intelligence Agency and currently institute professor at the Massachusetts Institute of Technology, delivers the 2010 Edwin L. Godkin Lecture at Harvard Kennedy School's John F. Kennedy Jr. Forum in May. Deutch, a member of the Belfer Center's International Council, spoke on "Making Progress in Energy."



Latvian Leadership: H.E. Valdis Zatlers, president of Latvia since 2007, speaks about his country's economic future in light of recent stabilization due to EU and IMF bailouts and reevaluation of public policy measures to control spending. Latvia was one of the countries most affected by the global financial crisis that struck in 2008, faced with high unemployment and economic contraction. The event was moderated by Nicholas Burns, director of the Belfer Center's Future of Diplomacy Project, which sponsored the event. President Zatlers venerated Burns' role by bestowing him with Latvia's highest state award at a dinner held in honor of the president after the event.



Border Bedlam: Barry McCaffrey, four-star general and former U.S. drug policy cabinet officer, speaks at a Belfer Center Directors' Lunch on "Mexico: Drugs, Crime and the Rule of Law." David Sanger, *New York Times* reporter and senior adjunct fellow at the Belfer Center, is pictured next to McCaffrey. (Watch presentation at <http://belfercenter.org/McCaffrey/>)



Kenyan Constitutionalism: H.E. Elkanah Odembo (left), ambassador for Republic of Kenya to the United States, with Calestous Juma, Harvard Kennedy School professor and director of the Center's Science, Technology, and Globalization project. Ambassador Odembo spoke on "Kenya's New Constitution: The Birth of the Second Republic" at the Belfer Center event hosted by Juma in September.



Equal Opportunities: Nicholas D. Kristof, *New York Times* columnist and co-author of *Half The Sky: Turning Oppression into Opportunity for Women Worldwide*, speaks about integrating women as part of a solution to global problems at a lecture hosted by the Center's Future of Diplomacy Project. Kristof told the story of the young girl pictured, who could not raise the thirteen dollars required to attend school.



Back from the Brink? Former Senator Sam Nunn (center) makes a point during a John F. Kennedy Jr. Forum in May titled "Nuclear Tipping Point: Did Obama's Summit Change the Balance?" Moderated by Belfer Center Director Graham Allison (left), the question was discussed with Nunn and *New York Times* reporter David Sanger, adjunct senior fellow with the Center, following the screening of a documentary called "Nuclear Tipping Point."

SPEAKERS



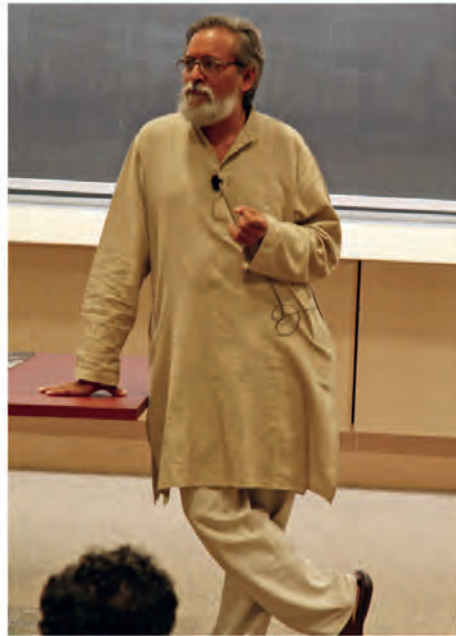
European Economics: Former United Kingdom Prime Minister **Gordon Brown** (center), speaks with **Carolyn Wiener** and Belfer Center Director **Graham Allison** prior to Brown's delivery of the Malcolm Wiener Lecture in International Political Economy at the JFK Jr. Forum in September.



Call for Climate Action: **Connie Hedegaard**, the first European Union commissioner for climate action, speaks on "Europe's View on International Climate Policy" at a seminar sponsored by the Harvard Project on International Climate Agreements. Her talk included Europe's hopes for international climate policy, what might be accomplished at the upcoming UN climate conference in Cancun, and the United States' role in strengthening international agreements.



Perspectives on Disaster: **Juliette Kayyem**, assistant secretary for intergovernmental affairs in the U.S. Department of Homeland Security and a member of the Center's board of directors (on leave), speaks about government actions to limit the impact of the BP oil spill. Kayyem was the first undersecretary for Homeland Security in Massachusetts. Also pictured is **Shai Feldman**, director of the Crown Center at Brandeis University and member of the Center's board of directors (left), and Coast Guard Rear Admiral **Peter Neffenger**, who was the deputy national incident commander for the oil spill.



Outside the Box: **Anil Gupta**, known as the "Innovation Guru" in India, shares his experiences in establishing the National Innovation Foundation (NIF), an organization working to make India an innovative and creative society and a global leader in sustainable technologies. NIF has mobilized more than 140,000 innovations and traditional knowledge practices from all over India. These innovations form linkages between formal scientific systems and informal knowledge systems, creating a knowledge network of various stakeholders. Gupta aims to help organizations become more creative from bottom up.



Partnering with Pakistan: His Excellency **Husain Haqqani** (right), Pakistan's ambassador to the United States, discusses "Pakistan and the U.S.: War and Peace in South Asia" at the John F. Kennedy Jr. Forum in May. He was introduced by **Nicholas Burns**, professor of the practice of diplomacy and international politics at Harvard Kennedy School and member of the Belfer Center's board of directors.



Cyber Dangers: **Richard Clarke** (right), Belfer Center faculty affiliate and former senior White House advisor, discusses cyber threats and strategies for increasing cyber security at a Belfer Center Directors' Seminar. Clarke recently published *Cyber War: The Next Threat to National Security and What to Do About It*. Harvard University Distinguished Service Professor **Joseph S. Nye** participated in the discussion. (Watch Clarke presentation at <http://belfercenter.org/Clarke/>)

NEWSMAKERS

International Security • Environment and Natural Resources



Doug Ahlers, adjunct lecturer in public policy and director of the Belfer Center's Broadmoor Initiative, has been appointed to the National Board of the Smithsonian Institution. The board fosters communication between the Smithsonian and member communities to promote strong public-private relationships.



Belfer Center associate **Kayhan Barzegar** has been named director of international affairs at the Center of Middle East Strategic Studies in Tehran, a think tank affiliated with the Ministry of Foreign Affairs. He is also an assistant professor of international relations at Science and Research Campus, Islamic Azad University.



Former International Security Program fellow **Sham Bathija** was appointed senior adviser minister for economic affairs to Afghanistan's President **Hamid Karzai**. Bathija's selection was based on his leadership and experience with the United Nation and with international donor communities, academic institutions, and political and business leaders.



Matthew Bunn, associate professor of public policy and co-principal investigator of the Center's Project on Managing the Atom, testified before President Obama's Blue-Ribbon Commission on the Nuclear Future, a group that reviews policies for managing the back end of the nuclear fuel cycle. Bunn presented "Managing Spent Fuel and Nuclear Waste Successfully—What Needs to Be Done?"



Steven Miller, director of the Center's International Security Program, also presented to the Blue Ribbon Commission, covering the international context of U.S. nuclear policy. Commission members include Belfer Center alumni **Albert Carnesale**, chancellor emeritus and professor at University of California, Los Angeles, and **Allison Macfarlane**, associate professor at George Mason University.



Research fellow **Maya Eichler** was selected for the 2010 Jill Vickers Prize awarded by the Canadian Political Science Association. Eichler, a joint fellow with the Center's International Security Program and Harvard Kennedy School's Women and Public Policy Program, is completing a book titled *Gender, Conscription, and War in Post-Soviet Russia*.



Melissa Hathaway, senior advisor for the Belfer Center's cyber security initiative and president of Hathaway Global Strategies, presented the keynote address on advances in cyber security at the 2010 Computer and Enterprise Investigations Conference. Hathaway was a top-level government cyber security official in two presidential administrations.

Nuclear

... **ON 9/11, AL QAEDA REWROTE THE TERRORIST PLAYBOOK** by executing mass casualty attacks against strategic U.S. targets. In essence, these attacks ended one era and ushered in a new one. It is an age in which a few terrorists hold the means to alter the course of history with a single blow.

Rolf Mowatt-Larssen, "Proliferation and Terrorism: Big Hype or Biggest Threat?" *Bulletin of the Atomic Scientists* (March/April 2010)

TERRORISTS DO HAVE TIME AND MONEY. We've seen that al Qaeda is, if nothing else, patient. What they typically don't have is access to fissile material and in all likelihood, they could not manufacture it themselves.

William Tobey, "Nuclear Summit Gets Voluntary Deal on Nukes," *Radio Australia* (April 14, 2010)

THE NUCLEAR SECURITY SUMMIT SUCCEEDED in persuading the states to affirm the objective that Obama stated, namely that within four years all nuclear weapons, all nuclear materials, everywhere will be locked up to a gold standard, out of reach of terrorists.

Graham Allison, "The Congenital Optimist," *Bulletin of Concerned Scientists* (Sept./Oct. 2010)

UNLIKE TRADITIONAL TERRORISM, NUCLEAR TERRORISM would pose a potentially catastrophic threat to states across the world. Even a bomb considered to be relatively small would have devastating consequences, with estimates ranging from tens to hundreds of thousands of dead.

Chuck Freilich, "Armageddon and the Threat of Nuclear Terrorism," *InFocus* (Summer 2010)

ONE CANNOT HELP WONDER WHY 20 years since the end of the ideological divide between West and East, the two have not only failed to form a strategic partnership, but also remain in a stand-off with thousands of nuclear warheads prepared for a quick launch.

Simon Saradzhyan, "A Parade of East-West Opportunities," *International Relations and Security Network* (May 10, 2010)

IRAN'S ENRICHMENT EFFORTS ARE SLOW BUT STEADY. However, the clock is ticking. They are making progress, but I think there is still time for a negotiated solution.

Olli Heinonen, quoted in "Iran Atom Progress 'Slow but Steady'—Ex-IAEA Aide," *Reuters* (October 1, 2010)

Middle East Politics

IF NEGOTIATIONS AND SANCTIONS FAIL, as I fear they may, President Obama or his successor will ultimately have to make a brutally tough judgment: go to war to slow down Iran's march toward a nuclear weapons future, or imprison Tehran in a vise of sanctions and military pressure—containment—without resort to open armed force.

Nicholas Burns, "The Strength of Obama's Long Game with Iran," *The Atlantic* (August 23, 2010)

I'M FOR A SHIFT AWAY FROM THE CURRENT RIGID DEADLINE to something more flexible, more reflective of the fluid and tense situation in Iraq, where the last thing the Iraqis really need is for the United States to be focused more on exit than anything else at a moment of high political uncertainty.

Meghan O'Sullivan, "Obama Sticks to a Deadline in Iraq," *New York Times* (April 28, 2010)

THE GOAL SHOULD BE NO LESS THAN A SETTLEMENT OF TERRITORIAL DISPUTES involving Israel, diplomatic relations between Israel and the rest of the region, and the creation of a zone free of chemical, biological, and nuclear weapons and their delivery systems.

Martin B. Malin, "Four Reasons the U.S. Could Get Israel to Talk About a Middle East Free of Weapons of Mass Destruction," *Christian Science Monitor* (June 8, 2010)

THE MIDDLE EAST AND THE WORLD ARE FAR MORE UNSTABLE, violent and dangerous today than they were a decade ago, partly as a result of the Iraq war and partly because of other indigenous factors—including assorted thug-based regimes like the one Saddam Hussein ran for nearly 30 years. American combat troops leaving Iraq should remind us, above all, of the many and terrible consequences of their entering Iraq.

Rami Khouri, "Leaving Iraq and the World More Dangerous," *Agence Global* (August 23, 2010)

Religion

WE SHOULD PERHAPS EXPECT NO LESS DIFFICULTY where theorizing about religiously-inspired violence is concerned, but two important points are in order here. First, religiously-inspired actors are rational, but like nationalists, their rationality is different. It follows that second, we need not avoid theorizing about religious actors because their rationality differs from our common understandings.

Monica Duffy Toft, "Understanding Rationality in Religious Violence," *Huffington Post* (June 14, 2010)

Resources • Science, Technology, and Public Policy • Diplomacy and International Politics

Cyber Security

IF YOU ARE A PRIVATE RESEARCH CORPORATION, if you are a university research facility or you're a government lab, if you have any intellectual property worth having—it's been had. And the most sophisticated of facilities, even with expertise in the area of cyber security, have been successfully hacked. Terabytes of information have been extracted, but also (entire) research institutions and corporate R&D departments.

Richard Clarke, "Cyber," Belfer Center Directors' Seminar (September 2010)

OUR MOST IMPORTANT RESOURCE RIGHT NOW IS TIME. Targeted attacks on industry are increasing and our defensive posture remains weak. While a sense of urgency is rising, I am afraid that we will see more partnerships emerge rather than consolidated efforts and investments across executive branch agencies or industry verticals. We cannot afford to wait and see who will lead and who will follow.

Melissa Hathaway, "Why Successful Partnerships are Critical for Promoting Cybersecurity," *New New Internet* (May 7, 2010)

Economics & Global Affairs

THE NATURE AND DEPTH OF THE FINANCIAL CRISIS is forcing us to reconsider some of the basic tenets of financial theory. To my way of thinking, that is both necessary and promising in pointing toward useful reform.

Paul Volcker, "The Time We Have Is Growing Short," *The New York Review of Books* (June 24, 2010)

I CANNOT AGREE with those who suggest that it somehow threatens the future to provide truly temporary, high-bang-for-the-buck jobs and growth measures. Spurring growth, if we can achieve it, is by far the best way to improve our fiscal position.

Lawrence Summers, "Obama Adviser Calls for New 'Mini-stimulus,'" *Financial Times* (May 25, 2010)

ANY DECISION-MAKER WHO DEPENDS ON FORECASTS—a businessman, an investor, or a government official—needs to know the probability of very low or very high growth rates, as well as the median forecast. But that information remains hidden.

Martin Feldstein, "U.S. Recession Not Out of the Question," *The Age* (Australia) (July 29, 2010)

Environment & Climate Change

IN THE SHORT RUN, THIS MAY BE ONE OF THE WORST environmental disasters we have seen, but what the public doesn't know is the extent of the environmental damage.

Henry Lee, "Questions on an Oil-dark Sea," *Harvard Gazette* (June 21, 2010)

THE GOVERNMENT HAS FAILED TO CONVENE the right kind of scientific experts who can be transparent about what we know and what we don't know. . . . The government gets low marks for such a coherent and comprehensive effort to date.

Ben Heineman, "Questions on an Oil-dark Sea," *Harvard Gazette* (June 21, 2010)

MEANINGFUL ACTION OF SOME KIND IS STILL POSSIBLE, or at least conceivable. But with debates regarding national climate change policy becoming more acrimonious in Washington as midterm elections approach, it is important to ask, what are the real options for climate policy in the United States—not only in 2010, but in 2011 and beyond.

Robert Stavins, "Real Options for U.S. Climate Policy," *An Economic View of the Environment* blog (June 23, 2010)

WHEN SOMEONE SAYS THAT SOCIETY SHOULD WAIT until scientists are absolutely certain before taking any action, it is the same as saying society should never take action. For a problem as potentially catastrophic as climate change, taking no action poses a dangerous risk for our planet.

William Clark, "Climate Change and the Integrity of Science," *Science* (May 7, 2010)

UNTIL THE U.S. GETS SERIOUS NATIONALLY ABOUT CLIMATE CHANGE—and we're not serious until we put a price on greenhouse gas emissions—we're not going to have the international agreement, we're not going to have the mitigation that we need, and we're not going to have the support for adaptation.

John P. Holdren, National Climate Adaptation Summit (May 27, 2010)

(To read opeds in full, see Publications on the Belfer Center website: www.belfercenter.org)

Compiled by Traci Farrell and Brittany Card



Olli Heinonen, Center senior fellow and former deputy director general of the International Atomic Energy Agency, has received Finland's Scientist of the Year Award.



John P. Holdren, on leave from the Belfer Center's board of directors to serve as assistant to President Obama for science and technology, received an honorary degree from the University of Rome in November. His *Lectio Magistralis* was titled "Meeting the Energy-Economy-Environment Challenge." In October, he presented the David J. Rose lecture in Nuclear Technology. He made a strong call for action on climate disruption.



Calestous Juma, director of the Belfer Center's Science, Technology, and Globalization project and the Agricultural Innovation in Africa project, was selected to present the prestigious Philip M. Raup Lecture on Land and Environmental Policy at the University of Minnesota. Juma presented on the importance and impact of agricultural innovation in Africa.



Harvard Distinguished Service Professor **Joseph S. Nye**, a member of the Center's board of directors, received an honorary doctorate from Japan's Keio University in October in recognition of his Center's role in redefining U.S.-Japan relations. He was also a key speaker at TEDGlobal 2010 in Oxford, England in July.



Maya Tudor, former fellow with the Center's International Security Program, won the 2010 American Political Science Association's Almond Award for the best dissertation in comparative politics. Her dissertation was titled "Twin Births, Divergent Democracies: The Social and Institutional Origins of Regime Outcomes in India and Pakistan." She also received honorable mention for APSA's Walter Burnham Award for best dissertation in politics and history.



Stephen M. Walt, professor of international relations and member of the Center's board of directors, has been named to the Board of Overseers at Watson Institute of International Studies at Brown University. Also, Walt spoke at the Distinguished Speakers Series of Cornell University's Einaudi Institute for International Studies, on "Doomed to Fail: Barack Obama's Foreign Policy."



Former International Security Program fellow **Keren Yarhi-Milo** won the 2010 Kenneth Waltz Dissertation Prize for her dissertation titled "Knowing Thy Adversary: Assessments of Intentions in International Relations." She is on the faculty of the Department of Politics at Princeton University.

—Traci Farrell

HOT OFF THE PRESSES

Contending with Terrorism: Roots, Strategies, and Responses

Edited by Michael E. Brown, Owen R. Coté, Sean M. Lynn-Jones, and Steven E. Miller; An International Security Reader

The MIT Press (July 2010)



Since the attacks of September 11, 2001, scholars and policy analysts in national security have turned their attention to terrorism, considering not only how to prevent future attacks but also the roots of the problem. This book offers some of the latest research in terrorism studies. The contributors examine the sources of contemporary terrorism, discussing the impact of globalization, the influence of religious beliefs, and the increasing dissatisfaction felt by the world's powerless.

"This collection will be of great value to both nonspecialists and students ... and to officials looking for creative policy options."

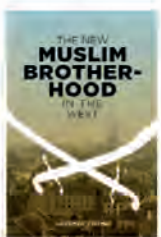
"This collection of compelling analyses of the causes of extremist violence, terrorist strategies, and concepts for countering terrorism will be of great value to both nonspecialists and students seeking incisive introductions to these vexing issues and to officials looking for creative policy options."

—Stephen J. Flanagan, Henry A. Kissinger Chair in International Security, Center for Strategic and International Studies, Co-editor of *Strategic Challenges: America's Global Security Agenda*

The New Muslim Brotherhood in the West

By Lorenzo Vidino; Columbia Studies in Terrorism and Irregular Warfare

Columbia University Press (September 2010)



In Europe and North America, networks tracing their origins back to the Muslim Brotherhood and other Islamist movements have rapidly evolved into multifunctional and richly funded organizations competing to become the major representatives of Western Muslim communities and government interlocutors. Some analysts and policymakers see these organizations as positive forces encouraging integration. Others cast them as modern-day Trojan horses, feigning moderation while radicalizing Western Muslims.

Lorenzo Vidino brokers a third, more informed view. Drawing on more than a decade of research on political Islam in the West, he keenly analyzes a controversial movement that still remains relatively unknown. Conducting in-depth interviews on four continents and sourcing documents in ten languages, Vidino shares the history, methods, attitudes, and goals of the "Western Brothers," as well as their phenomenal growth. He then flips the perspective, examining the response to these groups by Western governments, specifically those of Great Britain, Germany, and the United States. Highly informed and thoughtfully presented, Vidino's research sheds light on a critical juncture in Muslim-Western relations.

Rethinking Violence: States and Non-State Actors in Conflict

Edited by Erica Chenoweth and Adria Lawrence; Belfer Center Studies in International Security

The MIT Press (August 2010)



States, nationalist movements, and ethnic groups in conflict with one another often face a choice between violent and nonviolent strategies. Although major wars between sovereign states have become rare, contemporary world politics has been rife with internal conflict, ethnic cleansing, and violence against civilians. This book asks how, why, and when states and nonstate actors use violence against one another and examines the effectiveness of various forms of political violence.

The essays make two conceptual moves that illustrate the need to reconsider the way violence by states and nonstate actors has typically been studied and understood. The first is to think of violence not as dichotomous but to consider the wide range of nonviolent and violent options available and ask why actors come to embrace particular strategies. The second is to explore the dynamic nature of violent conflicts. This innovative way of understanding violence deemphasizes the role of ethnic cleavages and nationalism in modern conflict.

"...[U]nderstanding political violence as a dynamic process whose nature and timing are shaped by balance of power considerations rather than ancient hatreds or modern ideologies."

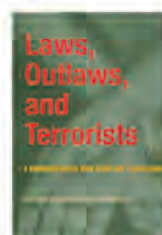
Compiled by Susan Lynch, ISP/STPP

"Taken as a whole, this collection highlights the promise of a bold research agenda that argues for understanding political violence as a dynamic process whose nature and timing are shaped by balance of power considerations rather than ancient hatreds or modern ideologies."

—Jason Lyall, Assistant Professor of Political Science, Yale University

Laws, Outlaws, and Terrorists: Lessons from the War on Terrorism

By Gabriella Blum and Philip B. Heymann; Belfer Center Studies in International Security The MIT Press (September 2010)



Gabriella Blum and Philip Heymann reject the argument that traditional American values embodied in domestic and international law can be ignored in any sustainable effort to keep the United States safe from terrorism. In *Laws, Outlaws, and Terrorists*, they demonstrate that the costs are great and the benefits slight from separating security and the rule of law.

This book won the 2010 Chicago-Kent College of Law/Roy C. Palmer Civil Liberties Prize.

"...[W]hen heated political rhetoric risks drowning out constructive dialogue, they offer the serious thinking needed for just and effective counterterrorism law."

"Blum and Heymann weave together the incisive legal reasoning and strategic thinking essential to protecting both liberty and security. At a time when heated political rhetoric risks drowning out constructive dialogue, they offer the serious thinking needed for just and effective counterterrorism law."

—Matthew C. Waxman, Associate Professor, Columbia Law School, Principal Deputy Director of Policy Planning, U.S. Department of State, 2005–2007

Beyond Slavery: Overcoming Its Religious and Sexual Legacies

Edited by Bernadette J. Brooten with the editorial assistance of Jacqueline L. Hazelton; Black Religion/Womanist Thought/Social Justice Series

Palgrave Macmillan (October 2010)



In a United States that continues to be driven by racial and cultural divisions, from the disproportionately high number of incarcerated African Americans to heartfelt disagreements over the true nature of marriage and the proper role of faith in public policy, Brandeis University's Feminist Sexual Ethics Project (from which this book originated) has identified a crucial nexus underlying these fiercest of arguments: the conjunction of religion, slavery, and sexuality.

BELFER IN BRIEF

Moshik Temkin, assistant professor of public policy and faculty affiliate with the Belfer Center, organized the Harvard Seminar on History and Policy with **Alex Keyssar**, Harvard Kennedy School professor of history and social policy. The seminar examines the relationship between our interpretation of the past and our approach to policy issues. Seminar meetings are enhanced by presentations by invited scholars whose cutting-edge historical works-in-progress are informed by, or seek to influence, ongoing policy debates.

Hilary Rantisi, director of the Middle East Initiative, spoke at a conference in Syria titled "Prosperity through Partnership: Women Leaders in Modern Syria, the Arab World and the International Community" in early summer 2010. She addressed capacity building in the Arab World and the work of the Middle East Initiative and Harvard Kennedy School.

Dorothy Zinberg, Belfer Center associate and founding member of the Center, took part in the Oxford Internet Institute Policy Forum in late May, participating in a round table discussion on "Policy, Information, and Technology" with the Netherlands' Scientific Council for Government Policy. The round table addressed the ways information technologies increase government and citizen interaction.

The Belfer Center and Harvard Kennedy School's Armed Forces Committee sponsored a trip to West Point in October for 40 HKS students with various backgrounds and international affiliations. The purpose of the event was to bridge the gap between the civilian and military community at HKS, while giving the students key insights and access to the military academy. During the trek, students learned how the U.S. trains officers to lead soldiers in combat and took part in cadet life through barracks visits and meals.



Energy in Motion: Laura Diaz-Anadon, director of the Belfer Center's Energy Technology Innovation Policy (ETIP) research group, with Joon-Hyun Lee (left), president of Korea Energy Technology Evaluation and Planning (KETEP), the Korean equivalent of the U.S. Department of Energy, and Jeon-Shik Shin, director of Korea's Research Center for Network and Energy Industries. Diaz-Anadon was in Seoul to take part in KETEP's Energy Technology Leaders Forum 2010.

—Brittany Card

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International Security ranked first for Impact Factor among international relations journals in 2009. The closely watched rankings, calculated annually in the Thomson Reuters Journal Citation Reports®, measure average citations per article, demonstrating the journal's relevance in its field. *International Security's* Impact Factor of 3.243 was the highest it has been since 2001.



"No First Use: The Next Step for U.S. Nuclear Policy"

Michael S. Gerson

Historically the United States has always retained the option of using nuclear weapons first in conflict. In 2009, however, President Barack Obama promised a world free of nuclear weapons, so expectations ran high for a change in U.S. nuclear policy. The 2010 Nuclear Posture Review, however, did not adopt the policy of no first use, and policymakers missed an important opportunity to reduce the role of nuclear weapons in U.S. strategy.

"China's Search for Assured Retaliation: The Evolution of Chinese Nuclear Strategy and Force Structure"

M. Taylor Fravel and Evan S. Medeiros

China exploded its first nuclear weapon in 1964. Yet for several decades, it did not increase the size of its arsenal, leaving itself vulnerable to a potential nuclear first strike by the United States or the Soviet Union. One explanation for this decision is that Chinese leaders viewed nuclear weapons primarily as a tool of deterrence. Another

is that internal organizational and political factors constrained the development of a robust nuclear strategy. Today, although China has the capability to increase the size of its nuclear arsenal, its leadership has not changed China's nuclear policy, which remains the pursuit of a credible second-strike capability.

"Triggering Nationalist Violence: Competition and Conflict in Uprisings against Colonial Rule"

Adria Lawrence

In some former colonies, nationalist movements erupted into intractable wars, terrorist campaigns, and rural insurgencies. In other places, however, nationalist organizations achieved their goals using peaceful strategies such as bargaining, diplomacy, and popular protest. Existing studies have examined various dimensions of nationalist violence, yet none explain where and why violence erupts in the first place. The theory of competitive violence, however, posits that in locations where colonial powers suppressed nationalist opposition and encouraged competition among nationalist leaders, violence was more likely to occur. This theory best explains the case of colonial Morocco.

"Explaining Japanese Antimilitarism: Normative and Realist Constraints on Japan's Security Policy"

Yasuhiro Izumikawa

Since the mid-1990s, Japan has increasingly sent more military forces overseas, and it has pursued a more active role in the U.S.-Japan alliance. Japan's commitment to antimilitarism, which comprises both normative and realist factors such as pacifism, antitraditionalism, and fear of entrapment, helps to explain both Japan's past reluctance to deploy its military overseas as well as its increasing activism since the 1990s.

Compiled by *International Security* staff.



HARVARD Kennedy School
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Photographs: All photos courtesy of the Belfer Center unless otherwise noted.



The Belfer Center has a dual mission: (1) to provide leadership in advancing policy-relevant knowledge about the most important challenges of international security and other critical issues where science, technology, environmental policy, and international affairs intersect; and (2) to prepare future generations of leaders for these arenas.

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A Katrina 5th Anniversary Success Story: Broadmoor

Five years after the August 2005 devastation of Hurricane Katrina in New Orleans, one stand-out recovery success story is the neighborhood of Broadmoor and its unique collaboration with Harvard Kennedy School through the Belfer Center's "Broadmoor Project."

Broadmoor, the New Orleans neighborhood of 7,200 people that was once under seven feet of water and experienced severe damage to more than ninety percent of its properties, has now brought back 84.5 percent of its homes and businesses. With the opening of a new \$30 million LEED-certified charter school and construction underway on a fine arts and wellness center, and with ground being broken for a library/community center in a new "green" education corridor, Broadmoor has become a model of disaster recovery efforts for other neighborhoods, cities, and even countries.

In March 2006, only months after Katrina hit the Gulf Coast, the first Harvard students arrived in Broadmoor. Using skills they developed at Harvard Kennedy School (HKS) and other Harvard graduate schools, they went to work, assisting the long-standing Broadmoor Improvement Association (BIA) in developing, documenting, and implementing a recovery plan that could also be used as a model for other neighborhoods working to meet a deadline set by the city for that spring.

The HKS-Broadmoor alliance was the brainchild of **Doug Ahlers**, a Belfer Center

senior fellow who mobilized the Kennedy School and its students and established the Broadmoor Project within the Belfer Center. Directed by Ahlers, the project is overseen by **Henry Lee**, director of the Center's Environment and Natural Resources Program (ENRP), who serves as faculty chair, and coordinated by ENRP's **Amanda Swanson**. HKS Assistant Academic Dean **Carolyn Wood** has worked closely with Ahlers and students to ensure the success of the Broadmoor project. For five years, with support from the Kennedy School community, Ahlers and BIA director **LaToya Cantrell** and other

Broadmoor leaders have persisted, against daunting odds, to coordinate the redevelopment and revival of the neighborhood.

The Broadmoor-Kennedy School alliance has been successful, Ahlers says, because of the time, energy, creativity, and individual commitments of many individuals—students, staff, faculty, and administration—at the Kennedy School. "The project would never have worked without the support of Dean **Ellwood** and his office and without the commitment of **Graham Allison** and the Belfer Center, which took the lead on this."

—Sharon Wilke

