Encina COLUMNS

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Liberation Technology

"THE SPREAD OF INFORMATION NETWORKS is forming a new nervous system for our planet," Secretary of State Hillary Clinton said in a speech on Internet freedom in Washington on January 21, 2010. "When something happens in Haiti or Hunan, the rest of us learn about it in real time—from real people. ... And even in authoritarian countries, information networks are helping people discover new facts and making governments more accountable." Following the secretary's remarks, CDDRL Director Larry Diamond spoke on a panel that examined the promise of information technologies—mobile phones, text messaging, the Internet, blogging, and GPS—to improve governance, defend human rights, empower the poor, and promote economic development, prospects he and FSI colleague Joshua Cohen and computer science professor Terry Winograd are exploring in their new Program on Liberation Technology. CONTINUED ON PAGE 8

PROGRAM ON GOOD GOVERNANCE AND POLITICAL REFORM IN THE ARAB WORLD LAUNCHED

FSI'S CENTER ON DEMOCRACY, DEVELOPMENT, AND THE RULE OF LAW has established a new Program on Good Governance and Political Reform in the Arab World, the result of a generous gift from the Foundation for Reform and Development in the Arab Middle East (FRDME). The program will examine differing social and political dynamics within Arab societies and the evolution of political systems, with an eye on the prospects, conditions, and pathways for political reform. Its first major event will be a conference on the problems and prospects of political reform in the Arab world, on May 10 and 11.

"This program puts Stanford on the map in contemporary Arab studies and will make CDDRL one of the most important academic sites for studying these issues."

Thanking the foundation for its visionary contribution, CDDRL Director Larry Diamond said, "This program puts Stanford on the map in contemporary Arab studies and will make CDDRL one of the most important academic sites for studying these issues. In the modern history of the Arab world, there has never been a more compelling moment to examine conditions of governance and factors that might facilitate democratic change."

Faculty and scholars involved in the program include Diamond; CDDRL Associate Director Kathryn Stoner-Weiss; Professor Olivier Roy, a leading Western scholar of political Islam and director of FRDME; Hicham Ben Abdallah, a visiting scholar at CDDRL from Morocco; and Sean Yom, a current postdoctoral fellow at CDDRL. The program has hired Dr. Lina Khatib as a full-time research scholar and manager and will conduct research, conferences, and seminars and sponsor visiting scholars at CDDRL. ■

Click to Travel! Stanford Global Gateway

FACULTY RESEARCH ON GLOBAL AND REGIONAL TOPICS continues to be the lead draw to the Stanford Global Gateway website (http://global.stanford.edu) since its arrival last May. The breadth of Stanford's international projects and courses underscores the interest Stanford faculty and students have in the world beyond our borders. Click on the gateway's map to see what Stanford scholars are doing in regions that interest you. Searches can target a particular country, scholar, subject, or any combination, allowing scholars in and beyond the Stanford community to identify peer researchers working on similar subjects. Updates are made continuously, so check back often to see what's new. Along with an ever-growing number of research projects, an events listing provides a comprehensive list of Stanford-sponsored international activities on campus and overseas. The website is rich in other resources, such as links to Stanford funding sources for work or study abroad, faculty blogs on international topics, and international learning opportunities for professionals and executives. Don't find what you are looking for? Click on the "Send Feedback" button to let us know. ■

An Overview of Health Reform

BY ALAN GARBER

AS A PRESIDENTIAL CANDIDATE, Barack Obama made health reform a centerpiece of his campaign. And by many indications, there was broad public support for reforming our costly medical care system.

Early in the Obama presidency, polling data indicated that health reform was a top priority for many Americans, despite the economic downturn and public anxiety over jobs and economic security. Yet health reform soon proved to be contentious and, for lawmakers as well as much of the public, a highly partisan issue. As 2009 wore on, Republicans deeply opposed and Democrats continued to support health reform efforts. Independents, meanwhile, became increasingly skeptical of reform efforts being discussed in Washington. However even at the height of discontent over proposed health care legislation—during the infamous "tea parties" in August—the majority of Americans (53 percent) still stated that health reform must be addressed now.

"Despite the high prices we pay, the American health care system does not have better outcomes. We are not living longer or better than citizens in developed countries that spend less on health care."

Whatever one's views of the specific reform proposals discussed in Washington, the motivations for health care reform remain: a high rate of uninsurance, the costs borne by employers and Americans with private health insurance, and federal and state financial burdens. The performance of the American health system is another cause for concern.

Several economists have called attention to trends in health that we might well celebrate. Over the past 40 years our nation has seen significant gains in longevity. In 1970 the average 65-year-old American woman could expect to live to 82, and men to 78. In 2003 life expectancy at age 65 increased to 84 for women and 81 for men. There were similar improvements in life expectancy at birth and at other ages. Although health expenditures rose dramatically during the same period, the improvement in health was by many standards a great value. University of Chicago economists estimated that the increase in longevity since the 1970s was worth $95 trillion, or three times health spending over the same period.

Yes, Americans are living longer. But so are citizens in peer countries. In fact people in Canada, Japan, Germany, the United Kingdom, and many other countries have seen even larger gains in life years over the past 15 years. The difference in their longevity gains, however, is that although health expenditures in peer countries have risen over the years, the increases have not been as dramatic as ours.

Despite the high prices we pay, the American health care system does not have better outcomes. We are not living longer or better than citizens in developed countries that spend less on health care.

If there are doubts about the value and performance of U.S. health care, there are also deep concerns about the budgetary pressures that result from both private and government-financed health care. Leading government economists have long noted

(L) STANFORD HEALTH POLICY DIRECTOR ALAN GARBER LEADS A GROUP OF ECONOMISTS, INCLUDING AFFILIATE JOE NEWHOUSE (LEFT) IN DISCUSSION OF REFORMING HEALTH CARE. GARBER HAS PUBLISHED EXTENSIVELY ON THE SUBJECT, INCLUDING A SERIES OF ARTICLES IN 2009 ON THE ROLE COMPARATIVE EFFECTIVENESS RESEARCH PLAYS IN REFORM.

(R) CORE FACULTY MEMBER JAY BHATTACHARYA, A HEALTH ECONOMIST, DISCUSSES PAYMENT REFORM OPTIONS. BHATTACHARYA'S RECENT ARTICLES LOOK AT HOW OBESITY HAS IMPACTED HEALTH CARE COSTS AS WELL AS THE COST OF INSURING THE NEAR ELDERLY UNDER MEDICARE.

"The federal government will most likely apply an expansive definition of comparative effectiveness, looking not only at specific treatments, such as different drugs, but at much broader questions such as the effectiveness of alternative forms of organizing and delivering medical services."

that Medicare spending trends pose a threat to the long-term health of the U.S. economy. The Office of the Actuary of the Centers for Medicare and Medicaid Services, which administer Medicare, reports annually on projected Medicare expenditures. Medicare expenditures now account for about 3 percent of GDP.

If current trends continue, the Office of the Actuary projects that Medicare expenditures will approach about 9 percent of GDP by 2050. Most worrisome is that the unfunded Medicare liability—the portion of Medicare expenditures that is not covered by a dedicated funding source—will reach nearly 6 percent of GDP in 2050. To fund this shortfall by raising income taxes would require more than doubling the personal income tax burden per working-age adult, in real terms.

Observations like these have led the heads of the Congressional Budget Office and of the Federal Reserve Board to conclude that future liabilities for Medicare represent the single biggest threat to our economic future.

As the current debates in Washington reveal, it is also among the most difficult topics for lawmakers to address. That is why politicians prefer to focus on programs that purport to generate cost savings. As candidates, John McCain, Barack Obama and Hillary Clinton claimed that as president they would promote lower drug costs, preventive care and disease management, and expanded use of health information technology. They argued that such initiatives would save Americans money and improve the performance of the health system. But it is difficult to prove how large the savings will be. Thus the Congressional Budget Office, the official arbiter of the costs of legislation, has typically given credit for only modest savings from programs based on these ideas.

Although many of the ideas that candidate Obama put forward appear in the bills that are being debated today, it is Congress that ultimately drafts and votes on legislation. The health reform bills passed by the House and Senate in late 2009 share a number of common features and would result in a large expansion of the number of Americans with health insurance. But the bills are under attack both for failing to provide universal coverage immediately and for failing to do enough to control health expenditures.

Nevertheless, there are several important features of both sets of bills that provide both short-term benefits and a foundation for further increasing coverage and improving the efficiency of health care. They include the following:

- THE CREATION OF HEALTH INSURANCE EXCHANGES. Exchanges are essentially markets for health insurance, in which health plans would compete on cost and quality, potentially within networks. The varying plans would be subject to regulatory controls like guaranteed issue and renewability, which would make it easier for people with health conditions to purchase health insurance. There would also be measures to control adverse selection. The big concern is that without such measures, these exchanges would attract sick people and increase risk and therefore the costs of insurance.
- SUPPORT FOR COMPARATIVE EFFECTIVENESS RESEARCH. As the name suggests, this initiative would lead to better information about which approaches to medical care work best and in which patients. The federal government will most likely apply an expansive definition of comparative effectiveness, looking not only at specific treatments, such as different drugs, but at much broader questions such as the effectiveness of alternative forms of organizing and delivering medical services. One of the most important and controversial issues in health reform is how such information will be used; some legislators have sought to prevent federal health programs from using the results of comparative effectiveness research to inform coverage decisions and to influence care delivery, while others argue that this is the most important reason to support such research.
- INDIVIDUAL MANDATE AND PURCHASE SUBSIDY. Much like the approach used in Massachusetts, federal health reform would require most people to obtain health insurance either through their employment or by enrollment in public or private health insurance plans. There would be subsidies to assist in the purchase of insurance, based on income, and penalties for those who do not purchase insurance. The mandate to purchase insurance, of course, costs the government little or nothing and penalties for failure to purchase insurance represent government revenues. Thus a mandate is a low-cost way for the federal government to increase the number of people with insurance. However, the subsidies required to offset the cost of insurance to an individual represent the largest single cost of health reform legislation.
- TAXING CADILLAC INSURANCE PLANS. This would end employers' exemption from federal income and payroll taxes on the excess costs of high-cost health insurance plans. The concept is this would increase federal revenue and promote more efficient plans. Large revenues would result if many plans were taxed. A higher limit on spending would be more acceptable to much of the public but would generate less direct revenue. For example, taxing the top 50th percentile of insurance plans would generate $232 billion in revenue by 2019, compared with $9 billion from only taxing the top 75th percentile. But taxing half the population's insurance plans would be politically loaded and not a likely scenario.
- EMPLOYER MANDATE. Such a step would require employers to insure their workers or have payrolls taxed more heavily. The House and Senate bills vary on the size of employers that face this mandate as well as the amount of insurance required per employee—the House has more stringent requirements.

As I write this, the Democrats have lost one of their 60 seats in the Senate and the future of health reform is clouded. There are also remaining areas of disagreement, such as the role (if any) for a publicly administered health insurance option and limitations on the tax exclusion for health insurance premiums.

Even if reform legislation does not make it through Congress, there is a good chance that several features of health reform will be implemented by health plans and health care providers. There will likely be at least a limited expansion of Medicaid. States are also likely to push forward with their own health reform initiatives if the federal government fails in its efforts. We will continue to see growth in health care information technology, but it will become increasingly linked to outcome measurement and quality improvement. These technological advances will help in reporting outcomes of care. Payment is likely to move away from current fee-for-service approaches, which reward providers for providing more services, to approaches that are tied to outcomes, rewarding providers for better care.

Health reform has proved to be more difficult than even many seasoned political observers expected, but the motivations for reform remain. Despite the opposition to many features of reform, the status quo has few defenders. Change will come, and the shape it will take will emerge over years, not weeks or even months. ■

Preventing Armageddon:
2010 Drell Lecture Examines the Road to Nuclear Arms Elimination

BY AIMEE MILES

What would a world without nuclear weapons look like, and how might global leaders achieve the delicate political balance needed for its development? Is a nuclear nonproliferation agenda compatible with the contemporary demands of national and international security, or will the escalating threat of emerging nuclear rivals perpetually quash any hope of progress toward comprehensive nuclear reduction?

FORMER SECRETARY OF STATE GEORGE SHULTZ (CENTER) AND PHYSICIST SIDNEY DRELL (R) ADDRESS A FULL HOUSE WITH FORMER *NEW YORK TIMES* JOURNALIST PHIL TAUBMAN. (LINDA CICERO/STANFORD NEWS SERVICE)

THESE DILEMMAS were among the weighty subjects of contemplation discussed January 25 during the 2010 Drell Lecture hosted by the Center for International Security and Cooperation (CISAC).

The event, titled "Working Toward a World Without Nuclear Weapons," brought together two Hoover fellows and outspoken advocates of nuclear nonproliferation—former Secretary of State George Shultz and theoretical physicist Sidney Drell—in a conversation with former *New York Times* journalist Philip Taubman, a CISAC consulting professor, over the future of global nuclear disarmament.

The lectureship was established in Drell's honor, a co-founder of CISAC, upon his retirement in 1994 as deputy director of the Stanford Linear Accelerator Center.

Shultz and Drell, who became colleagues (and fast friends) after Shultz sought the technical counsel of the latter while serving as secretary of state under President Reagan, were both advocates of arms control and nuclear nonproliferation during the Cold War.

They began their personal conversation years ago with recollections of the pivotal event that ended World War II and would define the future trajectory of both their careers—the leveling of Hiroshima by the world's first atomic bomb.

HIROSHIMA'S LASTING IMPRESSION

When news of Hiroshima broke, neither man understood what an atomic bomb was, let alone what it could do—but the photographs that emerged from the destruction that enveloped that city (and later, Nagasaki) left a lasting impression of the immeasurable costs involved, Shultz recalled.

The relief of entering a post-World War II era was quickly stifled as mounting Cold War tensions between the United States and the Soviet Union began to settle in its place. Drell set to work on the Missile Defense Alarm System (MiDAS) and Corona projects, which aimed, respectively, to provide notice of Soviet ballistic missile launches and conduct satellite surveillance.

After the war, Drell taught at MIT and Stanford and was among a handful of young scientists and academics invited to work in Washington during their summers "on problems of national importance." He was assigned to help figure out a way for orbiting satellites to obtain useful surveillance information—such as how to detect the launch of ballistic missiles halfway around the world by observing rising plumes of heat.

He was later called to Washington to work on improving first-generation photo satellites. As the technology improved, Drell began to see its potential for supporting verification processes in nuclear treaties and promoting arms control. Recognition of his work eventually led to his collaboration with Shultz, who, as secretary of state under Reagan, was charged with the task of averting a nuclear crisis with the Soviet Union.

"QUANTUM DIPLOMACY"

In the course of working together, said Shultz, he and Drell coined the term "quantum diplomacy"—a reaction to the impetuous nature of the beast. "Sid said, 'As soon as you observe something in physics it changes, so it's very hard to really observe something,'" Shultz recalled. "I said, 'Boy, in diplomacy, you put a TV camera around something, it's not the same.'"

Shultz was asked to discuss a prominent example of such fragile diplomacy—the 1986 Reykjavik negotiations between Reagan and Secretary-General Mikhail Gorbachev.

"The Reykjavik meeting came as a suggestion from the Soviet side," Shultz said. "Right off the bat in the morning, Gorbachev read aloud a whole series of proposals that essentially were granting all the proposals we'd made … practically going to zero on INF weapons, cutting strategic weapons in half—those were all our proposals that they had before resisted."

The summit eventually fell short of the mutually desired goal of total elimination of nuclear explosive devices within a 10-year period but established a precedent for concessions the Soviets and Americans were willing to make and eventually resulted in the Intermediate-Range Nuclear Forces (INF) Treaty.

Shultz and Reagan continued to prioritize nuclear weapons reduction as an agenda point.

"What's the biggest threat to the United States?" they asked one another. "We both thought not since the British burned the White House in 1814 has anything threatened our security like a ballistic missile with a nuclear warhead on the end of it," said Shultz. "And if we could get rid of them, we'd be a much safer country. And for that matter, if we could get rid of them entirely, it would be a safer world."

FACED POLITICAL OPPOSITION

The idea was met with intense political opposition. Shultz and Reagan thought Gorbachev could be reasoned with, but many remained unconvinced.

Shultz remembered saying to his delegation, "'This is a different Soviet leader than anybody we have ever encountered before. He's quicker, he's smarter … and he's formidable, but you can have a conversation with him, he'll listen to you.' So I thought, and President Reagan thought, that change was possible in the Soviet Union."

The CIA, the Defense Department, former President Richard Nixon, and former Secretary of State Henry Kissinger were among the opposition. "After all they were the authors of détente," Shultz explained. "Détente was 'we're here, they're there, that's life—the name of the game is peaceful coexistence.' We rejected détente."

The Reagan era's ambitious plans for disarmament were left at an impasse and global nuclear threats outlived the end of the Cold War. Drell noted that the world left in its wake poses a very different set of challenges. Still, he has not wavered in his support for a program to totally eliminate nuclear weapons. A viable process for nuclear disarmament, he explained, would ideally incorporate provisions for transparency and cooperative verification, as was achieved in the first Strategic Arms Reduction Treaty (START) between the United States and Russia, ratified in 1991.

"The technical realities, the political realities, and the urgency have made this a much more compelling case," said Drell.

WELL-TIMED DISCUSSION

The timing of the discussion could not have been more pertinent, as the U.S. Senate awaits a renewed arms treaty with Russia. If ratified, the treaty would introduce a new round of reductions—a move that has attracted criticism from Senate Republicans supporting a modernization plan for existing U.S. nuclear warheads.

Shultz said he believed that the Senate would ratify a new START treaty if robust provisions for verification of disarmament procedures were integrated into its program and emphasized the need to adopt a "hard-boiled" diplomatic policy with Iran.

"In a sense the battle of rhetoric has been won," said Shultz. "Now the battle of action is in front of you. What are you gonna do about Iran? What are you gonna do about North Korea?"

In light of these uncertainties, new questions were raised: How would a non-nuclear deterrence regime function? How could it?

Said Drell, "Trying to establish stability when you have knowledge and can reconstitute (nuclear weapons) is what you're going to have to work with." ■

AIMEE MILES IS AN INTERN AT THE STANFORD NEWS SERVICE. A VERSION OF THIS ARTICLE WAS ORIGINALLY PUBLISHED IN *STANFORD REPORT* ONLINE.

PHOTOS: (L) DR. MASAHIKO AOKI MODERATES A PANEL DISCUSSION ON "ENERGY, ENVIRONMENT, AND ECONOMIC GROWTH IN ASIA" WITH AMBASSADOR MICHAEL ARMACOST, DR. LAN XUE OF TSINGHUA UNIVERSITY, DR. PRODIPTO GHOSH OF INDIA'S ENERGY AND RESOURCES INSTITUTE, AND AMBASSADOR TON NU THI NINH OF THE TRI-VIET UNIVERSITY PROJECT; (R) DR. MASAHIKO AOKI OF FSI AND SHORENSTEIN APARC DIRECTOR GI-WOOK SHIN (CENTER), SHORENSTEIN DISTINGUISHED FELLOW MICHAEL ARMACOST, AND SHORENSTEIN APARC ASSOCIATE DIRECTOR FOR RESEARCH DANIEL SNEIDER (2ND ROW, 3RD AND 4TH FROM LEFT) JOIN COLLEAGUES FROM EIGHT COUNTRIES ACROSS THE ASIA-PACIFIC FOR THE FIRST STANFORD KYOTO TRANS-ASIAN DIALOGUE IN SEPTEMBER 2009.

First Stanford Kyoto Trans-Asian Dialogue: Energy, Environment, and Economic Growth in Asia

THE WALTER H. SHORENSTEIN ASIA-PACIFIC RESEARCH CENTER (Shorenstein APARC) convened the first Stanford Kyoto Trans-Asian Dialogue in Kyoto, Japan, on September 10 and 11, 2009. The gathering brought together prominent thinkers and policymakers from academia, government, media, and business. They came from across Asia, including India, Indonesia, Singapore, Vietnam, China, South Korea, and Japan, together with Americans, joining in two days of informal but focused discussion of a key issue of common concern. Stanford faculty brought the fruits of their own research to spark the dialogue and help create a unique pan-Pacific interaction.

Through this annual event, Shorenstein APARC seeks to build a new set of relationships across the Pacific, a network that can benefit all parties through exchange of information, analysis, and original thinking. The inaugural dialogue—generously underwritten by the City of Kyoto, Yumi and Yasunori Kaneko, and FSI—addressed the critical theme of "Energy, Environment, and Economic Growth in Asia." The presentations that set off the dialogue are summarized here, along with an overview of some of the off-the-record discussion among the participants.

THE GEOPOLITICS OF ENERGY IN ASIA

Shorenstein Distinguished Fellow Michael H. Armacost kicked off the meeting by exploring the role that America—as both a major consumer and a significant producer of energy—plays in the regional energy equation. He paid special attention to U.S. activities in ensuring the freedom of the seas and the smooth importation of oil from the Middle East.

Another presentation, delivered by Ambassador Hyun Cho of South Korea, highlighted the maintenance of energy security in Northeast Asia, with China joining South Korea and Japan as a highly import-dependent economy. He discussed the value of regional cooperation in Northeast Asia to improve energy security and how energy cooperation could invigorate the process of regional integration. Ambassador Cho also discussed the increasing focus on "green growth" in South Korea and the need for Asian countries to cooperate regionally to deal with climate change.

ENERGY EFFICIENCY

The shocking truth is that the vast majority of energy use in the United States—despite the huge attention paid to alternative sources of energy supply—remains carbon-based, that is, coal, oil, and natural gas. Even exceptionally fast growth of the alternative energy sector will take years to make a dent in the U.S. carbon footprint. Increased energy efficiency, however, can have a larger impact, more rapidly.

Dr. James Sweeney, of Stanford's Precourt Center for Energy Efficiency, discussed the need to improve American consumers' efficient use of energy. The key, he noted, is to enhance their awareness of their own energy use; when consumers do not face the cost of energy directly then there are significant market failures. Sweeney went on to argue that the most effective strategy will be to provide more accurate and timely information to consumers about how much electricity they are using. A real-time metering system is currently being tested in California, to allow users to understand the financial impact of different devices.

The case in China, by contrast, is more a matter of government regulation. Dr. Yoichi Kaya, of the Research Institute for Innovative Technology for the Earth, remarked that China's power generation sector is characterized by a large number of small facilities. Increasing efficiency will require state intervention to consolidate the industry and foster the appropriate scale at which firms will engage in investment for efficiency gains.

Shorenstein APARC-affiliated professor of political science Phillip Lipscy presented his current research project on "Japanese Energy Efficiency Policy in Comparative Perspective." His work seeks to identify which components of Japan's relatively energy efficient economy are the result of policy—as opposed to endowments such as geography or industrial structure—and which of those policy-related efficiencies are transferable.

CLEAN TECH

Lauren Bigelow, of New Energy Finance, described the state of clean-tech venture capital financing in the United States, and Dr. Kejun Jiang, of China's Energy Research Institute, explained the elaborate modeling employed to produce recommendations for Chinese policy on technology that increases efficiency and reduces carbon emissions. The two presentations revealed a stark contrast between the U.S. market-based system and the Chinese state-directed economy. On the one hand, the United States can allocate enormous sums to high-risk, high-return new technologies, but funding has been vulnerable to the current economic downturn. On the other, the Chinese system involves the central government in choosing winners, which leads them to be generally steadier but more risk-averse. The introduction of new technology is seen as an important growth industry for China. Without developing its own technology to increase energy efficiency and reduce pollutants, China will not only be dependent on technology created abroad but will also lose an important possible export market.

EMISSIONS POST-KYOTO PROTOCOL

The message from Kyoto to the world was inspiring: Urgent action must be taken to reduce the emission of greenhouse gases. Participants predicted correctly that the message from Copenhagen would be mixed: Consensus on concrete actions to be taken, however desirable, will be difficult to achieve. Dr. John Weyant, of Stanford's Precourt Center, presented findings from the climate change model to show that, even with drastic action, the likelihood of maintaining a two-degree Celsius increase in global mean temperature is extremely low.

Dr. Prodipto Ghosh, of India's Energy and Resources Institute, firmly articulated the Indian official position on climate change: Industrialized countries created the problem and they are therefore entirely responsible for correcting it. India and other developing countries will require "emissions space" in order to improve their standard of living. That said, he noted that Indians' patterns of energy use and consumption show moderation and that Western countries' energy usage will continue to dwarf that of India on a per capita basis. Further, India's economy has grown in sectors that have relatively low energy intensity, and the country's emissions per unit of output are therefore correspondingly low, on a par with Japan. Ghosh reiterated the view that developed nations must take responsibility for cumulative global emissions, since they crossed over the industrial threshold first.

Other views from participants knowledgeable about the state of pre-Copenhagen negotiations revealed bleak prospects for any binding agreements on greenhouse gas emissions. The same participants pointed to the confrontational nature of the negotiations and the lack of clear commitment by the governments involved to take the necessary steps. The United States, for example, has returned to the negotiations but is struggling to formulate concrete positions. Developing countries resist setting firm numerical targets for carbon mitigation and seek financing for technology transfer to achieve that goal. Even major developed countries, such as South Korea, ask for special treatment due to their historical path to development. The Copenhagen talks, some participants predicted, would hover over a number of issues, presenting a formidable challenge to create a new protocol. ■

Bridging Divides:
Tri-Lateral Relations between the United States, Europe, and the Greater Middle East

BY ROLAND HSU

WHEN PRESIDENT OBAMA VISITED CAIRO, EGYPT, in June 2009, he spoke of a new beginning in relations with the Muslim world. The president's historic overture continues to reverberate with its call to open a dialogue between the United States, its European partners, and the Arab-Muslim diaspora. He reminded his global audience to acknowledge shared histories of classical learning, colonization, and new global migration among Muslims, Christians, and Jews. He pledged U.S. efforts to use such understanding to engage Israelis, Palestinians, and their Arab and European neighbors to resolve conflict and promote the growth of civil society.

At the Forum on Contemporary Europe, we have launched our program on tri-lateral relations between the United States, Europe, and the greater Middle East. The forum's new multi-year project on history, memory, democracy, and education in conflicted societies engages forum scholars with the cooperation of international experts, policy leaders, and non-governmental actors to rethink the lines that have been repeatedly drawn to divide societies and to design bold new solutions.

To launch this program, the forum is partnering with the independent Van Leer Jerusalem Institute and European universities and policy centers. We have designed this program to eventually take its place alongside our other full-scale programs, to include international workshops, scholar exchanges, public figure lectures, endowed faculty chairs, teaching, and publishing series.

The Forum on Contemporary Europe is proud to have secured generous seed funding to invite its senior faculty and special expert partners at CDDRL to design three international workshops. The first, on "Memory, History, Reconciliation," will be run at Stanford and the forum in spring 2011. Drawing on the forum's highly successful speaker series on the subject areas, this first major workshop will focus on the Mediterranean and Arab worlds. The workshop will especially emphasize dialogue that goes beyond rehearsing past grievances. Historical facts must be established, especially as a means to reveal the origins and evolution of community memories. But in our workshop, history and memory will be reconsidered to reveal shared interests. In the areas of the Mediterranean and greater Middle East, history and memory of ethnic and national borders have been repeatedly cited to emphasize irreconcilable difference. To move forward, this workshop is designed to spur dialogue on shared historical interests for such essential elements as natural resources, clean water, sustainable energy, and civil society.

PHOTOS TOP TO BOTTOM: U.S. PRESIDENT BARACK OBAMA IS GREETED BY EGYPT'S FOREIGN MINISTER AHMED ABOUL GHEIT AFTER ARRIVING IN CAIRO, JUNE 4, 2009. (CREDIT: REUTERS/MENA/POOL); THE DOME OF THE ROCK, ON THE COMPOUND KNOWN TO MUSLIMS AS AL-HARAM AL-SHARIF AND TO JEWS AS TEMPLE MOUNT, IN JERUSALEM'S OLD CITY IS SEEN IN THE BACKGROUND AS ISRAELI POLICE OFFICERS STAND GUARD DURING CLASHES WITH PALESTINIAN STONE-THROWERS IN THE EAST JERUSALEM NEIGHBORHOOD OF RAS AL-AMUD, OCTOBER 9, 2009. (CREDIT: REUTERS/DARREN WHITESIDE); MIDDLE EAST ENVOY TONY BLAIR ADDRESSES A NEWS CONFERENCE DURING A EUROPEAN UNION FOREIGN MINISTERS COUNCIL IN BRUSSELS, JULY 22, 2008. (CREDIT: REUTERS/FRANCOIS LENOIR)

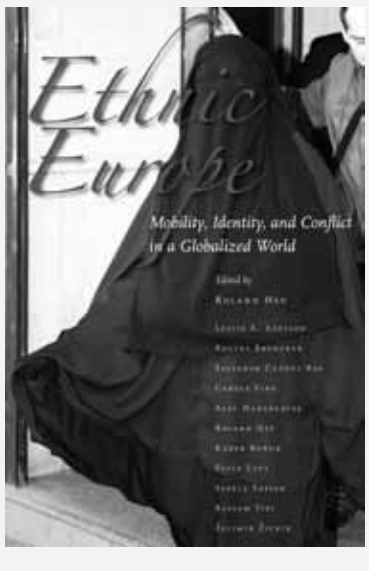
Our program's second international workshop, on "Democracy, Development, and the Role of Education in the Formation of Civil Society," will be hosted by the forum's partner, the Van Leer Jerusalem Institute, in spring 2012. Our aim is to determine how societies debate and attempt to reconcile political positions. Building on the first workshop on history, we will address the impact of historical conflict on contemporary politics, movements for democratic reform, the establishment of the rule of law, majority-minority relations, the role of religion and ethnicity, educational institutions, and the role of non-governmental, civil, and cultural organizations toward the promotion of peaceful coexistence.

The third workshop, on "Debating Democracy in Contemporary Political Thought, Politics, and Culture," will be hosted with the forum's European partner, in spring 2013. This workshop will coordinate analysis and policy recommendation on bridging divides between values of democratic, juridical, and civic institutions. Our invited scholars, policy leaders, and independent actors will be encouraged to differentiate regional traditions of governance, participatory politics, and public culture. We plan the workshop to help local protagonists, along with U.S. and European mediators, re-envision peace, reconciliation, and development.

Our goal for answering these questions is to promote the exchange of knowledge and its policy implications. We are sponsoring research to offer neutral and innovative insight to leaders in government, law, business, energy and the environment, and civil society. Our ambition continues to be to deepen cooperation between research, cultural, political, and non-governmental organizations and independent actors on these heretofore intractable conflicts. ■

Two Additional 2010 Projects:

On the Politics of Terror and Secularization



THE FORUM IS ALSO RUNNING TWO OTHER RELEVANT PROJECTS in spring 2010 at Stanford, one on political traditions of violence and terror and the other on secularizing movements of our modern world. The first will examine Hannah Arendt and the humanities and beyond, and the second will address secularization in history and contemporary politics. On Arendt, we are hosting with forum affiliates the world's leading scholars who reconsider what we can draw from the work of this timeless political theorist. Since the 9/11 terror attacks, scholars have returned to Arendt's work on the atrocity and banality of evil, and the forum is uniquely positioned to design this workshop, in partnership with New York University, to enable humanists and social scientists to inform each other and reveal patterns behind combinations of extremism, anti-democratic politics, and everyday culture.

Our other international workshop in spring 2010 will deliver much needed insight on secularization, its origins in both East and West, and its impact on culture and politics. Our workshop brings to Stanford and the forum's research community the best scholars on this timely subject. In today's realms of culture, society, and geopolitics, religion and religiosity have become central preoccupations. Modern politics and international relations are being shaped by competing claims for the irrelevance, or centrality, of faith. This workshop will develop understandings of secularization that will be productive for cultural, political, and legal applications.

Look for our new books, including *Ethnic Europe*, from Forum on Contemporary Europe publications with Stanford University Press, and, in Europe, with Berlin-based prominent publisher Suhrkamp Verlag. For more information, visit: http://fce.stanford.edu. ■

Global Underdevelopment at the Heart of FSI Research Agenda

IN 2005, STANFORD LAUNCHED THE INTERNATIONAL INITIATIVE university-wide to bring Stanford's formidable resources to bear in seeking solutions to three daunting global challenges: to increase worldwide peace and security; to improve governance locally, nationally, and internationally; and to advance human well-being.

FSI has been at the nexus of the initiative since its launch, drawing together its remarkable intellectual strengths and rigorous academic standards to transcend traditional academic boundaries. FSI faculty, researchers, and visiting scholars affiliate widely with Stanford's seven schools and work together on complex problems that do not conform to narrow academic disciplines. Real progress requires a new level of cooperation among Stanford faculty, researchers, and students and experts outside the university's boundaries.

DONORS MAKE AN IMPACT

Through generous donor support, FSI has facilitated path-breaking interdisciplinary research by

- Offering competitive seed grants to multidisciplinary teams of faculty members from different schools that collaborate on international projects,
- Funding faculty positions to build faculty expertise at FSI and jointly with other schools and institutes,
- Recruiting new faculty from other universities and from government service,
- Providing space for research projects and programs,
- Funding undergraduate and graduate student opportunities for international policy research at Stanford and in the field.

THANK YOU

New gifts have helped to expand the core research in FSI's established centers and programs—the Center on Democracy, Development, and the Rule of Law, the Center for Health Policy, the Center for International Security and Cooperation, the Walter H. Shorenstein Asia-Pacific Research Center, the Program on Food Security and the Environment, and the Program on Energy and Sustainable Development—to launch new endeavors including the following:

- Homeland Security (CISAC)
- Program on Good Governance and Political Reform in the Arab World (CDDRL)
- Program on Global Justice (CDDRL)
- Food Security and the Environment (FSE)
- Stanford China Program (Shorenstein APARC)
- Program on Human Rights (CDDRL)
- Children in Crisis (CHP)
- Liberation Technology (CDDRL)
- Rural Education Action Project (REAP)

VIEWING THE CHALLENGES THROUGH A NEW LENS

The common theme emerging from work initiated since 2005 is the focus on understanding the multivariate dimensions of global poverty and devising policy solutions to help alleviate it.

More than 1 billion people live on less than $1 a day and 2 billion live on less than $2 a day. Those astounding figures, coupled with natural and man-made disasters around the world that amplify the crisis, led FSI to regard persistent global poverty as an area for significant and rigorous policy-relevant research and scholarship.

Because improving governance is often a linchpin in solving the problem, CDDRL has become a focal point of innovative research activity. Likewise, the Program on Food Security and the Environment, Center for Health Policy, Rural Education Action Project, Program on Energy and Sustainable Development, and Program on Global Justice have played key roles in advancing research on global health care delivery, human rights, food security, agricultural policy, rural development, education, affordable energy, and related problems that impact human well-being. CISAC has contributed to increased understanding of the impact of conflict and terrorism, while Shorenstein APARC has been an active participant in questions related to development in Asia.

UNDERGRADUATES RESPOND TO THIS NEW AGENDA

Telling examples of the rapid growth in interest in international development and global poverty alleviation can be found in the high demand for undergraduate courses taught by FSI faculty. CDDRL's undergraduate course "Democracy, Development, and the Rule of Law," developed by Michael McFaul and Kathryn Stoner-Weiss and now taught by Larry Diamond and Stoner-Weiss, has grown from 20 students in 2005 to more than 200 today. Applications to CDDRL's undergraduate honors program have grown astronomically. The undergraduate course "World Food Economy," taught by Roz Naylor and Walter Falcon, has also seen a tremendous increase in enrollment.

THE WAY FORWARD

This spring, FSI will kick-start an ambitious Global Underdevelopment and Governance Action Fund, which serves to provide seed grants to faculty teams working on the leading edge of the global poverty issue. Together with governments, NGOs, U.S.-based foundations, and other partners, the Freeman Spogli Institute is committed to remaining in the vanguard of policy analysis, formulation, and evaluation of efforts to reduce poverty, improve governance, and sustain peace and security for generations to come. ■

PHOTOS FROM TOP:

SCOTT ROZELLE, CO-DIRECTOR OF THE RURAL EDUCATION ACTION PROJECT (REAP), CHATS WITH CHINESE SCHOOL CHILDREN AT AN ELEMENTARY SCHOOL IN CHINA'S SHAANXI PROVINCE. (CREDIT: ELAINE YU);

PAUL WISE IS JOINED BY A MEDICAL STUDENT AS HE EXAMINES A PATIENT IN A PROVISIONAL CLINIC RUN BY LOCAL COMMUNITY VOLUNTEERS IN THE KAQCHIKEL-SPEAKING RURAL HIGHLANDS OF GUATEMALA. (CREDIT: BELINDA BYRNE);

A WOMAN FROM THE WOMEN'S GROUP IN KALALÉ, BENIN, PLANTS LEAFY GREENS IN A SOLAR-POWERED DRIP-IRRIGATED GARDEN. A RECENT STUDY BY FSI FOOD SECURITY AND THE ENVIRONMENT PROGRAM SCHOLARS ROZ NAYLOR AND JENNIFER BURNEY FOUND THAT SOLAR IRRIGATION IMPROVES INCOMES AND DIET IN RURAL SUB-SAHARAN AFRICA. (CREDIT: MARSHALL BURKE).

CONTINUED FROM PAGE 1

Liberation Technology

BY LARRY DIAMOND

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1 HUMAN RIGHTS DEFENDERS IN KINSHASA, THE DEMOCRATIC REPUBLIC OF THE CONGO, USING FRONTLINESMS TECHNOLOGY—A FREE SOFTWARE PLATFORM ENABING LARGE-SCALE, TWO-WAY TEXT MESSAGING VIA MOBILE PHONES. (CREDIT: GABRIEL BOMBAMBO) 2 PHONES TO BE DISTRIBUTED BY FRONTLINESMS: MEDIC TO ENABLE BETTER PATIENT MANAGEMENT, SHARING ELECTRONIC MEDICAL RECORDS VIA THE CELL PHONES, INEXPENSIVE MOBILE DIAGNOSTICS, AND MAPPING OF HEALTH SERVICES. (CREDIT: JOSH NESBIT)

IN THE PAST TWO DECADES, information technology has transformed the way we live, giving us far-reaching and instantaneous access to news, opinion, knowledge, locations, directions, friends, contacts, and much more. Not surprisingly, these technologies have also begun to transform politics and governance. The huge boost to political participation and organizing generated in 2008 by Barack Obama's use of the Internet, Facebook, and mobile phone (and in 2004 by the Howard Dean campaign) are only the most obvious American examples of what has become a powerful global phenomenon.

Arguably, the political impacts of the Internet, mobile phones, text messaging, the blogosphere, the new social media like Facebook and Twitter, and the photo and video file-sharing media like YouTube are even more profound in other countries where democracy has yet to emerge or to find secure footing. In these contexts, many argue, information technology is leveling the playing field of politics: informing people of their rights, empowering pro-democracy groups, facilitating their ability to organize protests and to monitor elections, documenting and exposing corruption and human rights violations, and locating and deterring acts of political violence. These are liberating effects that help to push repressive political systems toward democracy, accountability, and the rule of law; hence, the term "liberation technology."

"These are liberating effects that help to push repressive political systems toward democracy, accountability, and the rule of law; hence, the term 'liberation technology.'"

But "liberation" goes beyond politics. Information technology is also helping to liberate people from poverty and chronic ill health. The mobile phone has become a powerful tool for conveying to ordinary Africans real-time information about prices and other market conditions for their crops. SMS (text) messaging enables doctors and nurses to remind patients when to take their medications and enables primary health care providers in rural areas to report medical conditions and seek advice on treatment. Mobile phone messaging, combined with geographic positioning software, can help organizations map where epidemics of disease are breaking out or where ethnic and political violence is occurring.

But the effects of information technology on politics are not only democratizing. Increasingly adept authoritarian regimes are using this technology to block access to information, to monitor and control what citizens think and do politically, to mobilize their own armies of supporters and propagandists, to identify and target dissidents and protestors (as has recently happened in Iran), and to refine their mechanisms of repression. These efforts by autocrats to conquer and control cyberspace have proceeded so far that some analysts, like Evgeny Morozov, a Yahoo Fellow at Georgetown University who spoke at Stanford in October, have questioned whether the net effect of these technologies on human freedom is at all positive.

These challenges and opportunities are the focus of the new Program on Liberation Technology at the Center on Democracy, Development, and the Rule of Law. Coordinated by Joshua Cohen (professor of political science, philosophy, and law), Terry Winograd (professor of computer science), and myself, the program sponsors a weekly lecture series attended by students and professors from diverse fields such as computer science, engineering, political science, sociology, medicine, and law. In spring 2010, Cohen and Winograd will teach an interdisciplinary design seminar that will analyze and seek to advance innovations in the application of information technologies to health care in low-income countries. Ultimately, the program hopes to be able to host postdoctoral and visiting scholars doing analytical research and design innovations in this field, to offer small startup grants to help Stanford faculty and students develop new research on practical applications of liberation technology, and to support student internships in this field. Already, the program is working with the Redwood City-based Omidyar Network (ON), a philanthropic investment firm initiated by eBay founder Pierre Omidyar and his wife Pam, to place Stanford undergraduates as summer interns in ON partner organizations. One of these internships will be with the Sunlight Foundation, an innovative nonprofit in Washington, D.C., that utilizes the Internet and related information technology to make information about federal government spending, legislating, and decision making more accessible to the American public.

Presentations at the liberation technology seminar and related research we are doing reveal an exciting and contested new terrain of political, economic, and social development. Like other technologies, from the wheel to the radio to nuclear energy, digital information technologies are in themselves value neutral, and thus open to a wide array of uses, good and bad. It is by now commonplace that the Internet can be used for citizen empowerment, for commerce, or for crime. It may advance democracy, transparency, and human rights, but it may also spread terrorist ideologies and messages, hate speech, and pornography. The Internet is a medium anyone can use. Just as democratic states and socially responsible Internet companies seek to contain its use for criminal or exploitative purposes, so authoritarian regimes work to contain its use for democratic purposes.

Least contentious are the ways that information technologies are being used and adapted to advance public health and economic development. Last fall, two Stanford students, Lucky Gunasekara, a medical school student, and Tom Wiltzius, a senior in computer science, presented the project they have launched to utilize FrontlineSMS—a free software platform enabling large-scale, two-way text messaging via mobile phones—to support community health workers in Malawi. In poor, underserved African nations like Malawi, health workers confront the responsibility for treating large populations spread over vast geographical distances that are connected by poor roads and scant communication networks. Precious health care

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3 ALEX NGALANDE (CENTER), A HOME-BASED CARE AND ART NURSE AND MANAGER OF FRONTLINESMS, USING THE SMS-BASED COMMUNICATIONS NETWORK AT ST. GABRIEL'S HOSPITAL, IN NAMITETE, MALAWI. THE NETWORK ALLOWS THE HOSPITAL TO RESPOND TO REQUESTS FOR EMERGENCY CARE, TRACK PATIENTS, DRUG REGIMES, AND PATIENT STATUS. (CREDIT: JOSH NESBIT) 4 JOSH NESBIT '09 (TOP ROW, SECOND FROM RIGHT), EXECUTIVE DIRECTOR OF FRONTLINESMS: MEDIC, WITH PILOT GROUP OF COMMUNITY HEALTH WORKERS IN MALAWI, TAKEN JUST AFTER THE FIRST SMS TRAINING SESSION. (CREDIT: JOSH NESBIT)

resources, in time and money, are wasted trying to reach these towns and villages, with little advance information as to actual need. As Gunasekara and Wiltzius explained, FrontlineSMS: Medic keeps health workers in much better contact with the communities they serve, enabling them to know the needs in each community, to convey information in both directions via text messaging, and to collect clinical data with simple forms on mobile phones to enhance accuracy and efficiency. But the project faces serious challenges that confront similar efforts to promote development via mobile phone networks in poor regions like Africa and South Asia. These include the reach, reliability, and capacity of the mobile phone networks; the ability of older or less literate individuals to use the system; and the costs of sending multiple text messages a day.

Despite these challenges, the potential for mobile phones to transform development possibilities in poor countries is enormous. Mobile phone usage has been exploding in Africa and other parts of the developing world, which now account for an estimated three-quarters of the 4 billion mobile phones in the world. For the poor and lower middle class in developing countries, a mobile phone is a much more affordable and accessible means of communication than either a land line or a computer. Only the radio competes with the mobile phone as a means of connecting the poor to the larger world, and the radio is not a two-way means of communication—or at least it has not been until FrontlineSMS started enabling community radio stations in Africa to hear from and more directly engage and serve their listeners. Last fall the liberation technology seminar heard from Tapan Parikh, of the UC Berkeley School of Information, about his efforts to enable a wider array of low-income producers to use the mobile phone to enhance their productivity purely through audio functions. Avaaj Otalo is a system for Indian farmers to access timely information on agricultural techniques and pests by dialing a phone number and navigating through simple audio prompts. Farmers can also record questions, respond to others, or access content posted by agricultural experts. The service has been hugely popular, with farmers proving willing to spend time listening to large amounts of material to find what they want—and to broadcast to others.

But text messaging remains the most promising aspect of the mobile phone for development and, as FrontlineSMS developer Ken Banks demonstrated in his visit to Stanford, the democratic uses of this tool are enormous and diverse. The software has been used over mobile phone networks to monitor national elections in Nigeria and Ghana, to facilitate rapid reporting of human rights violations in Egypt, to inform citizens about anti-corruption and human rights issues in Senegal, to monitor and report civil unrest in Pakistan, and to gather and locate reports of post-election political violence in Kenya.

The organization that used FrontlineSMS software to develop the method of "crisis mapping" in Kenya, Ushahidi, is one of many (along with FrontlineSMS itself) that have been supported by the five-year-old Omidyar Network, whose partner, Matt Halprin, and director of investments, Stephen King, spoke to the liberation technology seminar in October. That innovative effort—which comprises both a venture capital fund directed at for-profit startups and a grant-making foundation for non-profits—has committed more than $300 million in investments and grants in two broad areas: "access to capital" (microfinance, entrepreneurship, and property rights) and "media, markets and transparency" (which supports technology that promotes transparency, accountability, and trust across media, markets, and government). In addition to the Sunlight Foundation and Ushahidi, ON's latter initiative supports other U.S.-based organizations, like Global Integrity, which harnesses the Internet and other sources of information to generate detailed assessments of corruption in more than 90 countries. The network also supports national partners in Nigeria, Ghana, and Kenya that are using information technology to improve governance and free expression. These include Infonet, a Web portal that provides citizens, media, and NGOs easy-to-access information on national and local government budgets in Kenya, and Mzalendo, a comprehensive site that enables Kenyans to track the activities of their MPs.

> "We know that technological innovations alone will not reduce poverty and must have the potential to reach a large scale if they are to register a real impact in lifting rural incomes or enhancing freedom and accountability."

We are still in the early phases of innovation and understanding with regard to liberation technology. We know that technological innovations alone will not reduce poverty and must have the potential to reach a large scale if they are to register a real impact in lifting rural incomes or enhancing freedom and accountability. Reports on China and Iran show how sophisticated authoritarian states can manage information and suppress dissent in cyberspace, just as they do in other realms. Increasingly, the struggle for freedom in these countries has the element of a technological cat-and-mouse game between autocrats and democrats, each of whom are using more sophisticated tools to outmaneuver the other. To the extent that the United States clearly positions itself behind the forces of freedom in cyberspace, as Secretary of State Hillary Clinton pledged in her historic speech on January 21, this will help provide political space and resources for besieged bloggers, journalists, and activists pressing for more open societies. But a key part of the challenge is to understand the dynamics of this rapidly emerging field of expression and organization and to design better tools and methods to enable it. That is what the Program on Liberation Technology aims to do. ■

LARRY DIAMOND IS DIRECTOR OF THE CENTER ON DEMOCRACY, DEVELOPMENT, AND THE RULE OF LAW.

Solar-Powered Irrigation Systems Improve Diet and Income in Rural Sub-Saharan Africa

BY ASHLEY DEAN

PHOTOS FROM LEFT: VILLAGE WOMEN ON THE WAY TO MARKET; WOMAN CLEANS A SOLAR PANEL THAT POWERS THE DRIP IRRIGATION SYSTEM IN A RURAL VILLAGE IN BENIN; THE CROPS ON THIS SMALL FARM IN RURAL BENIN ARE WATERED BY A SOLAR-POWERED DRIP IRRIGATION SYSTEM; (PHOTOS: MARSHALL BURKE)

"Focusing on novel irrigation technologies for farmers could be the needed tool for escaping poverty in sub-Saharan Africa. The photovoltaic irrigation drip system could potentially become a 'game changer' for agricultural development over time." *JENNIFER BURNEY*

SOLAR-POWERED DRIP IRRIGATION SYSTEMS

significantly enhance household incomes and nutritional intake of villagers in arid sub-Saharan Africa, according to a new study from the Program on Food Security and the Environment—a joint program between the Freeman Spogli Institute and the Woods Institute for the Environment. The study found that solar-powered pumps installed in remote villages in the West African nation of Benin provide a cost-effective way of delivering much-needed irrigation water, particularly during the long dry season. The results were published in the January 14, 2010, issue of the *Proceedings of the National Academy of Sciences* (PNAS).

"Our case study on women's farming groups in rural Benin revealed solar-powered drip irrigation—a clean, cost-competitive technology—significantly improved nutrition and food security as well as household incomes in one year," said lead author Jennifer Burney, a post-doctoral scholar with the Program on Food Security and the Environment at Stanford.

"Solar-powered drip irrigation systems break seasonal rainfall dependence, which typically limits farmers to a three- to six-month growing season, and support the production of diversified, high-value crops in rural Africa," Burney added.

She and her co-authors noted that much of sub-Saharan Africa's rural population is considered "food insecure," surviving on less than $1 per person per day. "And whereas most are engaged in agricultural production as their main livelihood, they still spend 50 to 80 percent of their income on food and are often net consumers of food," they wrote.

BENIN PILOT PROJECT

In 2007, with support from Stanford's Woods Institute for the Environment, Burney and her colleagues partnered with the nonprofit Solar Electric Light Fund (SELF) on a pilot irrigation project in rural Benin. SELF financed and led the installation of three solar-powered drip irrigation systems in two villages in Benin's Kalalé district. Each system is used by a local women's agricultural group, which typically consists of 30 to 35 women who share the maintenance costs of the new irrigation technology.

"In Kalalé, 80 percent of the villagers live on less than $1.25 per day, which is representative of a number of poor, rural communities in Africa," said study co-author Rosamond Naylor, director of the Program on Food Security and the Environment and a professor of environmental earth system science at Stanford.

In rural Benin, women and girls traditionally are responsible for hauling water by hand, often from very long distances. The solar-powered irrigation systems were designed to free them from hauling water to grow vegetable crops, particularly during the dry season.

To measure the impact of the solar-powered drip irrigation technology, the researchers monitored the agricultural groups using the new irrigation systems, as well as two "control" villages where women continued growing vegetables in traditional hand-watered gardens. Household surveys were conducted at the start of the project in November 2007 and again in November 2008.

NUTRITION AND INCOME

The results were striking. "In just one year, we saw that photovoltaic drip irrigation systems had important implications for food and nutrition security, as well as household income," Burney said.

The three solar-powered irrigation systems supplied on average 1.9 metric tons of produce per month, including such high-valued crops as tomatoes, okra, peppers, eggplants, and carrots. In villages irrigated with solar-powered systems, vegetable intake increased to three to five servings per day—the U.S. Department of Agriculture's Recommended Daily Allowance for vegetables—with most of the improvement taking place during the long dry season. In a world where 20 to 25 percent of global disease burden for children is due to malnutrition, such improvements could have a large impact over time, Burney said.

"Seventeen percent of project beneficiaries reported feeling less food insecure, demonstrating a remarkable effect on both year-round and seasonal food access," Naylor added.

As for household income, the authors found that women who used solar-powered irrigation became strong net producers of vegetables and earned extra income from sales, allowing them to significantly increase their purchases of high-protein food and other staples during the dry season.

Project benefits quickly spread to other community members, Burney said. For example, an elementary school curriculum was developed to help village children learn about the benefits of solar drip technology. "There was an overwhelming sense of pride in the new system by teachers, children, and women participating in the farmer groups," she added.

SUSTAINABILITY

Each solar-powered drip irrigation system is about 1.24 acres (0.5 hectare) in size, costs approximately $18,000 to install, and requires about $5,750 a year to maintain, the authors said. Based on the projected earnings of the farmers, the system should pay for itself in about 2.3 years, they concluded. And despite higher up-front costs, the durable solar systems should be more economical in the long run than less expensive irrigation systems that use gasoline, diesel, or kerosene pumps, with the added benefit of being emissions free, they noted.

Focusing on novel irrigation technologies for farmers could be the needed tool for escaping poverty in sub-Saharan Africa, according to Burney. "The photovoltaic irrigation drip system could potentially become a 'game changer' for agricultural development over time," she added.

"Solar-powered irrigation provides a cleaner source of energy that is less susceptible to global price fluctuations," Naylor said. "Improved agricultural productivity in the developing world can play a critical role in global poverty alleviation, and productivity-enhancing technologies provide a sense of hope for persistently poor households."

Other co-authors of the PNAS study are Lennart Woltering and Dov Pasternak of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in Niger and Marshall Burke of the Department of Agricultural and Resource Economics at the University of California-Berkeley.

The research was supported by an Environmental Ventures Projects grant from the Woods Institute for the Environment at Stanford. The Program on Food Security and the Environment is jointly run by the Woods Institute and the Freeman Spogli Institute for International Studies at Stanford. ■

The Rural Education Action Project: Addressing China's Education Gap through Partnership and Impact

CHINA'S CENTER FOR DISEASE CONTROL did not know that anemia was a problem in China. Nowhere in the nutrition literature is there any mention of the issue, let alone an indication of how widespread the disorder is in many parts of the country. When asked, principals and teachers in 66 rural public schools in one of China's poorest provinces guessed that less than 10 percent of local children were anemic. Many did not even know what anemia was, and almost none understood its causes or how to treat it.

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Curious about the poor educational performance of China's rural students, the Rural Education Action Project (REAP), a group of researchers from the Freeman Spogli Institute and the Chinese Academy of Sciences, suspected that poor nutrition might play a role. After two years of fieldwork, including one of the largest randomized control trials (RCT) in rural schools in a developing country, REAP found that an astonishing 40 percent of young children in China's poor areas were suffering from anemia.

"In addition to documenting that an extraordinary share of children in poor areas are iron deficient," explains REAP Co-Director Scott Rozelle, an economist who has studied rural China for 25 years, "our study identified that poor diet—particularly the absence of meat in the typical student's diet—is the culprit."

While such findings are compelling, REAP is more than a research group—the "A" is for Action. If unable to find a government agency or NGO willing to run a program to address a problem, the group takes action itself. For example, during the 2008–09 school year, REAP ran an RCT in which students in 24 schools received one over-the-counter multivitamin with iron per day for five months. Evaluative tests revealed that anemia rates fell sharply and, interestingly, standardized test scores rose.

Rozelle notes that China's educators began to pay attention when REAP presented these results in a new way.

"Four dollars of multivitamins can turn a C student into a B student," he explains. "The effects we are seeing are much larger than what's been recorded for many other high-profile education interventions, such as class-size reductions," Rozelle adds, "and vitamins are cheaper than building more classrooms and training more teachers."

Chinese leaders at the provincial and even national level have taken notice. The governor of Shaanxi province, in China's northwest, ordered a new experiment and requested that REAP be on hand to evaluate. Elite government leaders, including the premier, vice premier and members of the State Council, have ordered the Ministry of Education to take action on the issue.

How is it that REAP was the first to identify anemia as a problem? According to Linxiu Zhang, director of REAP-China and a professor in the Chinese Academy of Sciences, the group was simply willing to get its hands dirty when others were not.

"It was almost certainly only possible because our research team was willing to leave our offices and work in what historically have been some of the poorest areas of the world," Zhang says.

Indeed, in the past four years REAP has spent a lot of time in the backwaters of China's vast hinterland. Co-Director Rozelle, for example, spends almost five months a year in China, mostly in remote mountains and stark deserts, working closely with educators, doctors, parents, students, and others.

The battle against anemia is not the only area in which REAP has made a contribution. A recent REAP study found that China's rapidly proliferating migrant schools—mostly unregulated institutions that serve the children of China's millions of rural-to-urban migrants—encompass the lowest performing group of students in the entire country. REAP has also discovered that scholarships in China are allocated in a way that induces children to select lower ranking schools and undesirable majors. Another study revealed that more than two-thirds of China's rural pre-school children do not have the basic competencies necessary to compete in the nation's challenging elementary school curriculum.

GENUINE VALUE ADDED

REAP distinguishes itself in the rapidly growing field of development economics and the galaxy of development-oriented nonprofits by emphasizing three core, value-added strategies:

Empirical Methodology

While there is a lot of activity occurring in the development field, very few initiatives produce impacts that can be measured scientifically. For this reason, it is often anyone's guess whether well-intentioned money or sincere programs actually bring about their intended objectives. Mindful of this challenge, REAP conducts evaluations designed to pinpoint attribution between programs and their outcomes. The group employs quasi-experimental methods, collects exhaustive panel data before and after a program, and conducts large-scale randomized trials, all with one purpose in mind: finding out what works and what does not. As Rozelle points out, "True attribution is only possible when proper methods are used in the design and implementation phases."

Interdisciplinary and Collaborative

REAP's strategic location within FSI provides access to the best available expertise in designing promising policy experiments. In addition to colleagues within REAP's home centers at APARC and FSE, the group has partnered with other institutes on campus, including the School of Education, the Department of Economics, and the Center for Health Policy to design forward-looking experiments in education and student health.

"We are an umbrella project," explains Brian Sharbono, executive director of REAP, "we welcome partners from other universities, research centers, government agencies, NGOs, corporations, and individual alumni donors. We combine the talents of our research team in China, at Stanford—including both students and faculty—and elsewhere to carry out our projects. In the past three years we have partnered with more than 30 other groups."

Not Just Research: Policy Impact Is REAP's Goal

REAP's work does not stop after the numbers are crunched. Through collaborators in the Chinese Academy of Sciences, REAP enjoys the unique capacity to submit findings directly to the office of China's State Council—the nation's highest governing body. In the past year, six different policy briefs based on REAP's research have been read and acted on by the premier and his staff.

"We are constantly reminding ourselves," Rozelle explains, "we are committed to informing policy, evaluating policy, and changing policy. So one of our main tasks in designing a study is to make sure it is policy relevant."

Despite the emphasis on policy impact, however, REAP's team members at Stanford and in China have published the findings of all of their studies in peer-reviewed economics, education, and health journals.

THE CHALLENGES AHEAD

As REAP moves forward, demands for the group's services have expanded. In the coming months a new program on intestinal worms and other neglected tropical diseases is being rolled out. REAP is also designing a study about how best to use computer-assisted tutoring for migrant students. To accomplish the objectives of these new programs, REAP looks to expand student internships, graduate dissertation opportunities, and other collaborations within FSI, with other Stanford units, and with research teams and development advocates throughout the world. ■

1 A MIGRANT CHILD OUTSIDE BEIJING
2 SCHOOLCHILDREN STUDYING IN RURAL SHAANXI PROVINCE
3 CHILD AT A SCHOOL CANTEEN

On Climate, A Solution from the Poor

BY XANDER SLASKI

THE FASTEST WAY TO COMBAT CLIMATE CHANGE may not come from shutting down dirty coal plants, building out wind or solar power, or switching the fleet to electric vehicles. Instead, the quickest solution may come from an unexpected source—changing the way in which the poor in developing countries cook. Close to 3 billion people worldwide continue to cook using traditional methods, which essentially entail an open fire (the so-called "three-rock stove") inside of the home. Such cooking methods produce black carbon (as well as other greenhouse gases that result from incomplete combustion), which has recently been linked to the so-called "atmospheric brown cloud"—a pall over Asia that is hastening regional and global warming effects. While other greenhouses gases can linger in the atmosphere for decades, black carbon is eliminated rather quickly, meaning that reducing or eliminating black carbon from the atmosphere may be one of the fastest ways to have leverage on the climate.

Improved biomass stoves, which increase the efficiency of combustion, drastically reduce black carbon and other products of incomplete combustion that have local and global environmental effects (although it should be noted that black carbon comes from a variety of sources, including open biomass burning, diesel engines, and power plants).

Close to 3 billion people worldwide continue to cook using traditional methods, which essentially entail an open fire inside of the home. Such cooking methods produce black carbon, which has recently been linked to the so-called "atmospheric brown cloud."

In addition to environmental benefits, stoves offer co-benefits for health. Indoor air pollution (IAP) causes more than a million deaths each year in developing countries and is responsible for a host of other diseases including acute respiratory infections (yet despite the enormous burden of disease from IAP, it is not well publicized). There are also significant welfare benefits for women and children, who are charged with spending hours a day collecting fuel. Indeed, these "co-benefits" in a climate context were the initial reasons for the development of such stoves. While other alternatives to traditional cooking methods do exist—including switching to cleaner fuels like LPG—in many cases the infrastructure to distribute such fuels does not exist (or access is irregular) and the price is simply prohibitive for the poorest of the poor. Improved biomass stoves are a transitional technology that is low cost while still offering substantial reduction in emissions.

As with many environmental problems, the solution is relatively straightforward in principle but immensely challenging in implementation. There has been an enormous amount of effort, over more than two decades, to distribute improved biomass stoves. Most of the effort has been by governments, NGOs, and small-scale entrepreneurs. Unfortunately, these programs have been relatively unsuccessful (with the notable exception of the Chinese national program). Programs that have sold or distributed more than a few thousand stoves are extremely rare. Further, there is substantial doubt as to how many stoves are actually used on a regular basis, as evidence suggests that a large portion of users revert to traditional cooking practices. In short, the vast majority of the 3 billion people reliant on biomass for the majority of their energy needs continue to use traditional combustion methods that are harmful to their health and the climate.

Seeing a business opportunity, several large-scale commercial operations have begun programs to sell improved biomass stoves. There is a particular focus on the large Indian market, where about three quarters of the rural population uses traditional fuels for their cooking needs (and despite rapid urbanization the country remains predominately rural). Major players in the market include First Energy (formerly BP Emerging Consumer Markets), Envirofit, and Philips. While still relatively early in their scale-up, there is the potential that commercial efforts will succeed in creating large-scale adoption of cookstoves.

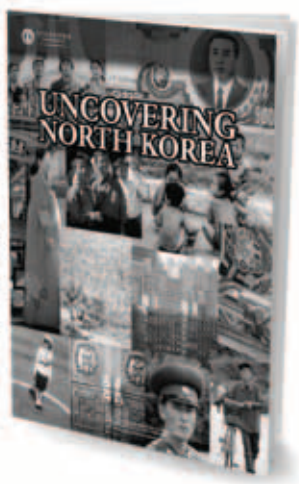
The key innovation of for-profit stove programs is their unique focus on creating demonstrable value for the user. In particular, the way that stoves have been marketed has created perceptions that they are economical, desirable, and modern—a radical change from previous efforts when cookstoves were often seen as outside solutions being imposed with little knowledge of local wants and needs. Even in instances when stoves are highly subsidized or distributed by NGOs or governments, there is an increasing understanding that they will only be adopted and put to regular use if there is a motivation to do so.

If commercial efforts can succeed in serving a substantial portion of the market of 3 billion people, the benefits to the climate and to human welfare will be massive. Already, for-profit cookstove ventures have sold hundreds of thousands of stoves—a major achievement to be sure, but a small portion of the potential market. Several of the organizations are approaching (or have already reached) profitability, meaning that they are viable and will expand to serve a larger market. If large-scale profitability is achieved, it will be an "existence proof"—evidence that commercial programs can provide cookstoves to the poor. Still, the companies themselves acknowledge that not everyone can be served by a commercial organization. The poorest of the poor will be unable to afford an improved stove. In such cases, subsidies will be necessary, although even if given away for free, cookstoves will only be used regularly if they provide a clear value to the user.

Although often overlooked in the climate debate, the way the poor use energy has major implications not only for their own lives but for the climate as well. Despite the enormous challenges, addressing the question of how to hasten the transition to cleaner-burning fuels or technologies that burn biomass more cleanly is key to solving the climate puzzle. Indeed, it may be crucial given the quick leverage that eliminating black carbon could have on climate. And yet, there is much more at stake than just climate—even if that is what is likely to bring international attention to the oft-forgotten issue of energy poverty. Finding a sustainable, scalable solution will not only ease the climate crisis but bring a long-awaited improvement to the lives of billions. ■

Uncovering North Korea
SPICE's Latest Curricular Offering for U.S. High Schools

BY RYLAN SEKIGUCHI, JOON SEOK HONG, RENNIE MOON, AND GARY MUKAI



"During my tenure as director of Stanford's Korean Studies Program (KSP), I have appreciated KSP's unique collaborative work with SPICE, which has successfully made KSP's research on U.S.–South Korean relations and now North Korea accessible to American high school students. SPICE's newest curricular unit, *Uncovering North Korea*, will clearly fill a void in the U.S. high school social studies curriculum. It is the first curriculum unit of its kind in the United States. I am very proud of this."

PROFESSOR GI-WOOK SHIN, DIRECTOR, SHORENSTEIN APARC AND STANFORD KSP

NORTH KOREA remains one of the most misunderstood and misrepresented countries in the United States, whether in high school classrooms, college campuses, or U.S. society at large. The problem is twofold. First, North Korea is a very isolated and closed society, and accurate and reliable information about the country is difficult to obtain. Second, history and politics influence Western portrayal of North Korea, which is often one-sided and narrowly focused on negative issues such as the nuclear weapons program. While both challenges have eased in recent times, the need to educate American students about North Korea is long overdue and sorely needed. *Uncovering North Korea* seeks to fill this gap and strives to bring more accurate information and objectivity to the study of North Korea in U.S. high schools and beyond. This article provides a general overview of the six lessons that comprise *Uncovering North Korea*.

Lesson One serves as a brief introduction to the topic of North Korea and encourages students to reexamine their preconceptions and knowledge about the country. The lesson seeks to frame the rest of the unit by first establishing that there is a gap in our understanding of North Korea, explaining some of the reasons this gap exists, and finally laying out a plan to begin bridging the gap. Students are then introduced to several common questions about North Korea that guide the direction of the unit.

Lesson Two explores the nature of the North Korean political system with a focus on the role of its leadership and ideology. Students discover that there are many interesting and unique elements to the North Korean political system, such as the "cult of personality" of Kim Il-sung and Kim Jong-il or the mixture of socialist and nationalist ideologies that they have promoted. A more open engagement with and deeper understanding of the North Korean political system is vital, not only because it can confirm preconceptions and disabuse misconceptions but also because politics in North Korea greatly influences the country's economic, security, and social policies. This lesson seeks to fill gaps in understanding and address common stereotypes about North Korea by describing the characteristics of the North Korean political system, profiling its leaders, and exploring its ideology.

Lesson Three takes a deeper look into the controversy surrounding North Korea's development of nuclear weapons. The lesson seeks to contextualize what students may read in the headlines and hear through the media. By understanding the history and the positions of each country involved, students will be better able to comprehend North Korea's nuclear ambitions and motivations, as well as the rationale of the United States, South Korea, and other countries in trying to prevent and roll back North Korea's nuclear power. The lesson encourages students to examine the nuclear issue from different perspectives and to appreciate the gravity and complexity of such international security issues.

PHOTOS CLOCKWISE FROM ABOVE: RENNIE MOON (FRONT ROW, FIRST FROM THE RIGHT) AND GARY MUKAI (BACK ROW, SECOND FROM THE RIGHT) AT THE ACADEMY OF KOREAN STUDIES, SEOUL; NORTH KOREAN SCHOOL CHILDREN. (COURTESY MARSH WONG); NORTH KOREAN SOLDIERS IN PANMUNJOM, A VILLAGE ON THE BORDER OF NORTH AND SOUTH KOREA. (COURTESY MARSH WONG)

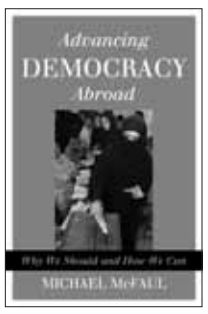
Lesson Four explores one of the most controversial issues regarding North Korea: human rights. Students are first introduced to the general concept and history of human rights, and they examine excerpts from the Universal Declaration of Human Rights. They then apply this basic understanding of human rights to the case of North Korea, learning about human rights issues in North Korea specifically and reading testimony from a North Korean defector who endured 10 years in a North Korean prison camp. As a culminating exercise, students consider and then compose a written response to the question, "Is North Korea evil?"

Lesson Five provides students with a glimpse into North Korean society through the film *A State of Mind*, a documentary about two North Korean school girls as they prepare for the 2003 Mass Games. The girls live in Pyongyang, the capital of North Korea. Prior to viewing the film, students discuss the term "state of mind" and nine key themes and concepts of the film. Students are divided into small groups and each group is asked to consider one of the nine key themes or concepts while watching the film. After viewing the film, the small groups work on activities that focus on these themes and concepts.

Lesson Six provides students with a broad overview of the characteristics and state of North Korea's economy. Over the past two decades, North Korea's command economy has increasingly faced serious difficulties due to mismanagement, international isolation, and weak agriculture. Today, the North Korean people suffer from malnutrition and poverty, but the ruling government has been hesitant to undertake drastic economic reforms. In Part One of this lesson, students consider the decline in North Korea's economy through an examination of the food crisis in North Korea. In Part Two, students are introduced to some economic changes taking place in North Korea. Finally, students discuss the question, "Will North Korea's economy collapse or change?"

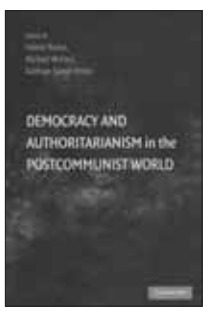
Uncovering North Korea is the second part of a three-part series that SPICE is developing in collaboration with Professor Gi-Wook Shin and the Stanford Korean Studies Program, Shorenstein APARC. Professor John Lewis, CISAC, also served as a key advisor to *Uncovering North Korea*. The first part, *U.S.–South Korean Relations*, was completed last year and Rennie Moon and Gary Mukai co-presented an overview of the curriculum unit at the Academy of Korean Studies in Seoul in September 2009. The third, *Inter-Korean Relations*, is currently being developed by Joon Seok Hong, Rennie Moon, Rylan Sekiguchi, and Stanford graduate student, HyoJung Jang, Center for East Asian Studies. ■

NEW BOOKS FROM CDDRL



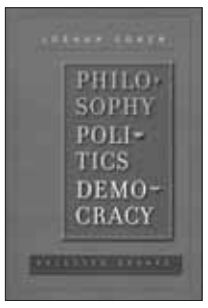
Advancing Democracy Abroad: Why We Should and How We Can
Rowman & Littlefield,
November 2009
By Michael McFaul

This book offers examples of the tangible benefits of democracy—more accountable government, greater economic prosperity, and better security—and explains how Americans can reap economic and security gains from democratic advance around the world. In the final chapters of this new work, McFaul provides past examples of successful democracy promotion strategies and offers constructive new proposals for supporting democratic development more effectively in the future.



Democracy and Authoritarianism in the Postcommunist World
Cambridge University Press,
December 2009
Edited by Valerie Bunce, Michael McFaul, Kathryn Stoner-Weiss

This volume brings together a distinguished group of scholars working on Eastern Europe and the former Soviet Union to examine in depth three waves of democratic change that took place in 11 different former Communist nations. The essays draw important conclusions about the rise, development, and breakdown of both democracy and dictatorship in each country and together provide a rich comparative perspective on the post-Communist world.



Philosophy, Politics, Democracy: Selected Essays
Harvard University Press,
October 2009
By Joshua Cohen

For 20 years, Joshua Cohen has explored controversial issues facing the American public: campaign finance and political equality, privacy rights and robust public debate, and the capacity of democracies to address important practical problems. Cohen draws on his work in these diverse areas to develop an argument about what he calls, following John Rawls, "democracy's public reason." He rejects the idea that democratic politics is simply a contest for power and that philosophical argument is disconnected from life. Political philosophy, he insists, is part of politics, and its job is to contribute to the public reasoning about what we ought to do.

Promoting Democracy and the Rule of Law: American and European Strategies
Palgrave Macmillan, August 2009
Edited by Amichai Magen, Thomas Risse, and Michael McFaul

European and American experts systematically compare U.S. and EU strategies to promote democracy around the world—from the Middle East and the Mediterranean to Latin America, the former Soviet bloc, and Southeast Asia. In doing so, the authors debunk the pernicious myth that there exists a trans-Atlantic divide over democracy promotion.

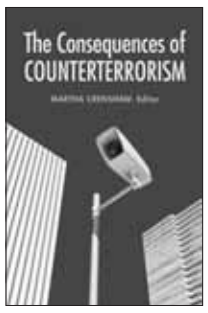
Political Liberalization in the Persian Gulf
Columbia University Press, 2009
By Joshua Teitelbaum

The countries of the Persian (or Arab) Gulf produce about 30 percent of the planet's oil and keep around 55 percent of its reserves underground. The stability of the region's autocratic regimes, therefore, is crucial for those who wish to anchor the world's economic and political future. Yet despite its reputation as a region trapped by tradition, the Persian Gulf has taken slow steps toward political liberalization. The question now is whether this trend is part of an inexorable drive toward democratization or simply a means for autocratic regimes to consolidate and legitimize their rule.

NEW VOLUMES FROM CISAC

The Global Nuclear Future: Special edition of Daedalus journal
American Academy of Arts and Sciences, Vol. 1 October 2009; Vol. 2 January 2010
Edited by CISAC Co-Director Scott D. Sagan and Steven E. Miller of Harvard's Belfer Center for Science and International Affairs

This special two-volume issue on the changing global nuclear order features articles by CISAC scholars including co-directors Siegfried Hecker and Scott Sagan, visiting professor Robert Rosner, and consulting professor Thomas Isaacs. Essays include "Nuclear power without nuclear proliferation?,""The growth of nuclear power: drivers and constraints," "Shared responsibilities for nuclear disarmament," "Lessons learned from the North Korean crises," "The key role of the back-end in the nuclear fuel cycle," and "Alternative nuclear futures."



The Consequences of Counterterrorism
Russell Sage Foundation,
February 2010
Edited by Martha Crenshaw, CISAC Senior Fellow

The 9/11 terrorist attacks opened America's eyes to a frightening world of enemies surrounding us. But have our eyes opened wide enough to see how our experiences compare with other nations' efforts to confront and prevent terrorism? Other democracies have long histories of confronting both international and domestic terrorism. Some have undertaken progressively more stringent counterterrorist measures in the name of national security and the safety of citizens. But who wins and who loses? In *The Consequences of Counterterrorism*, editor Martha Crenshaw makes the compelling observation that "citizens of democracies may be paying a high price for policies that do not protect them from danger." This accessibly written volume examines the political costs and challenges democratic governments face in confronting terrorism.

NEW BOOK FROM FCE

Ethnic Europe: Mobility, Identity, and Conflict in a Globalized World
Stanford University Press, 2010
Edited by Roland Hsu

In his new book, *Ethnic Europe*, Roland Hsu examines the increasingly complex ethnic challenges facing the expanding European Union. Essays from 11 experts tackle such issues as labor migration, strains on welfare economies, the durability of local traditions, the effects of globalized cultures, and the role of Islamic diasporas, separatist movements, and threats of terrorism. With Europe now a destination for global immigration, European countries are increasingly alert to the difficult struggle to balance minority rights with social cohesion. In pondering these dilemmas, the contributors to this volume take us from theory, history, and broad views of diasporas to the particularities of neighborhoods, borderlands, and popular literature and film that have been shaped by the mixing of ethnic cultures.

NEW FSE PUBLICATION

Climate Change and Food Security: Adapting Agriculture to a Warmer World
Springer, January 2010
Edited by David Lobell and Marshall Burke

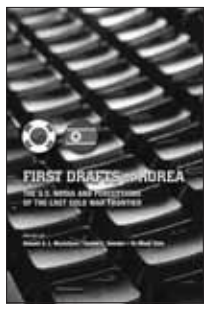
This book aims to resolve some of the controversy surrounding the impact of climate change on agricultural development by exploring and comparing the different methodologies and data that scientists use to understand climate's effects on food security. It explains the nature of the climate threat, the ways in which crops and farmers might respond, and the potential role for public and private investment to help agriculture adapt to a warmer world. This broader understanding should prove useful to both scientists charged with quantifying climate threats and policymakers responsible for crucial decisions about how to respond.

NEW PUBLICATION FROM PESD

Real Drivers of Carbon Capture and Storage in China and Implications for Climate Policy
Program on Energy and Sustainable Development
Working Paper #88, August 2009
By Richard K. Morse, Varun Rai, and Gang He

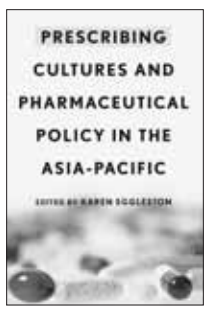
China presents the most challenging and critical test for CCS deployment at scale. While China has begun a handful of marquee CCS demonstration projects, the stark reality is that China's incentives for keeping on the forefront of CCS technology learning do not translate into incentives to massively deploy CCS in power plant applications as CO_2 mitigation would have it. Fundamental and interrelated Chinese interests—in energy security, economic growth and development, and macroeconomic stability—directly argue against large-scale implementation of CCS in China unless such an implementation can be almost entirely supported by outside funding.

NEW TITLES FROM SHORENSTEIN APARC



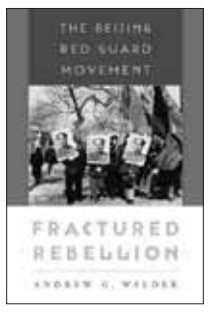
First Drafts of Korea: The U.S. Media and Perceptions of the Last Cold War Frontier
Brookings Institution Press,
August 2009
Edited by Donald Macintyre, Daniel Sneider, and Gi-Wook Shin

Few regions rival the Korean peninsula in strategic importance to U.S. foreign policy. For half a century, America has stationed tens of thousands of troops in South Korea to defend its ally from the threat of North Korean aggression. South Korea, in turn, is critical to the defense of Japan, another ally and the linchpin of American interests in East Asia. The rise of a nuclear-armed North Korea ups the ante. Despite the stakes, the two Koreas register only episodically on the radar of the United States. *First Drafts of Korea* breaks new ground in examining how the American mass media shape U.S. perceptions of both Koreas and, as a result, influence U.S. foreign policy.



Prescribing Cultures and Pharmaceutical Policy in the Asia-Pacific
Brookings Institution Press,
August 2009
Edited by Karen Eggleston

Prescribing Cultures examines how pharmaceuticals and their regulation play an important and often contentious role in the health systems of the Asia-Pacific. The book's contributors discuss important issues for U.S. policy. These include such hot-button topics as drug imports from Asia, regulation of global supply chains to assure drug safety and quality, new legislation to encourage development of drugs for neglected diseases, and the impact that decisions about pricing, regulation, and trade agreements have on access to medicines at home and abroad.



Fractured Rebellion: The Beijing Red Guard Movement
Harvard University Press,
October 2009
By Andrew G. Walder

Fractured Rebellion is the first full-length account of the evolution of China's Red Guard Movement in Beijing, from its beginnings in 1966 to its forcible suppression in 1968. Andrew Walder combines historical narrative with sociological analysis as he explores the radical student movement's crippling factionalism, devastating social impact, and ultimate failure. Walder's nuanced account challenges the main themes of a generation of scholarship about the social conflicts of China's Cultural Revolution, shedding light on the most tragic and poorly understood period of recent Chinese history.

Growing Pains: Tensions and Opportunity in China's Transformation
Brookings Institution Press,
January 2010
Edited by Jean C. Oi, Scott Rozelle, and Xueguang Zhou

China is transforming itself and the world is adapting in response. Profound forces have reshaped the country's socioeconomic and political landscapes, but they have also brought growing pains that China must face if it is to continue its upward trajectory. The contributors to *Growing Pains* tackle thorny issues in China's ongoing reforms—employment, land policy, village elections, family planning, health care, social inequality, and environmental degradation—and use survey data and on-the-ground observation to assess the severity of the problems and the likelihood of near-term solutions.

One Alliance, Two Lenses U.S.-Korea Relations in a New Era
Stanford University Press,
January 2010
By Gi-Wook Shin

One Alliance, Two Lenses examines U.S.-Korea relations in the dramatic period (1992–2003) that witnessed the end of the Cold War, South Korea's democratization, inter-Korean engagement, two nuclear crises, and the start of the U.S. war on terror. These events have led to a new era for U.S.–South Korea (ROK) relations. Based on analysis of newly collected data from major American and Korean newspapers, Gi-Wook Shin argues that the two allies developed different lenses through which they view their relationship. U.S.-ROK relations, linked to the issue of national identity for Koreans, are largely treated as a matter of policy for Americans—a difference stemming from each nation's relative power and role in the international system. Offering rich empirical data and analysis, Shin also presents policy suggestions to improve a relationship, which—after 50 years—has come under more sustained criticism than ever before.

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FSI serves as the hub of the Stanford International Initiative and the institute's director plays a central role in this effort. At FSI, Stanford scholars take an interdisciplinary approach to contemporary issues such as how nations can work together more effectively and on their own to prevent terrorism, overcome barriers to nuclear disarmament, curtail global warming, alleviate poverty and injustice, institute democratic and accountable government, promote economic development, improve the delivery of global health care, and support global stability. The FSI Director's Discretionary Fund enables the director to encourage new research projects to further the study of these critically important areas of international policy.

Gifts to the Director's Discretionary Fund allow the director to make necessary investments in the infrastructure that sustains the institute. The Director's Discretionary Fund also underwrites the high-quality publications that communicate the work of the institute's faculty and researchers to policymakers, other scholars, supporters, and influential publics around the world.

For more information about making a gift to FSI in support of the Director's Discretionary Fund or other opportunities, please contact Neil Penick, associate director, development, at 650-723-8681 or npenick@stanford.edu.

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FSI STANFORD

WINTER 2010

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FREEMAN SPOGLI INSTITUTE FOR INTERNATIONAL STUDIES

WELCOME TO *Encina* COLUMNS

As 2010 opens, there is so much promise in international affairs. FSI scholars here and in Washington are helping to lead the way forward. Michael McFaul, Elizabeth Sherwood-Randall, and Jeremy Weinstein are playing key roles on Russia, Europe, and democracy on the National Security Council. Paul Stockton is directing homeland security affairs for the Defense Department. Former FSI Advisory Board member Susan Rice is revitalizing U.S. diplomacy as ambassador to the United Nations and Ambassador Richard Morningstar is advancing energy security as special envoy for Eurasian energy.

Among many important initiatives, the United States and Russia are moving to cut nuclear stockpiles, reducing risks of diversion to terrorist hands. The United States is forging new beginnings with Muslim communities, new engagement with Africa, and improved relations with South and North Korea, Japan, and China. FSI researchers addressing poverty, malnutrition, food insecurity, and disease are helping to bring new technical solutions and effective interventions to some of the poorest, most desperate populations on Earth. Other FSI scholars are addressing energy security, protection of the environment, and delivery of inexpensive energy to poor communities across the globe.

FSI continues to provide a rich forum for policy debate and public education. This year's Drell Lecture tackled the daunting task of working toward a world without nuclear weapons, with physicist Sid Drell and former Secretary of State George Shultz, in conversation with Phil Taubman. FSI has launched a new Program on Political Reform and Good Governance in the Middle East and a university-wide Program on Human Rights. We're pursuing a promising new U.S.-Europe-Middle East dialogue. As Payne lecturers this spring, FSI welcomes Steve Coll, the author of *Ghost Wars*, to examine the globalization of terror and Ambassador Zalmay Khalilzad to address the outlook for Afghanistan and the region.

We are deeply grateful to all of you who provide funding, advice, and counsel for our many deserving programs. Moving forward, my priorities are the renovation of Encina Commons, to create a vibrant international studies community at Stanford, establishing the Stanford China Program at Peking University, and securing the future of FSI's Center on Democracy, Development, and the Rule of Law, which addresses the issues central to a functioning, modern state—democracy, human rights, sound governance, sustainable development, and an abiding rule of law. And as always, we are eager to expand the roster of professorships, senior fellowships, and graduate fellowships at Stanford.

We *do* know how to make the world a safer, more secure, humane, and prosperous one. And with your generous support, we will.

Sincerely,

COIT D. BLACKER, DIRECTOR

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