

Massachusetts Institute of Technology  
**SECURITY STUDIES PROGRAM**



Annual Report  
2002-2003

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#### Cover Picture:

The centerpiece of the national Air Force Memorial proposed for Washington, DC reaches 270 feet into the air. This Memorial is intended to honor the millions of men and women who have served in the U.S. Air Force and its predecessor organizations. The Memorial is designed by James Ingo Freed of New York City's Pei Cobb Freed & Partners architects. Mr. Freed is widely recognized for designing the Holocaust Museum, also in Washington DC.

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**SECURITY STUDIES PROGRAM**  
Massachusetts Institute of Technology  
292 Main Street (E38-600)  
Cambridge, MA 02139

**Tel:** (617) 258-7608  
**Fax:** (617) 258-7858  
**Email:** [ssp-mit@mit.edu](mailto:ssp-mit@mit.edu)  
**URL:** <http://web.mit.edu/ssp>





## SECURITY STUDIES PROGRAM

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**T**he Security Studies Program (SSP) is a graduate level research and educational program based at the MIT Center for International Studies. It traces its origins to two initiatives.

One is the teaching on international security topics, and most particularly on defense budgeting, that Professor William Kaufmann began in the 1960s at the MIT Political Science Department. The other is the MIT-wide seminars on nuclear weapons and arms control policy that Professors Jack Ruina and George Rathjens began in the mid-1970s.

Initially called the MIT Defense and Arms Control Studies Program, SSP's teaching ties are primarily, but not exclusively, with the MIT Political Science Department. The SSP faculty, however, includes natural scientists and engineers as well as social scientists. Distinguishing the program is its ability to integrate technical and political analyses in studies of international security issues.

Several of the SSP faculty have had extensive government experience. They and the other Program faculty advise or comment frequently on current policy problems. But the Program's prime task is educating those young men and women who will be the next generation of scholars and practitioners in international security policy making. The Program's research and public service activities necessarily complement that effort.

The Center for International Studies is a major unit of the School of Humanities, Arts, and Social Sciences at MIT and seeks to encourage the analysis of issues of continuing public concern. Key components of the Center in addition to SSP are Seminar XXI, which offers training in the analysis of international issues for senior military officers, government officials, and industry executives; and the MIT Japan Program, which conducts research and educational activities to further knowledge about Japanese technology, economic activities, and politics.

## DIRECTOR'S STATEMENT

### OVERVIEW

**A**nother year, another war, but this one split both the Western Alliance and its local equivalent, the MIT Security Studies Program. The Iraq War of Spring 2003 divided us in ways that the Afghanistan War of the previous year did not. Some colleagues opposed the Iraq War as unnecessary and diverting, believing that Saddam could be contained as he had been for the past dozen years, and that the pursuit of al Qaeda, which is at war with the United States, required the nation's undivided attention. Others felt that the containment of Saddam helped spawn al Qaeda by requiring a visible US military presence in Saudi Arabia, the heart of Islam, while not preventing Saddam from continuing to commit atrocities against his own people. None among us thought that a nuclear-armed Iraq was either desirable or close at hand. Most, but not all of us, discounted the importance of Iraqi possession of chemical and biological weapons. The war, we all agreed, had a window of opportunity opened by the attacks of September 11, 2001, and that only the approach of the 2004 election, not the opposition of US allies, could prevent it from taking place.

For or against, we all became minor media stars during the war, offering not always insightful opinions for local and national audiences on such topics as the pace of the war, the performance of American airpower, the likely shape and consequence of the urban fight, and the possible composition of the post-war Iraqi government. Strangely, we were never asked why the campuses, including our own, were quieter than they had been for the first days of the Afghanistan War. Neither academic

theorizing about the effectiveness of deterrence nor the galling opposition of the French, the Germans, the Canadians and the Turks gave the antiwar movement any collegiate traction for demonstrations against the attack on Iraq. The explanation, we should have known, for both the speed with which Iraq was conquered and the anemic antiwar protest lies largely in the extensive use of precision-guided weapons—JDAMs, Laser Guided Bombs, and the others. Precision reduces collateral damage and criticism of US policy.



*The 82nd looking for al Qaeda in Afghanistan*

The Iraqi military already had experience with precision warfare of an early variety in its first war with America and in the subsequent enforcement of the so-called No Fly Zones that came afterwards. But the Gulf War videos notwithstanding, many in the American public still thought of air attacks in terms of the carpet-bombing images of Vietnam and World War II documentaries, until last year's Afghanistan war. In Afghanistan the images presented were of Special Operations spotters on horseback smashing al Qaeda and the Taliban by

calling in a JDAM or two from a single circling B-52 high above. These civilian-sparing and sparingly organized strikes demonstrated the great value of precision warfare. Simply put, precision inhibits opposition. In this war the Iraqi Air Force was apparently too afraid to fly and the Iraqi Army largely walked away from its vehicles and the war. Back in the United States, the war's domestic critics were disarmed by the war's rapid pace and obvious accuracy. The pool camera fixed on the roof of Baghdad's Palestine Hotel showed Saddam's palaces exploding awesomely in the background, while Iraqis below waited safely in their vehicles for traffic lights to change. War American style seems to have become a quick, low casualty, low collateral damage affair for which both armed resistance and domestic political protest are futile and inappropriate behavior.



*Saddam's Palace: the only place where Americans can now smoke in-doors*

This kind of power worries many. Our European allies fear permanent irrelevance. Turkey's awkward refusal to allow staging facilities for U.S. aircraft and troops did not stop the attack on Iraq. Neither did the threat of a French UN Security Council veto nor reports of overwhelmingly negative German public opinion. America's great old friend Canada and America's great new friend Mexico chose principle over economic self-interest by opposing the war, but now quietly seek forgiveness for their transgression. Iran and North Korea have expressed both nuclear bravado and intense concern about possibly being next on President Bush's list of regimes to be changed. Some observers believe American arrogance has grown with American power, giving insult to friend and foe alike while breaking the difficult-to-weave bonds of international collaboration and institutions.





*101st locates Saddam's sons*

Domestically, Democrats fear that President Bush is using successful expeditionary warfare to reinforce al Qaeda-generated security concerns among the public and rekindle the late Cold War belief that only Republican administrations will be military savvy enough and determined enough to protect America effectively. Complaints about President Bush's victory-lap landing on the carrier, Vietnam-like chaos in Iraq, and the failure to increase funding for homeland security are probes for weaknesses in the Republican war-machine that have produced nothing yet but deepening Democrat frustration and a more pronounced presidential swagger.

American power is in fact not boundless. Military transformation promises that limited

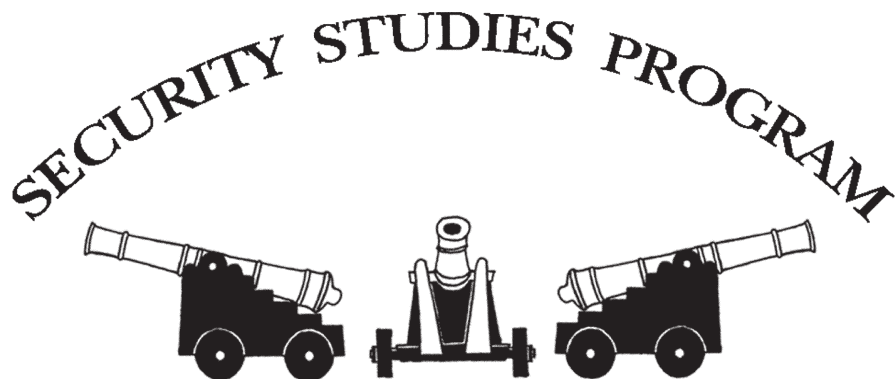
U.S. forces, through the effective integration of information dominance, stealth and precision attack capabilities, can project and sustain American power globally. There is no doubt about our technological prowess. We spend nearly six times what the rest of the world spends on defense R&D activities, a gap that has existed on roughly the same order of magnitude for the last 60 years. Technology is emphasized because we are manpower limited, now more than ever. Conscription ended in the US in 1974. America relies on volunteers for its active and reserve military. Prolonged combat on a significant scale requires conscription, which is why we seek capabilities to conduct quick, relatively bloodless wars. A series of wars and occupations in unpleasant, hostile places will likely strain the system in

the same way one long costly war would. Without a draft there will not be enough people to drive the trucks let alone pull the triggers. Some surely will join for the adventure, but not enough. More and more of the force are married with children. Thirty-five year old reservists want a part-time job near their homes and families, not a chance to spend six months in Central Asia every other year without them. More technology may be the answer. Greater use of contractors (partially to free up active duty soldiers and partially to replace cranky reservists), greater recruitment of immigrants (already about five percent of the force), and greater support from allies (if the Japanese and the Poles sign up for Iraq duty can the Gurkhas be far behind?) can help, but more likely the personnel strains inherent in a globally intervening military will quickly constrain thoughts of Empire and spreading of democracy by the sword.

Personally, it has been a wonderful year. Barry Posen and Cindy Williams have been away on

leave. So too was Ted Postol for a semester (138 days to be exact, but who was counting). Geoff Forden and Jorn Siljeholm served in the UN Monitoring, Verification and Inspection Commission (UNMOVIC), but did not manage to stop the war. Several of our past military fellows and even some of our graduates had a role in the excellent victory. This year's crop of students and military fellows has been especially terrific. Adding to the joy of the year, France and Germany have become the leaders of an anti-American coalition within the European Union, hastening the day when American troops will leave the continent. The troops are leaving Saudi Arabia and are pulling back from the demilitarized zone in Korea. Now to get them home.

Thanks to the combined talents of Karen Sapolsky, Magdalena Rieb, Brandi Sladek, Kristen Cashin and Heidi LaBash we have a Security Studies Program (SSP) logo (below), and a new motto: Don't Mess With SSP, The Loose Cannons of MIT.



MASSACHUSETTS INSTITUTE OF TECHNOLOGY

And then there were the babies. Magdalena Rieb, my assistant, had daughter Helenka (Helen), Brandi Sladek, our Assistant Director, had daughter Audrey. Then the students took over with Chris Twomey, Daniel Landau, P.R. Goldstone, Michal Ben-Josef Hirsch, and Tim Wolters parenting, respectively, Tessa, Amelia, Samuel, Hagar and Caroline.

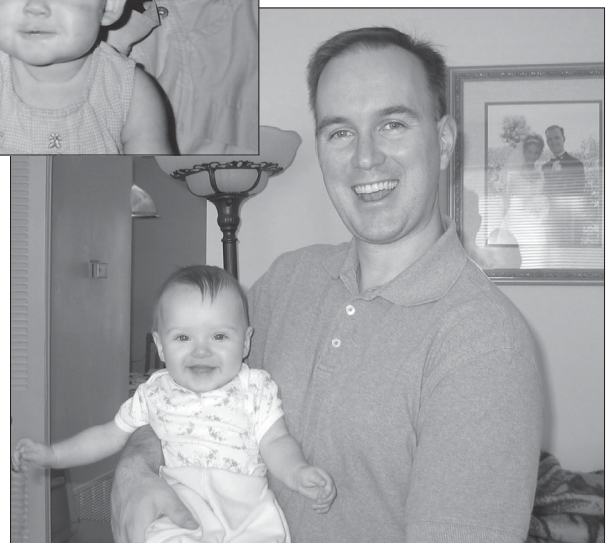
And among the faculty, Steve VanEvera is papa to his third child, Alice.

Of course there were disappointments. The military fellows, no doubt benefiting from the tens of billions of dollars—no, hundreds of billions, the Department of Defense has invested in perfecting PowerPoint presentations, did an outstanding job of offending the faculty at our annual awards dinner/roast. Some have said that they were even a bit funnier than the show's master of ceremonies and amateur comedian, the program's director. (See a sample of their work at the beginning of the faculty section.) And we are losing to another institution Tom Christensen, our colleague for six years, a nationally recognized expert on Chinese foreign policy, and a great teacher and scholar.

We did make some progress this year. Thanks especially to the efforts of Sandy Weiner, but also those of Jean Guillemin, Greg Koblentz, and George Lewis, we organized a number of very informative seminars and workshops on



*counterclockwise, top:  
Magdalena and Helen,  
Brandi and Audrey,  
Tim and Caroline*



bio-terrorism and bio-warfare in separate collaborations with Lincoln Laboratory, the Harvard-MIT Division of Health Sciences and Technology, and the Harvard-Sussex Program on CBW Armament and Arms Limitation. We are running a new summer course in this area for the MIT Professional Institute. We also began to explore ways to strengthen the program in intelligence and in the military's relations with Non-Governmental Organizations. Expect more from us on all of these subjects.





*clockwise, top: Daniel and Amelia,  
Chris and Tessa, PR and Samuel  
(not shown: Michal and Hagar,  
Steve and Alice)*



Protection Board, had asked that we bring together the nation's leading cyber-security experts with academic security studies specialists to consider the strategic implications of potential cyber attacks by nations and terrorist groups. A week after our meeting, Richard announced his departure from government. A connection? Perhaps. In the spring, at the

request of the U.S. Central Command staff, our military fellows convened a working group of graduate students to provide social science informed advice on a possible government for and the societal recovery of a

post-conflict Iraq. With faculty support provided by Richard Samuels and Steve Van Evera, the group produced several reports on an accelerated basis. Student Josh Rovner played an important leadership role in the effort and therefore likely deserves most of the blame for the subsequent trouble that has beset the liberated Iraq.

This year we fulfilled two specific requests for assistance from the government. In January, the Program hosted the first unclassified meeting on strategy for cyberwarfare, which I helped organize. Richard Clarke, the President's Special Advisor on Cyber-security, and the federal government's Critical Infrastructure

Our Technology Group was as busy as ever exploring the limits of ballistic missile defense, the hazards of nuclear waste disposal and desirability of space based weapons. The group also continued its effort to encourage international scientists to work on security issues. It hosted three visitors this year: Qiu Yong from China working on missile defense





*"Turn left at the second traffic light and go three blocks..."*

issues, Alexander Glaser from Germany working on converting nuclear research reactors from high to low enriched fuel, and Abdul Toor from Pakistan researching the feasibility of the Space-Based Laser.

Progress was also made on our favorite governmental boondoggle, the project that makes the average weapon acquisition, comparatively speaking, a very well-managed and frugal endeavor, the infamous Big Dig, the \$15 billion effort to convert downtown Boston's elevated expressway into 17 miles worth of tunnels while traffic and city life flow around the work. Major portions are now open. There have even been a couple of spectacular accidents as the ever-unsafe Boston drivers, unaccustomed to really speeding through the city albeit underground, tried to navigate the maze. The Big Dig's current controversy involves the name for the main section. The state's Republican Governor favors "The Liberty Tunnel." Most Democrat politicians favor The Thomas P. "Tip" O'Neill Tunnel, after the late Cambridge representative and House Speaker, who was the project's main federal sponsor and thus responsible for giving the project a disproportionate

share of the national Highway Trust Fund for years. Tip's son, Thomas P. O'Neill, Jr., is a public relations consultant whose clients include the authority building the tunnel, the project management contractor, the construction company that holds half of the contracts, and the trucking company whose rig was the cause of a major accident that recently closed a big chunk of the system for more than a day, all of whom are in litigation with one another for billions of dollars. The ungrateful public impishly seems to prefer "The Boston Strangler" for the tunnel's name.

Our cover this year, appropriately so on the 100th Anniversary of manned flight, is a depiction of the U.S. Air Force Memorial being built southwest of the Pentagon, on the former site of the Navy Annex. With a different design it had been scheduled to be built north of Arlington National Cemetery near the U.S. Marine Corps Iwo Jima Memorial, but met stiff resistance from the Marine Corps, which worried about visual infringement and tourist competition, despite its sponsors having obtained all necessary Capital District landmark approvals. Those of us who believe interservice competition is beneficial for American security are comforted by the fact that this petty squabbling is taking place nearly twenty years after the passage of the Goldwater Nichols Act, which promised to stifle competition among the armed services and instill the virtue of jointness in the officer corps.

Finally I offer my annual observation about academic organization, surely an oxymoron. My usual effort has been to draw my understanding of the latest SSP Organizational Chart. But continuing reflection on the behavior of academics convinces me that there is no loyalty or group commitment among academics. The best way to put it is that scholarship, though perhaps cumulative, is nearly entirely an individual enterprise. No wonder our motto

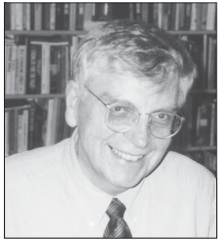
seems so apt. We slide separately along the slippery, swaying deck, sometimes crashing into others and sometimes into each other.

About the only common act is to express our collective appreciation for the kind support of our sponsors: The Carnegie Corporation of New York, The Frankel Foundation, The Ford Foundation, The John D and Katherine T. MacArthur Foundation, The Smith Richardson Foundation, The Draper Laboratory, and the MIT Lincoln Laboratory. We are most appreciative.



*"The Boston Strangler" under construction*

**A**  
♠



**SHEIKH ALI HARVEY  
SAPOLSKY AL-TIKRITI**  
President of the SSP Regime

♥  
**A**

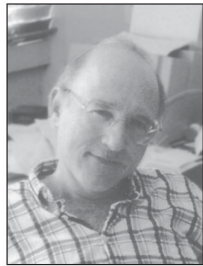
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**MOHAMMED ABU VAN  
EVERA**  
Regime Historian  
and Foreign Minister

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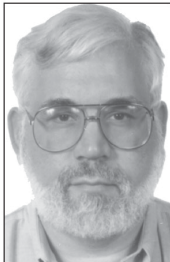
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**BARRY "NOSTRADAMUS" AL-POSEN  
AKA BAGHDAD BARRY**  
Minister of Information

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**A**

**A**  
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**TED AL HUSSAIN  
"GONE" POSTOL**  
Regime Goodwill Ambassador

♥  
**A**

**K**  
♥



**GEORGE IBN LEWIS AL  
MISSEL MISSED**  
Chief Scientist

♥  
**K**

**K**  
♠



**TOM AHMAHD A HIR**  
Fled to NJ

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**J  
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**OWEN "MOSHE" IBN KOTAY  
AKA "THE DENTIST"**  
Minister of War

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**ROOKIE AL-TAKITTI**  
Trusted Advisor to  
Sapolsky al Tikriti

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## FACULTY

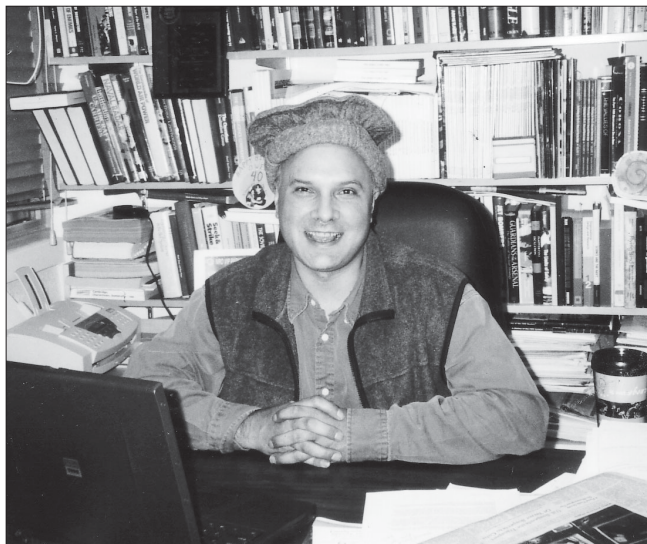
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**HARVEY M. SAPOLSKY** is Professor of Public Policy and Organization in the Department of Political Science and Director of the MIT Security Studies Program. Dr. Sapolsky completed a B.A. at Boston University and earned an M.P.A. and Ph.D. at Harvard University. He has worked in a number of public policy areas, notably health, science and defense and specializes in effects of institutional structures and bureaucratic politics on policy outcomes. In the defense field he has served as a consultant to the Commission on Government Procurement, the Office of the Secretary of Defense, the Naval War College, the Office of Naval Research, the RAND Corporation, Draper Laboratory, John Hopkins' Applied Physics Laboratory and Lockheed Martin, and has been a visiting professor at the University of Michigan and the U.S. Military Academy. He is currently focusing his research on three topics: interservice and civil/military relations; the impact of casualties on U.S. use of force; and the future structure of defense industries. Professor Sapolsky's most recent defense-related book is titled *Science and the Navy*, and is a study of military support of academic research.

**THOMAS J. CHRISTENSEN** is Professor of Political Science at MIT. He formerly was an Associate Professor of Government at Cornell University, an Olin National Security Fellow at Harvard University's Center for International Affairs, and a Social Science Research Council/MacArthur Foundation Fellow in International Peace and Security.

Dr. Christensen received his Ph.D. in political science from Columbia University in 1993, an M.A. in international relations from the University of Pennsylvania in 1987, and a B.A. in history from Haverford College in 1984. Christensen's major research and teaching interests are in the following fields: Chinese foreign policy, East Asian international relations, international security politics, and international relations theory. His published works include *Useful Adversaries: Grand Strategy, Domestic Mobilization, and Sino-American Conflict, 1947-58* (Princeton University Press, 1996) and several articles on topics ranging from China's foreign relations to security alliances in Europe. He has done extensive field research in China.

**OWEN R. COTÉ, JR.** joined the MIT Security Studies Program in 1997 as Associate Director. Prior to that he was Assistant Director of the International Security Program at Harvard's Center for Science and International Affairs, where he remains co-editor of the Center's journal, *International Security*. He received his Ph.D. from



*Owen joins  
the Northern  
Alliance*



MIT, where he specialized in U.S. defense policy and international security affairs. His dissertation, which he is now revising for publication, analyzed the sources of innovative military doctrine, using cases that compared U.S. Navy responses to different Cold War nuclear vulnerability crises. He is also the author of *The Third Battle: Innovation in the U.S. Navy's Silent Cold War Struggle with Soviet Submarines*, a book analyzing the sources of the U.S. Navy's success in its Cold War antisubmarine warfare effort, and a co-author of *Avoiding Nuclear Anarchy: Containing the Threat of Loose Russian Nuclear Weapons and Fissile Material*. He has also written on the future of naval doctrine, nuclear force structure issues, and the threat of WMD terrorism. After graduating from Harvard College and before returning to graduate school, he worked at the Hudson Institute and the Center for Naval Analyses.

**GEOFFREY FORDEN** joined the Security Studies Program in June 2000 as Senior Research Associate. Dr. Forden spent a year on leave from MIT serving as the first Chief of Multidiscipline Analysis Section for UNMOVIC, the United Nations Monitoring, Verification, and Inspection Commission—the agency responsible for verifying and monitoring the dismantlement of Iraq's weapons of mass destruction. Previously, he was a strategic weapons analyst in the National Security Division of the Congressional Budget Office (CBO). Before joining CBO in August 1997, he spent a year as a Science Fellow at Stanford's Center for International Security and Arms Control. During the year at Stanford he performed the first unclassified, independent, technical analysis of the Airborne Laser. Geoff is a physicist by training with degrees from Case Western Reserve University and Indiana University. After getting his Ph.D. in physics, he spent three years in Germany working for England's Rutherford Laboratory. Returning to the U.S., he first spent three years working at Fermi National Laboratory and then seven years as an Assistant Professor of Physics at the University of Arizona. His current research includes the analysis of Russian and Chinese space systems as well as trying to understand how proliferators acquire the know-how and industrial infrastructure to produce weapons of mass destruction.

**DANIEL HASTINGS** is Professor of Aeronautics and Astronautics and Engineering Systems at MIT. He is also co-director of the MIT Technology and Policy Program. He recently served as Chief Scientist of the Air Force. His work has concentrated on issues related to spacecraft-environmental interactions, space propulsion, space systems engineering, and space policy. He has published some 50 papers and a book in the field of spacecraft-environment interactions and several papers on space propulsion and space systems. He has led several national studies on government investment in space technology. He is widely recognized for his work on tethers, plasma contactors and high voltage arcing on solar arrays. He has taught courses and seminars in plasma physics, rocket propulsion, advanced space power and propulsion systems, aerospace policy and space systems engineering. His recent research concentrates on issues of space systems and space policy. He is undertaking research efforts in new design paradigms for space systems, collaborating distributed satellite systems, changing the nature of the space economy and strategic space policy.

**GEORGE N. LEWIS** spent five years as a Research Associate in Cornell University's Department of Applied Physics after receiving his Ph.D. in experimental solid state physics from Cornell's Physics Department in 1983. Prior to coming to MIT in 1989 he was a fellow in the Peace Studies Program at Cornell and at the Center for International Security and Arms Control at

Stanford. His research has included studies of arms control and verification for sea-launched cruise missiles and other non-strategic nuclear weapons, air surveillance and early warning systems, the effectiveness of tactical missiles and of defenses against such missiles and the performance of Patriot in the 1991 Gulf War. Dr. Lewis is now conducting research on a number of issues relevant to ballistic missile defense and deep reductions in nuclear weapons.

**ALLISON MACFARLANE** is a Senior Research Associate at MIT's Security Studies Program. She received her Ph.D. in geology from the Massachusetts Institute of Technology in 1992. She has held the position of Professor of Geology and Women's Studies at George Mason University where she taught a wide variety of geology and environmental courses. In 1996-97 she held a Bunting Science Fellowship at Radcliffe College and a Kennedy School Fellowship at Harvard University where she worked with the Science, Technology and Public Policy group at the Center for Science and International Affairs. From 1997-98 she was a Science Fellow at the Center for International Security and Arms Control at Stanford University. From 1998-2000 she was a Social Science Research Council-MacArthur Foundation Fellow in International Peace and Security at the Belfer Center for Science and International Affairs at Harvard University. She has also served on a National Academy of Sciences panel on the spent fuel standard and excess weapons plutonium disposition. Her research focuses on the issues surrounding the management and disposal of high-level nuclear waste and fissile materials.

**DAVID MINDELL** is a Professor at the MIT Science, Technology and Society (STS) program. He received a B.S. in electrical engineering and a B.A. in literature from Yale University in 1988. He earned his Ph.D. from MIT in 1996 and joined the faculty the same year as an Assistant Professor at the STS program. He was the 2001 MIT MacVicar Faculty Fellow and is a visiting investigator at the Deep Sea Submergence Laboratory, Woods Hole Oceanographic Institution.

Professor Mindell's research focuses on the history of technology, and on technology, archaeology and the deep sea. His most recent book is *Technology, War, and Experience Aboard the USS Monitor*, (Johns Hopkins University Press, 2000). He has two more in the works: *A History of Control Systems: 1916-1945* (working title) (Johns Hopkins University Press); *Technology, Archaeology, and the Deep Sea* (edited with Frederick Hiebert), (Plenum Press).



*Cindy Williams and George Lewis  
chat about the nuclear fuel cycle*

**BARRY R. POSEN** is Professor of Political Science at MIT and serves on the Executive Committee of Seminar XXI, an educational program for senior military officers, government officials and business executives in the national security policy community. He has written two books, *Inadvertent Escalation: Conventional War and Nuclear Risks* and *The Sources of Military Doctrine*, which won two awards: The American Political Science Association's Woodrow Wilson Foundation Book Award, and Ohio State University's Edward J. Furniss Jr. Book Award. Prior to coming to MIT, he taught at Princeton University, and has also been Guest Scholar at the Brookings Institution; Post-Doctoral Fellow at the Center for International Affairs at Harvard; Council on Foreign Relations International Affairs Fellow; Rockefeller Foundation International Affairs Fellow; Guest Scholar at the Center for Strategic and International Studies; and Woodrow Wilson Center Fellow, Smithsonian Institution. Dr. Posen's current activities include research on innovation in the U.S.

Army, 1970-1980, and research on innovation in the French Army, 1918-1940.



*Ted was fooled by their innocent look*

**THEODORE A. POSTOL** is Professor of Science, Technology and National Security Policy in the Program in Science, Technology and Society at MIT. He did his undergraduate work in physics and his graduate work in nuclear engineering at MIT. Since receiving his Ph.D., Dr. Postol has worked at the Argonne National Laboratory, the Congressional Office of Technology Assessment, and has been a scientific adviser to the Chief of Naval Operations. Dr. Postol helped to build a program at Stanford University to train mid-career scientists to study developments in weapons technology of relevance to defense and arms control policy. In 1990 Dr. Postol was awarded the Leo Szilard Prize from the American Physical Society. In 1995 he received the Hilliard Roderick Prize from the American Association for the Advancement of Science and in 2001 he received the Norbert Wiener Award from Computer Professionals for Social Responsibility for uncovering numerous and important false claims about missile defenses.

**RICHARD J. SAMUELS** is Ford International Professor of Political Science and Director of the MIT Center for International Studies. Professor Samuels specializes in comparative politics, political economy, and Asian security affairs. He was a Fulbright scholar in Japan (1977-79, 1983-84, and in 1991-92), and

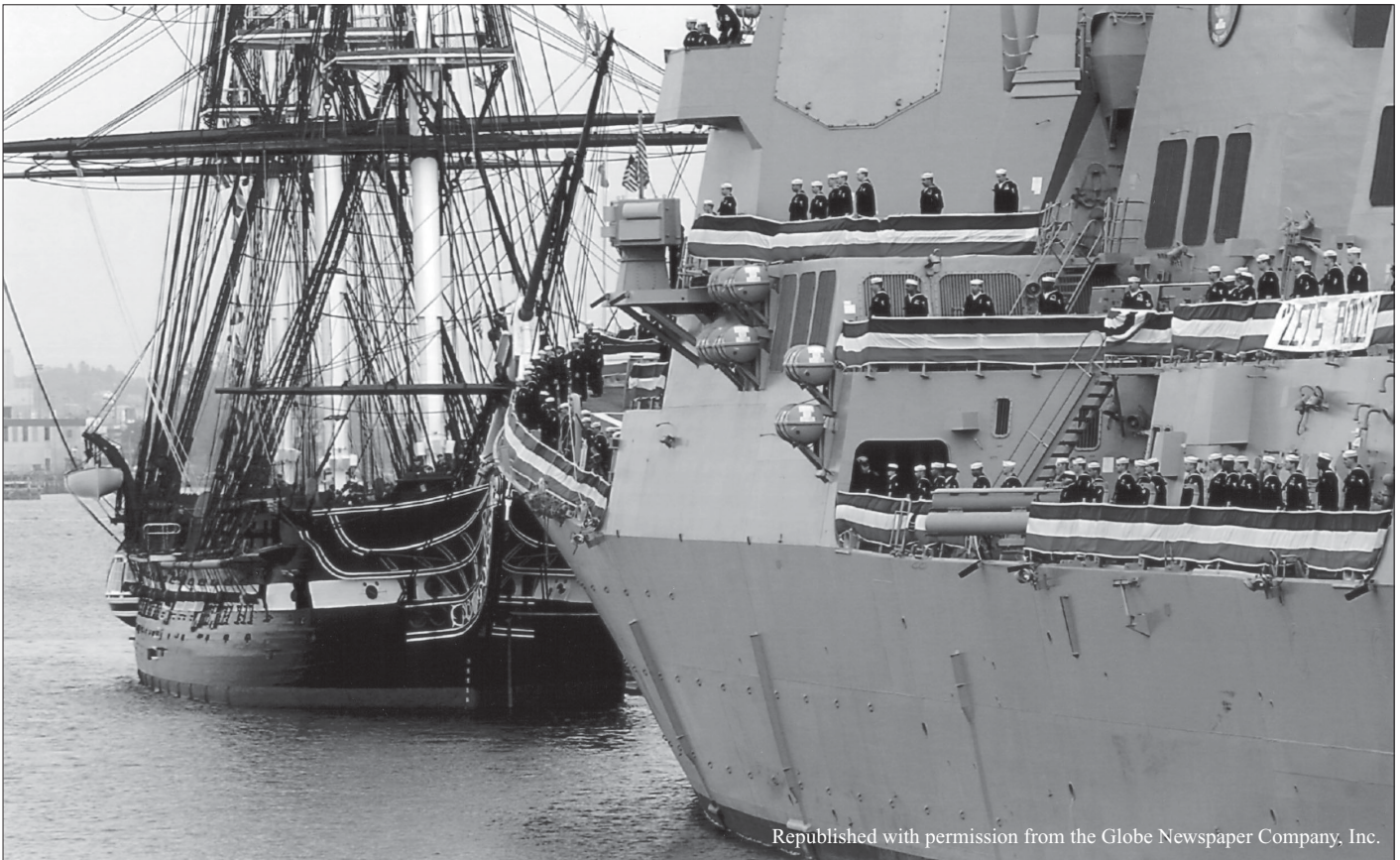
teaches subjects on Japanese politics and public policy, foreign policy, and the comparative politics of business-government relations. He is the author of numerous articles and has written or edited eight books. His 1987 book, *The Business of the Japanese State: Energy Markets in Comparative and Historical Perspective*, won the Ohira Prize. His 1994 book, *Rich Nation, Strong Army: National Security and the Technological Transformation of Japan* (winner of the 1996 John Whitney Hall Prize and the Arisawa Prize) concerned the Japanese technology process, the aerospace industry, and relations between the military and civilian economies. Last year he published *Machiavelli's Children*, a study of political leadership in Italian and Japanese history and *Crisis and Innovation*, a co-edited study of how the Asian economies coped with the 1997 financial crisis. He is Founding Director of the MIT-Japan Program and Chairman of the Japan-U.S. Friendship Commission, an independent federal agency.

**MERRITT ROE SMITH** is the Leverett and William Cutten Professor of the History of Technology and Director of the Program in Science, Technology and Society. His Ph.D. is from The Pennsylvania State University. His research focuses on the history of technological innovation and social change. His book, *Harpers Ferry Armory and the New Technology*, published in 1977, received a number of awards and was nominated for the 1977 Pulitzer Prize in History. Other publications include *Military Enterprise and Technological Change* (1985); *Does Technology Drive History?* (1994), co-edited with Leo Marx; *Major Problems in the History of American Technology* (1998), co-edited with Gregory Clancey; and numerous articles and essays including "Technology, Industrialization, and the Idea of Progress in America" and "Industry, Technology, and the 'Labor Question' in 19th-Century America."

**STEPHEN VAN EVERA** earned his B.A. in government from Harvard and his M.A. and Ph.D. in political science from the University of California at Berkeley. Dr. Van Evera works in several areas of international relations: the causes and prevention of war, U.S. foreign policy, U.S. security policy, U.S. intervention in the Third World, international relations of the Middle East, and international relations theory. He has published books on the causes of war and on social science methodology, and articles on American foreign policy, American defense policy, nationalism and the causes of war, and the origins of World War I. From 1984-1987 he was managing editor of the journal *International Security*.

**CINDY WILLIAMS** is a Principal Research Scientist of the MIT Security Studies Program. Her work at MIT includes an examination of national security choices facing the U.S. and a study of options for reform of military personnel policies. Formerly she was an Assistant Director of the Congressional Budget Office, where she led the National Security Division in studies of budgetary and policy choices related to defense and international security. Dr. Williams has served as a director and in other capacities at the MITRE Corporation in Bedford, Massachusetts; as a member of the Senior Executive Service in the Office of the Secretary of Defense at the Pentagon; and as a mathematician at RAND in Santa Monica, California. Her areas of specialization include the national security budget, command and control of military forces, and conventional air and ground forces. Dr. Williams holds a Ph.D. in mathematics from the University of California, Irvine. She has published in the areas of command and control and the defense budget. She is an elected fellow of the National Academy of Public Administration and a member of the Naval Studies Board, the Council on Foreign Relations, and the International Institute of Strategic Studies. She serves on the Advisory Board of Women in International Security.





*The USS Constitution attends the commissioning of the USS Preble, Boston Harbor, Nov. 9, 2002.*

## AFFILIATES

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### SENIOR ADVISORS

**ROBERT ART** is Christian Herter Professor of International Relations at Brandeis University and a Senior Fellow with MIT SSP. He has taught at Brandeis for over thirty years and is a former Dean of the Graduate School at Brandeis. He co-edits the Cornell Series in Security Studies with Robert Jervis and Stephen Walt and is on the Board of Editors of the journals *International Security*, *Political Science Quarterly*, and *Security Studies*. Professor Art teaches courses in international relations, American foreign policy, national security affairs and the global environment. His published work centers on American foreign policy and national security affairs. Currently he is working on a book on American grand strategy after the Cold War.

**SEYOM BROWN** is Lawrence A. Wien Professor of International Cooperation, Department of Politics, Brandeis University, and Adjunct Professor of International Politics, Fletcher School of Law and Diplomacy. His book, *The Illusion of Control: Force and Foreign Policy in the 21st Century*, was recently published by The Brookings Institution.

**RICK CINQUEGRANA** is currently Legal Counsel to the CIA Inspector General, and, until July 2003, was Deputy Staff Director and Chief Investigative Counsel for the Joint Inquiry by the Congressional Intelligence Committees into September 11th. He has held senior positions in the CIA, Justice Department, a Congressional investigation of technology transfer to China, and a national commission. He is also an adjunct faculty member of the Law School at Catholic University, and has lectured and taught at a number of other universities and organizations.

**JUAN COLE** is Professor of Middle East and South Asian History at the University of Michigan. He grew up in a military family, with two tours in France and one in Ethiopia. He has an MA (1978) in Arabic Studies/ History from the American University in Cairo. He has published *Colonialism and Revolution in the Middle East* (1993), about the 1882 Urabi Revolution that provoked the British colonization of Egypt; he used private expatriate Iranian archives to produce a book in 1998 on 19th Century Iranian millenarianism; and most recently, *Sacred Space and Holy War* (2002), a macro-history of Shi'ite Islamic responses to modernity. He has also published journal articles on the history of Iraq. Since September 11 he has begun writing about contemporary affairs, and has given papers in Tokyo and Honolulu on Muslim crowd politics and the War on Terror. He is currently researching the contemporary history of Muslim radicalism and the possible U.S. responses to it.

**JAMES E. GOODBY** is Distinguished Service Professor, Carnegie Mellon University and Guest Scholar, The Brookings Institution. During his 40-year diplomatic career he was officer-in-charge for nuclear test ban negotiations; vice-chair, U.S. delegation, START I; chief U.S. negotiator for safe and secure dismantlement of nuclear weapons; head U.S. delegation, conference on confidence- and security-building measures in Europe; member, State Department policy planning staff; ambassador to Finland; and political counselor, U.S. mission to NATO. He is author of *Europe Undivided*, a book concerning U.S.-Russian relations that appeared in February 1998.

**JEANNE GUILLEMIN** is a Professor of Sociology at Boston College. Her latest book, *Anthrax: The Investigation of a Deadly Outbreak* (University of California Press, 1999) chronicles the scientific inquiry into the source of the 1979 anthrax outbreak in the closed Soviet city of Sverdlovsk. As a member of the team that pinpointed the military cause of the outbreak, she has been involved in numerous workshops and special presentations, for example, at Livermore, Los Alamos, the New York Council on Foreign Relations, for NATO, USAMRIID, the Hastings Center in New York, and, of course, for the Security Studies Program. She has also written on the U.S. military's troubled anthrax vaccination program (AVIP) inaugurated in late 1997 and on the U.S.-Soviet "Yellow Rain" mycotoxin controversy of the 1980s. Her previous research and writing has been on medical technology. Prof. Guillemin has also been a Congressional Fellow, sponsored by the American Anthropological Association, a NEH Fellow at the Hastings Center in New York, a Bunting Fellow at the Radcliffe Institute, and last year, a fellow at the Dibner Institute for the History of Science and Technology.

**JOYCE LEE MALCOLM** is Professor of History at Bentley College as well as the Founder and Director of the New England Heritage Center at Bentley. Her latest book, *Guns and Violence: The English Experience*, is an analysis of the relationship between guns and violent crime in England. An earlier book, *To Keep and Bear Arms: The Origins of an Anglo-American Right*, was the first full-scale study by a professional historian of the origins of a significant and controversial liberty, the right to be armed.

**DAVID A. ROSENBERG** is a Professor at the National War College. He has held positions at the Office of the Secretary of Defense, the Naval War College, the University of Houston, and Temple University. A Commander in the Naval Reserve, Professor Rosenberg is widely regarded as one of the leading historians of U.S. Cold War naval and nuclear strategies. Currently, Professor Rosenberg is completing a biography of Admiral Arleigh A. Burke, the great hero of the modern Navy.

**ROBERT ROSS** is a Professor of Political Science at Boston College and an Associate at Harvard University's Fairbank Center for East Asian Studies. His research focuses on U.S.-China relations, Chinese foreign policy and Chinese negotiation behavior and he is currently collaborating with the Institute of American Studies at the Chinese Academy of Social Sciences on a project which looks at domestic factors in U.S.-China Relations. His most recent book is *Great Wall and Empty Fortress: China's Search for Security* (W.W. Norton, 1997) with Andrew J. Nathan, and he recently co-edited *U.S.-China Relations 1955-1971: A Reexamination of Cold War Conflict and Cooperation* which will be released soon by Asia Center Press, Harvard University.

**MICHAEL SCHRAGE** is co-director of the MIT Media Lab's eMarkets Initiative where he oversees research in the design and diffusion of market mechanisms in networks. His ongoing work focuses on the economics and ethology of models, prototypes and simulations in managing innovation and risk. His book, *Serious Play* (Harvard Business School Press 2000), explores these issues and has been widely adopted as a text in many graduate business and design programs.

Mr. Schrage is a member of the advisory board of the *Sloan Management Review*, a columnist for *Technology Review* and a member of the board of directors of Ticketmaster. He has



been a lecturer for the Security Studies Professional Program on Innovation and has been an invited lecturer at the National Defense University and an advisor to DMSO. His particular national security interest centers around the cultural and economic conflicts between ‘prototype-driven’ and ‘requirements-driven’ design and procurement of weapons systems.



*Moving out of Saudi Arabia*





*B-52 chop-shop in the desert*

## MILITARY FELLOWS



*SSP Military Fellows Farris, Whisenhunt and Brewington, taking a break from their powerpoint training*

### **LIEUTENANT COLONEL B. DON FARRIS, USA**

*Army Senior Service College Fellow*

LTC Farris is an infantry officer in the United States Army and a native of Lone Star, Texas. Prior to his fellowship at SSP, LTC Farris served as a Senior Task Force Observer/Controller at the Joint Readiness Training Center at Fort Polk and Commander of 1<sup>st</sup> Battalion, 505<sup>th</sup> Parachute Infantry Regiment, 82<sup>nd</sup> Airborne Division, Fort Bragg.

He is a 1983 graduate of the United States Military Academy and holds a Masters of Military Arts and Science from the Army Command and General Staff College, Fort Leavenworth, Kansas. He is married with three children.

### **LIEUTENANT COLONEL MARY WHISENHUNT, USAF**

*United States Air Force Fellow*

Prior to her fellowship with us, Lt. Col Whisenhunt served as Commander, Air Combat Command Intelligence Squadron. She has served in the Air Force for 20 years, having entered as an airman in 1983. Over her career she has served in many roles, such as a military journalist, political-military intelligence analyst, modernization planner, systems analyst, and squadron commander.

Lt.Col. Whisenhunt has a Master of Science degree in international relations from Webster University in St. Louis, MO. She is a native of Wisconsin and is married to Lt.Col. John Whisenhunt of Columbia, Missouri.

### **COLONEL BROOKS BREWINGTON, USMC**

*Commandant of the Marine Corps Fellow*

Colonel Brewington enlisted in the Marine Corps in 1972. His assignments have included Platoon, Company Commander and Operations Officer in various Infantry Battalions, Commanding Officer of Fleet Anti-Terrorist Company, Rifle Company Commander during Desert Storm, and Operations Officer for the 24 Marine Expeditionary Unit Special Operations Capable (participating in Operation Joint Guardian, Southern Watch and Desert Thunder) to name a few.

Col. Brewington received his Masters Degree in Military Studies from the Marine Corps Command and Staff College.

## RESEARCH FELLOWS

**PETER DUFFY** is a senior manager at the Naval Undersea Warfare Center (NUWC) in Newport, Rhode Island. NUWC operates the Navy's laboratory for research, development, test and evaluation, and fleet support of undersea submarine systems. During his career Mr. Duffy has held several acquisition and line management positions including: Lightweight Torpedo Program Manager, Head of the Missile Systems Division, Head of the Missile and Platform Systems Department and Director of Strategic Planning. Mr. Duffy served in the U.S. Navy from 1973–1977 as a Deep Sea Diver at the fleet ballistic missile submarine base in Holy Loch, Scotland. He earned a B.S. in mechanical engineering in 1983 from the University of Massachusetts, Amherst and a M.B.A. from the Massachusetts Institute Technology in 2000. He is an Alfred P. Sloan Fellow. He is also a 1990 graduate of the Program Managers Course at the Defense Systems Management College, Ft. Belvoir, Virginia.

**ALEXANDER GLASER** is a physicist by training and holds a 2-year fellowship from the Social Science Research Council in the Global Security and Cooperation Program with which he will complete his doctoral thesis (Darmstadt University of Technology (TUD), Germany) entitled “Uranium and Nuclear Weapons Proliferation.” Initiated and supported by the Interdisciplinary Research Group in Science, Technology and Security (IANUS) at TUD, Alexander finished his diploma thesis on weapons plutonium elimination in 1998. He supported several projects of the IANUS group mostly related to technical aspects of arms control and nonproliferation. In particular, his work concentrated on the proliferation resistance of nuclear facilities and fuel cycles. Within this context, Alexander has been a technical advisor to the German Federal Environment Ministry during 2000 and 2001, in particular, preparing a report on the research reactor FRM-II.

**LISBETH GRONLUND** is a Senior Staff Scientist at the Union of Concerned Scientists, a public interest research group based in Cambridge, MA. After receiving her Ph.D. in theoretical physics from Cornell University in 1988, she made her first foray to MIT SSP, spending two years as a postdoctoral fellow. She then became a senior visiting scholar in the Center for International Security Studies at the University of Maryland, College Park, and is currently on the Executive Committee of the American Physical Society's Forum on Physics and Society. Dr. Gronlund's research has focused on technical aspects of arms control, and she has written on the issues of depressed-trajectory ballistic missiles, space-based and ground-based ballistic missile defenses, and the proliferation of ballistic missiles. She is currently carrying out a study, with other members of the MIT SSP Technical Working Group, on the implications of advanced theater missile defenses for the ABM Treaty.

**ABDUL HAMEED TOOR** received his Ph.D. in theoretical Laser physics in 1996 from Quaid-i-Azam University, Islamabad followed by a two year postdoctoral research associate position at the Department of Physics, Texas A & M University. Since 1998 he has been an Assistant Professor in the Department of Electronics at Quaid-i-Azam University. His current work at MIT is on Theater Missile Defense in South Asia.

**DAVID WRIGHT** is a Senior Staff Scientist at the Union of Concerned Scientists and a research fellow in the Security Studies Program at MIT. Previously he was a SSRC-MacArthur Foundation Fellow in International Peace and Security at Harvard's Center for Science and International Affairs, and a senior arms control analyst at the Federation of American Scientists. His current



research includes ballistic missile defenses and technical analysis of ballistic missile development programs. He has also written on international fissile material controls, estimates of Chinese production of plutonium for weapons, and depressed-trajectory ballistic missiles. He served on the Social Science Research Council Committee on International Peace and Security and is currently an associate editor of *Science and Global Security*. Wright received his Ph.D. in physics from Cornell University in 1983.

**SANFORD WEINER** is a policy analyst focusing on technology and organizational change in the chemical, health and defense industries. Currently he is working on comparative studies of defense and civilian innovation, including the JSTARS radar plane. He is also looking at cross-national responses to health and environmental risks. Mr. Weiner has previously been on the research staffs at the School of Public Policy, University of California/Berkeley, the Heller School at Brandeis University, and two other policy research centers at MIT. He currently manages the MIT Professional Course "Promoting Innovation: Organizations and Technology."

**QIU YONG** joins our program through January 2003. He comes from China where he received his degree in 1993 from the Department of Mechanics at Tianjin University. He then joined the China Academy of Engineering Physics (CAEP) to become one of the technical staff. Since then, he has been working for CAEP on the trajectory of re-entry vehicles and aerodynamics. He attended the Shanghai Summer Symposium on Science and World Affairs in 1999, which became the starting point of his interest in arms control studies. His research now is focused on missile defense.

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**EUGENE GHOLZ** is Assistant Professor at the University of Kentucky's Patterson School. His work primarily concerns defense management and the creation of national power. Specific questions include how the government should decide what weapons to buy, how and when to stimulate technological innovation, and how to manage business-government relations, especially in high technology, from both business and government perspectives. During the 1998-99 academic year, Dr. Gholz taught in George Mason University's International Commerce and Policy Program. Prior to that, he was a national security fellow at Harvard University's Olin Institute of Strategic Studies. He received his Ph.D. from the MIT Department of Political Science.

## RESEARCH AFFILIATES

**DARYL PRESS** is Assistant Professor of Government at Dartmouth College. His research focuses on U.S. foreign policy, crisis decision-making, military forces and operations, and the connections between economics and war. Professor Press is finishing a book manuscript that examines the effects of a country's actions in one crisis on its credibility in future crises. In other projects, he is finishing an article with Prof. Eugene Gholz on the effects of wars on oil prices. Professor Press is also a consultant at the RAND Corporation where he has worked on many studies relating to U.S. military planning in the Persian Gulf region and Korea.



**LAURA REED** received her Ph.D. in Political Science from the Massachusetts Institute of Technology in February 1995, and was an Assistant Professor at Wellesley College during the spring semester of 1995. Formerly a program officer for the Committee on International Security Studies (CISS) at the American Academy of Arts and Sciences, she has edited CISS volumes including: *Lethal Commerce: The Global Trade in Small Arms and Light Weapons* (with Jeffrey Boutwell and Michael Klare), *Collective Responses to Regional Problems: The Case of Latin America and the Caribbean* (with Robert Pastor and Carl Kaysen), and *Emerging Norms of Justified Intervention* (with Carl Kaysen). Her current research examines the feasibility of a United Nations military force.

**JORN SILJEHOLM** holds a Ph.D. in environmental chemistry, risk analysis and toxicology from the University of Oslo. He served as a weapons inspector in Iraq with the United Nations (UNMOVIC) from 2002-2003. Affiliated with SSP since 1994, he spent the four previous years at MIT's Center for Technology, Policy and Industrial Development, and was primary initiator and fundraiser for the MIT Chlorine Project, begun in 1991. He served as environmental chemist and environmental advisor for Esso Norway refineries, advisor to CONCAWE, the European oil companies' joint research organization, and Executive Vice President for Communications at Norway's largest finance company, Storebrand. He was executive director of aturevernforbundet, the Norwegian Society for the Conservation of Nature, and chaired the Norwegian Research Organization for Pharmacology and Toxicology. Leading up to the 1992 UN Conference on Environment and Development, he authored the statement of non-governmental organizations.



*Jorn couldn't find the WMD either*

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**EMERITI** **CARL KAYSEN** is David W. Skinner Professor of Political Economy Emeritus in the Program in Science, Technology, and Society and a Senior Lecturer at the MIT Center for International Studies. Dr. Kaysen earned his B.A. in Economics at the University of Pennsylvania, and his Ph.D. at Harvard University, where he was an economics professor from 1950-1966. From 1966 until 1976, when he came to MIT, he was Director of the Institute for Advanced Study at Princeton and from 1961-1963 he was the Deputy Special Assistant for National Security Affairs to President Kennedy. He has served as a consultant to RAND, the Defense Department, and the CIA. Chairman of the Committee on Security Studies of the American Academy of Arts and Sciences, Dr. Kaysen is currently engaged in a series of studies under the auspices of the Committee on the role of international law and international norms in providing peace and security.

**MARVIN M. MILLER** recently retired from the position of Senior Research Scientist in the Department of Nuclear Engineering at MIT. He is now a Research Affiliate at the MIT Center for International Studies and the Department of Nuclear Engineering. After undergraduate work at the City College of New York, he received an M.A. in Physics from the University of Rochester and a Ph.D. in Electrical Engineering from the Polytechnic Institute of New York. Prior to joining MIT in 1976, Dr. Miller was an Associate Professor of electrical engineering at Purdue University conducting research on laser theory and applications. At MIT his research has focused on arms control, particularly nuclear proliferation, and the environmental impacts of energy use. In the proliferation area, his major interests are the Middle East and South Asia; he has also worked on such issues as international safeguards and export controls on sensitive nuclear technologies, the disposition of plutonium from retired nuclear weapons, and the proliferation implications of foreign nationals studying at U.S. universities. From 1984 to 1986, Dr. Miller was a Foster Fellow with the Nuclear Weapons and Control Bureau of the U.S. Arms Control and Disarmament Agency, and is currently a consultant on proliferation issues for the State Department and the Argonne National Laboratory.

**GEORGE W. RATHJENS** became Professor in the Department of Political Science after service with the Institute for Defense Analyses, the U.S. Arms Control and Disarmament Agency, the Advanced Research Projects Agency of the Department of Defense, the Office of the President's Science Advisor, and the Weapons Evaluation Group of the Department of Defense. He has also served in the Department of State. Dr. Rathjens received his B.S. from Yale University and completed his Ph.D. in chemistry at the University of California at Berkeley. He has been active in a number of associations, including the Council for a Livable World and the Federation of American Scientists both of which he has been Chairman. He is now secretary-general of the Pugwash Conferences on Science and World Affairs. Dr. Rathjens' major policy interests are nuclear arms issues, environmental problems, with special emphasis on conflict and the environment, and post-Cold War international security questions, including particularly problems of intervention in instances of ethnic and intrastate conflict.

**JACK RUINA** is Professor Emeritus of Electrical Engineering. Dr. Ruina was an undergraduate at the City College of New York and did his graduate work at the Polytechnic Institute of Brooklyn, earning his MEE and DEE there. He has been granted the Outstanding Alumnus Award from both colleges. He taught at Brown University and the University of Illinois; at the latter he also headed the Radar Division of the Control System Laboratory. While on leave from the University of Illinois, he served in several senior positions at the Department of Defense, the last being Director of the Advanced Research Projects Agency and was honored with the Fleming Award for being one of ten outstanding young men in government in 1962. He served on many government committees including a presidential appointment to the General Advisory Committee, 1969-1977, and acted as Senior Consultant to the White House Office of Science and Technology Policy, 1977-1980. He also held the post of President of the Institute for Defense Analyses. At MIT, he has held the position of Vice President for Special Laboratories and was Secretary of the MIT Faculty. Dr. Ruina remains an honorary member of the Board of Trustees for The MITRE Corporation. He was instrumental in establishing the Security Studies Program and was its first Director. Dr. Ruina's special interest is in strategic weapons policy.

## SEMINAR and DINNER SERIES

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### SSP WEDNESDAY SEMINAR SERIES FALL 2002

The Security Studies Wednesday Seminar Series provides a forum for discussing current security topics and the varying disciplinary perspectives on security studies. This is the Program's primary seminar series, held in the traditional Wednesday 12-noon timeslot. Summaries of this series are posted electronically at our website: <http://web.mit.edu/ssp>

September 18

#### **Into Tibet: An Early CIA Connection**

Thomas Laird  
Freelance Writer and Photographer

October 30

#### **State Sovereignty and Territory**

Thomas Biersteker, Director  
Watson Institute, Brown University

September 25

#### **Organizational Change in Uncertain Times: The U.S. Military and Millennium Challenge 2002**

Donald Chisholm, Professor  
Naval War College

November 6

#### **U.S. Security Strategy in East Asia**

RADM Michael McDevitt, USN (ret), Director  
Center for Strategic Studies, CNA Corporation

October 2

#### **The 11 Days of Christmas**

Marshall Michel, Ph.D. Candidate  
Auburn University

November 13

#### **The USS Pueblo Incident**

Mitchell Lerner, Professor  
Ohio State University

October 9

#### **The British Army and the Conduct of Warfare, 1914-1918**

Ian Beckett, Visiting Professor  
U.S. Marine Corps University

November 20

#### **NATO Expansion**

Wade Jacoby, Professor  
Brigham Young University

October 16

#### **Where in the World is the US Army?**

BG Daniel Kaufman, USA  
Dean, U.S. Military Academy

December 4

#### **Preventing Nuclear Terrorism**

Graham Allison, Director  
Belfer Center, Harvard University

October 23

#### **Can the United States Bring Peace to the Middle East?**

Jeremy Pressman, Fellow  
Belfer Center, Harvard University

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February 12

**Coercive Diplomacy: What Do We Know?**

Robert J. Art, Professor  
Brandeis University

February 19

**Competing for Foreign Military Contracts:  
The Financial Connection**

Peter Evans, Ph.D. Candidate  
Dept. of Political Science, MIT

February 26

**Terrorist Campaigns: What Can Deterrence  
Contribute to the War on Terror?**

Brad Roberts, Research Member  
Institute for Defense Analyses

March 5

**Transforming the Navy's Surface Combatant  
Force**

Eric Labs, Principal Analyst  
Naval Weapons and Forces  
Congressional Budget Office

March 12

**Regional Ramifications of an American  
Attack on Iraq**

Efraim Inbar, Professor  
Begin-Sadat Center for Strategic Studies

April 2

**Blood, Oil and SUVs**

Mike Lynch  
Managing Director  
Strategic Energy & Economic Research, Inc.  
and  
Daniel Landau  
Ph.D. Candidate  
Dept. of Political Science, MIT

April 9

**Technology and Defense Transformation**

Elihu Zimet, Senior Research Fellow  
National Defense University

April 16

**Taking Nanotechnology from the Lab to the  
Soldier: The ISN**

Edwin Thomas, Professor  
Dept. of Materials Science and Engineering MIT;  
Director of the Institute for Soldier  
Nanotechnologies

April 23

**An Iraqi Post Mortem**

Lt. Gen. Bernard Trainor, USMC (ret.)  
Senior Fellow, Council on Foreign Relations

May 14

**The 1964 Gilpatric Committee and Origins  
of America's Counterproliferation Policy**

Frank Gavin, Professor  
University of Texas

**SSP WEDNESDAY  
SEMINAR SERIES  
SPRING 2003**



## SEMINAR and DINNER SERIES

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### SPECIAL SEMINARS

Our Special Seminar series offers the program the opportunity to hear on short notice from specialists on current issues. Often the session is co-sponsored by one of our working groups and stems from the group's research interest.

October 25

#### **Assessing China's Ambitions in East Asia**

Paul Heer, Senior China Analyst  
CIA

May 15

#### **Humanitarians on the Sidelines: Challenges of Multilateralism in Iraq**

Raymond Offenheiser, President  
Oxfam America

January 13

#### **Middle East Regional Security Assessment: A Jordanian Perspective**

Dr. Abdullah Toukan, Former Science Advisor to  
King Hussein of Jordan

July 1

#### **Problems in Estimating Biowarfare/ Bioterrorism Capabilities and Threats**

Sanford Weiner, Research Affiliate  
MIT Security Studies Program

February 10

#### **Iraq, North Korea and U.S.-China Security Relations**

Shen Dingli, Professor  
Fudan University, Shanghai, China

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### STAR SERIES SEMINARS

This series offers the program an opportunity to hear from senior government officials and military officers.

February 6

#### **Iraq, North Korea and U.S.-China Security Relations**

Ambassador Robert Gallucci, Dean  
Walsh School of Foreign Service, Georgetown  
University; Former Deputy Executive Chairman of  
UNSCOM  
*Co-sponsored with the Center for International  
Studies*

June 25

#### **Yellow Smoke: American Warfare Transformed**

Gen Robert Scales, USA (ret.)  
Former Commandant, Army War College

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This series reviews America's War on Terrorism.

**AMERICA'S  
NEW WAR**

September 11

**The War on Terror One Year Later**

Faculty of the MIT Security Studies Program

March 19

**Iraq War II Update**

Faculty of the MIT Security Studies Program

April 11

**Iraq Findings and Analysis: Chemical and  
Multidisciplinary Weapons**

Jorn Siljeholm

Weapons Inspector, UNMOVIC and

Research Affiliate, MIT Security Studies Program

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This series highlighted different aspects of modern U.S. military capabilities, with special attention on U.S. operations in the war against Iraq.

**FORCE  
ANALYSIS  
SERIES**

October 25

**Army Engineers: Capabilities and  
Contributions to Today's Army**

Col. Greg Martin, USA

130 Engineer Brigade, USA Europe

December 5

**Warfare from the Company Commanders'  
Perspective**

Col. Brooks Brewington, USMC, Military Fellow

Lt. Col. Billy Don Farris, USA, Military Fellow

MIT Security Studies Program

November 11

**Marine Expeditionary Warfare**

Col. Brooks Brewington, USMC, Military Fellow

MIT Security Studies Program

December 12

**Missile Defenses in a Possible War in Iraq**

Technology Group

MIT Security Studies Program

November 15

**The Implications of Accuracy in Modern  
Military Operations**

Theodore Postol, Professor

MIT Security Studies Program

December 13

**Campaign Analysis and the Coming War**

Daryl Press, Assistant Professor

Dartmouth College

November 22

**The U.S. Army Vision: Quantifying  
Capabilities and Readiness**

Lt. Col. Billy Don Farris, USA, Military Fellow

MIT Security Studies Program

December 20

**Analyzing Foreign Military**

CIA Group

## SEMINAR and DINNER SERIES

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### BIOTERRORISM SERIES

SSP co-sponsored two Bioterrorism/Biowarfare series. The first series was done in conjunction with the Harvard-MIT Division of Health Sciences and Technology.

February 2

#### **Introduction to Bioterrorist Agents and Medical Response**

Dr. Sharon Wright, Director  
Hospital Epidemiology, Division of Infectious  
Disease, Beth Israel Deaconess Medical Center

February 2

#### **Policy and Organizational Issues**

Sanford Weiner, Research Affiliate  
MIT Security Studies Program

February 20

#### **The 2001 Postal Anthrax Letter Attacks**

Jeanne Guillemin, Professor  
Boston College

March 5

#### **Security Countermeasures: A Role for the Biomedical Engineer/Scientist?**

Jeffrey Borenstein, Director  
Biomedical Engineering Center, Draper Laboratory;  
Associate Director, Center for Integration of  
Innovative Medicine and Technology

March 13

#### **Biological Warfare: The Political Science Perspective**

Gregory Koblentz, Ph.D. Candidate  
Dept. of Political Science, MIT

March 27

#### **Smallpox: From Eradicated Disease to Bioterrorism Threat**

Jonathan Tucker, Senior Fellow  
U.S. Institute of Peace; Former Director, Chemical  
and Biological Weapons Nonproliferation Program,  
Monterey Institute

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This series was done in conjunction with Harvard University's Belfer Center and the Harvard Sussex Program on CBW Armament and Arms Limitation.

**BIOWARFARE  
SERIES**

March 20

**The Uncertainly Horrifying Prospect of  
BW: International Risks, Responses and  
Dilemmas**

Paul Schulte, Director  
Proliferation and Arms Control, UK Ministry  
of Defence

March 20

**The Legacy of Hiroshima**

Thomas Schelling, Distinguished Professor  
University of Maryland; Professor Emeritus,  
Harvard University

April 3

**Biological Weapons in the International  
System: Future Prospects**

Ambassador Donald Mahley  
Acting Deputy Assistant Secretary, Multilateral and  
Conventional Arms Control, U.S. Dept. of State

April 17

**The Future of the Chemical Weapons Ban**

Robert Mikulak, Director  
Office of Chemical and Biological Weapons  
Conventions, Bureau of Arms Control  
U.S. Dept. of State

April 24

**Making Threats: The History of the British  
Biological Weapons Programme**

Brian Balmer, Senior Lecturer in Science Policy  
University College, London

May 1

**Controlling Pathogens: Prospects for Export  
Controls on Biological Agents**

Elisa Harris, Research Fellow  
Center for International and Security Studies  
University of Maryland

May 22

**Changing Perceptions of Biological Warfare:  
From the First and the Second Edition of  
the World Health Organization Manual**

Julian Perry Robinson, Professorial Fellow  
SPRU-Science and Technology Policy Research,  
University of Sussex, England; Co-Director,  
Harvard Sussex Program



## SEMINAR and DINNER SERIES

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### TECHNICAL SEMINARS

MIT SSP organizes the Technical Seminars as a means of bringing together the researchers in the Cambridge area working on technical aspects of arms control and security policy. These seminars emphasize presentations about technical work-in-progress by local researchers, with occasional seminars by outside speakers, and are often held as dinner meetings.

September 26

#### **Informal Discussion on Iraq's Weapons Capability**

William Scott Ritter, Jr., Former Chief Inspector  
UN Special Commission

October 10

#### **Deployment of Nuclear Weapons and Early Warning in South Asia**

Ramana V. Mani, Researcher  
Program in Global Security  
Princeton University

October 31

#### **Non-Proliferation Trust**

Thomas B. Cochran, Nuclear Program Director  
Natural Resource Defense Council

November 7

#### **Nuclear Energy and its Competitors in Mitigating Climate Change**

Robert Williams, Senior Scientist  
Princeton's Environmental Institute

November 21

#### **Space-Based Interceptors**

Qiu Yong, Research Fellow  
MIT Security Studies Program

December 5

#### **Technology of Boost Phase Missile Defense**

David Mosher, Senior Nuclear Analyst  
RAND's National Security Research Division

February 13

#### **A Physicist's Guide to the Landmine Problem: Theory and Experiment**

Peter Weichman, Senior Scientist  
ALPHATECH, Inc.

March 18

#### **The North Korean Nuclear Program: Technical and Policy Issues**

Robert Alvarez, Senior Scholar  
Institute for Policy Studies  
and  
Yo Taik Song, Former Visiting Research Fellow  
Korea Atomic Energy Research Institute

March 31

#### **Radiological Terrorism and Radioactive Source Security**

Charles Ferguson, Scientist-in-Residence  
Center for Nonproliferation Studies  
Monterey Institute

April 10

#### **Atoms for Peace: Ending the Use of Highly Enriched Uranium in the Nuclear Fuel Cycle: Options, Perspectives and Challenges**

Alex Glaser, Visiting Fellow  
MIT Security Studies Program

April 24

#### **Cleanup at the DOE Weapons Complex**

John Ahearne, Director  
Ethics Program, Sigma XI - The Scientific  
Research Society

This series provides an opportunity for our military visitors to explain weapon developments within their service. It provides the non-professional with an introduction to the professional's tools.

October 21

**UAVs Today and UAVs in the Future**

Col. Ed Boyle, USA (ret.), Deputy Director  
Plans and Programs, Command Solution Operation,  
SAIC

February 13

**Defense of the U.S. Skies**

Lt.Col. John Whisenhunt, USAF  
Chief of Current Intelligence, Continental North  
American Aerospace Defense Command



*COL Kevin Benson  
(2001-02 Army Fellow) in Kuwait*

## SEMINAR and DINNER SERIES

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Each year, SSP Faculty and Fellows give a series of talks and classes at two defense research facilities: Draper Laboratory in Cambridge, MA and, MIT's Lincoln Laboratory in Lexington, MA.

### DRAPER LAB TALKS

July 29

#### **Issues in Missile Defense**

Theodore Postol, Professor  
MIT Security Studies Program

June 3

#### **The North Korea Nuclear Problem and U.S.-China Relations**

Thomas Christensen, Professor  
MIT Security Studies Program

### LINCOLN LAB TALKS

December 20

#### **The Islamist Movement in Pakistan and the October 2002 Elections: Implications for the War on Terror**

Juan Cole, Professor  
University of Michigan

April 4

#### **Technology R&D: Some Lessons from History**

David Mindell, Professor  
Science, Technology and Society Program, MIT

February 21

#### **Japan/North Korea**

Richard Samuels, Professor and Director, Center  
for International Studies, MIT

For several years the MIT Security Studies Program, in conjunction with The Olin Institute and the Belfer Center for Science and International Affairs at Harvard, has presented the Future of War dinner series on the belief that war does indeed have a future.

November 13

### **U.S. Response to Global Security Challenges**

MIT Faculty Club, Cambridge, MA

Lincoln P. Bloomfield Jr., Assistant U.S. Secretary of State for the Bureau of Political-Military Affairs spoke on the Western Alliance and the effort to contain Iraq. Secretary Bloomfield reviewed the discussions with allies and within the government to gain a common perspective on Iraq's defiance of UN

resolutions. In the audience was Professor Emeritus Lincoln P. Bloomfield of MIT, our political science colleague and himself a longtime participant in the making of U.S. foreign policy.

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April 17

### **The Tenth Annual General James H. Doolittle Conference: Space and Security**

MIT Faculty Club, Cambridge, MA

**GENERAL  
JAMES H.  
DOOLITTLE  
DINNER**

This year, the hundredth anniversary of manned flight, our dinner speaker and Doolittle award recipient was Alex Roland, the noted military historian. Professor Roland is professor of history at Duke University, a graduate of the U.S. Naval Academy, the University of Hawaii, and received his doctorate from Duke University. He has been a Dibner Fellow at MIT, president of the Society for the History of Technology, a historian at NASA, and a visiting professor at both the Army War College and the U.S. Naval Academy. His most recent book was *Strategic Computing: DARPA and the Quest for Machine Intelligence*, (MIT Press, 2002).

Professor Roland in his keynote talk reviewed America's military, economic, technological and cultural involvement with manned flight. Aviation is linked closely with the American era as the source and expression of American power, according to Roland.

The Doolittle Award commemorates the achievement of Jimmy Doolittle, American war hero, aviation pioneer, businessman, and MIT graduate (SM '24, PhD '25).



## CONFERENCES and WORKSHOPS

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January 22

### **Cyberwarfare Conference**

MIT Faculty Club, Cambridge, MA

This conference explored ways of improving strategic thinking on information/cyberwarfare to create a sustained dialogue and research agenda on the topic. It was based on the belief that an independent dialogue between technology and security studies specialists on the dangers and opportunities of information warfare, and cyberwarfare, specifically, would benefit all. The event's keynote speaker was Richard Clarke, Special Advisor to the President for Cyberspace Security. Guests included cybersecurity experts in government, private and public sectors.

June 10

### **Bioterrorism Preparedness: A Conference for Senior Practitioners and Professionals**

Kennedy School of Government  
Harvard University

The threat of bioterrorism — made tangible by anthrax attacks (real and false alarms), the smallpox vaccination program, and the analogues of emergent infectious diseases like West Nile virus and SARS — poses major issues for government and the health care system. Many policies and response strategies remain uncertain, and financial resources and organizational capabilities are often problematic. This conference was aimed at concerned senior practitioners in New England — policy officials, managers, and professionals — not only from public health and emergency medicine but also from public safety and emergency management agencies. Conference speakers who included academics and leading practitioners, discussed research findings and operating experiences on a range of critical bioterrorism preparedness topics. The conference was co-sponsored with Lincoln Laboratory.

## FIELD TRIPS

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October 11

### **Tour of the USS Hue City (CG66)**

Port Visit, Boston, MA

March 7

### **Naval Undersea Warfare Center**

Newport, RI

March 31

### **Army Joint Readiness Training Center**

Ft. Polk, LA



*F-22s visit the Rockies*

## PUBLICATIONS

### PROGRAM PUBLICATIONS

### MIT SECURITY STUDIES CONFERENCE SERIES

### MIT SECURITY STUDIES WORKING PAPERS

“National Security Space Policy in the U.S. and Europe: Trends and Choices,” by Eugene Gholz is a summary of a MIT Security Studies General James H. Doolittle Conference of the same title held on April 22-23, 2002 at the MIT Faculty Club, Cambridge, MA.

Michael Schrage, “Perfect Information and Perverse Incentives: Costs and Consequences of Transformation and Transparency,” SSP Working Paper WP03-1, May 2002.



## BREAKTHROUGHS

VOL. XII, NO. 1 SPRING 2003

Harvey Sapolsky, "War Needs a Warning Label"

George N. Lewis, "How the U.S. Army Assessed as Successful a Missile Defense that Failed Completely"

Vanda Felbabova, "Getting Hooked: The Insurgency/Drug Nexus"

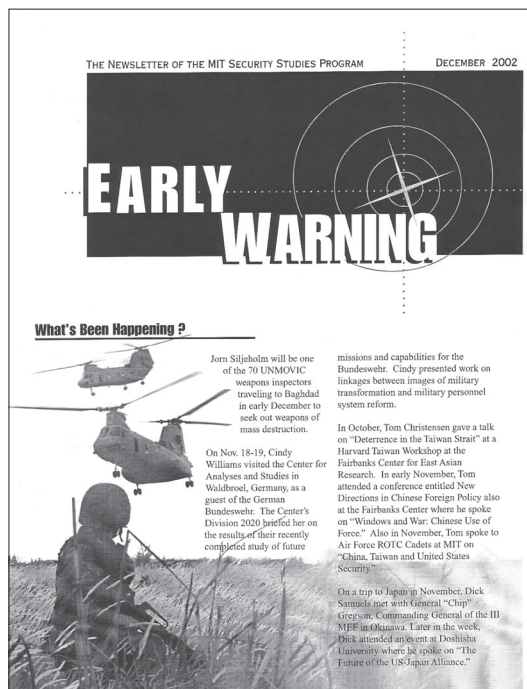
Heather S. Gregg, "Divided They Conquer: The Success of Armenian Ethnic Lobbies in the U.S."

Michael A. Glosny, "Mines Against Taiwan: A Military Analysis of a PRC Blockade"

Faculty Spotlight: Allison Macfarlane

## EARLY WARNING

SSP Newsletter, produced eight times per year.



## BREAKTHROUGHS

SPRING 2003

VOL. XII, NO. 1



War Needs a Warning Label  
*Harvey M. Sapolsky*

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How the U.S. Army Assessed as Successful  
a Missile Defense that Failed Completely  
*George N. Lewis*

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Getting Hooked:  
The Insurgency/Drug Nexus  
*Vanda Felbabova*

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Divided They Conquer: The Success of  
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Mines Against Taiwan: A Military Analysis  
of a PRC Blockade  
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Also in this issue: Faculty Spotlight: Allison  
Macfarlane; SSP Recent Publications;  
Conferences; and Summer 2003 Courses

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**MITSSP**

Security Studies Program  
Massachusetts Institute of Technology



## PUBLICATIONS

### FACULTY AND AFFILIATE PUBLICATIONS

Robert Art, *The Use of Force*, 6th edition, (Rowman and Littlefield, August 2003).

Robert Art, *A Grand Strategy for America*, (Cornell University Press, June 2003).

Robert Art, *The United States and Coercive Diplomacy*, (United States Institute of Peace, May 2003).

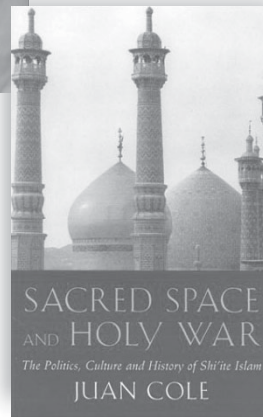


Thomas Christensen, "A Smooth Ride Despite Many Potholes: The Road to Crawford," *China Leadership Monitor*, Vol. 1, No. 4 (Fall 2002).

Thomas Christensen, "The Contemporary Security Dilemma: Deterring a Taiwan Conflict," *The Washington Quarterly*, 25:4 (Autumn 2002).

Juan Cole, *Sacred Space and Holy War: The Politics, Culture and History of Shi'ite Islam* (London: I.B. Tauris, 2002).

Owen R. Cote, Jr., "Weapons of Mass Confusion," *The Boston Review*, April/May, 2003.

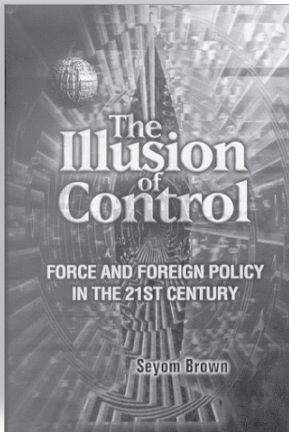


Seyom Brown, *The Illusion of Control* (The Brookings Institution, July 2003).

Seyom Brown, "American Foreign Policy and the Limits of Military Might: A Review Essay," (An analysis of "The Dynamics of Coercion" by Daniel Byman and Matthew Waxman) *Political Science Quarterly*, Vol. 117, No. 3 (Fall 2002).

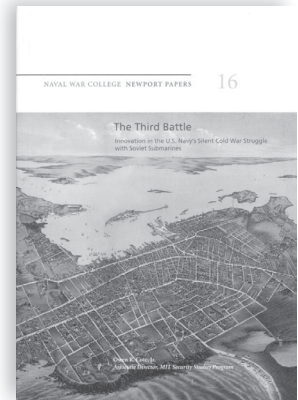
Thomas Christensen, "Optimistic Trends and Near-Term Challenges: Sino-American Security Relations in Early 2003," *China Leadership Monitor*, No. 6 (Spring 2003).

Thomas Christensen, "The Party Transition: Will It Bring a New Maturity in Chinese Security Policy?" *China Leadership Monitor*, No. 5, Winter 2003.



Owen Cote, *The Third Battle: Innovation in the U.S. Navy's Silent Cold War Struggle with Soviet Submarines*, Newport Paper No. 16 (Naval War College Press, 2003).

Geoffrey Forden, "Laser Defenses: What If They Work?" *The Bulletin of the Atomic Scientists* (Sept./Oct. 2002).



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Andrea Gabbitas, "Prospects for U.S. Russian Nonproliferation Cooperation Under Bush and Putin," BSCIA Discussion Paper, John F. Kennedy School of Government, Harvard University (October 2002).

Eugene Gholz and Daryl Press, "Paying to Keep the Peace," *Regulation* (Spring 2003).

Kelly Greenhill, "The Use of Refugees as Political and Military Weapons in the Kosovo Conflict," in Raju G.C. Thomas, ed. *Yugoslavia Unravelling: Sovereignty, Self-Determination Intervention* (Lanham, MD: Lexington Books/Rowman and Littlefield, 2003).

Kelly Greenhill, "Engineered Migration and the Use of Refugees as Political Weapons: A Case Study of 1994 Cuban Balseros Crisis," *International Migration*, Vol. 40, No. 4 (Fall 2002).

Lisbeth Gronlund and David Wright, "Estimating China's Production of Plutonium for Weapons," *Science and Global Security* (Spring 2003).

Lisbeth Gronlund, David Wright, and Stephen Young, "An Assessment of the Intercept Test Program of the Ground-Based Midcourse National Missile Defense System," *Defense and Security Analysis*, Vol. 18, No. 3, 2002.

Eric Heginbotham and Richard Samuels, "Japan," in Richard Ellings and Aaron Friedberg, eds., *Strategic Asia 2002-2003, Asian Aftershocks*, (Seattle, WA: National Bureau of Asian Research, 2002).

Eric Heginbotham, "The Fall and Rise of Navies in East Asia: Military Organizations, Domestic Politics and Grand Strategy," *International Security* (Fall 2002).

Eric Heginbotham and George Gilboy, "Getting Realism: US Asia (and China) Policy Reconceived," in *The National Interest*, (Fall 2002).

Allison Macfarlane, et. al., "Reducing the Hazards from Stored Spent Power-Reactor Fuel in the United States," *Science and Global Security*, vol. 11, 2003.

Allison Macfarlane, "Yucca Mountain," *Science* (Sept. 2002).

Joyce Malcolm, "Disarming History: How an Award-winning Scholar Twisted the Truth About America's Gun Culture — and Almost Got Away With It," *Reason* (March 2003).

Joyce Malcolm, "Gun Control's Twisted Outcome," *Reason* (November 2002).

Marvin Miller, "Attempts to Reduce the Proliferation of Nuclear Power: Past and Current Initiatives," in Paul Leventhal, Sharon Tanzer, and Steven Dolley, eds., *Nuclear Power and the Spread of Nuclear Weapons*, (Washington, DC, Brassey's, 2002).

Marvin Miller, "The Iraqi Nuclear Program: Past, Present, and Future?" in S.L. Spiegel, J.D. Kibbe, and E.G. Matthews, eds., *The Dynamics of Middle East Nuclear Proliferation*, (The Edwin Mellon Press, 2002).

Olya Olikier and Tanya Charlick-Paley, "Assessing Russia's Decline: Trends and Implications for the United States and the U.S. Air Force," The United States Air Force Report, November 2002.

Barry Posen, "La Maîtrise des espaces, fondement de l'hégémonie militaire des Etats-Unis," *Politique Etrangere*, Vol. 1, 2003.

Barry Posen, "The Struggle Against Terrorism: Grand Strategy, Strategy, and Tactics," in *Terrorism and Counterterrorism: Understanding the New Security Environment*, Russell D. Howard and Reid L. Sawyer, eds., (McGraw-Hill, 2002).

Laura Reed and Seth Shulman, "A Perilous Path to Security? Weighing U.S. 'Biodefense' against Qualitative Proliferation," in Susan Wright, editor, *Biological Warfare and Disarmament: New Problems/New Perspectives* (Rowman and Littlefield Publishers, 2002).

Robert Ross, "Navigating the Taiwan Strait: Deterrence, Escalation, Dominance and US-China Cooperation," *International Security*, Vol. 27, No. 2 (Fall 2002).

Richard Samuels and Eric Heginbotham, "Japan's Dual Hedge," *Foreign Affairs* (Sept./Oct. 2002).

Harvey Sapolsky, "Inventing Systems Integration," in Andrea Prencipe and Andrew Davies, eds., *The Business of Systems Integration* (Oxford University Press, 2003).

Harvey Sapolsky, "The Science and Politics of Defense Analysis," in Ham Cravens, ed., *The Social Sciences Go to Washington* (Rutgers University Press, 2003).

Christopher Twomey, "The Dangers of Overreaching: International Relations Theory, The US-Japan Alliance, and China," in Benjamin L. Self and Jeffrey W. Thompson, eds., *An Alliance for Engagement: Building Cooperation in Security Relations with China*, (Henry L. Stimson Center, 2002).

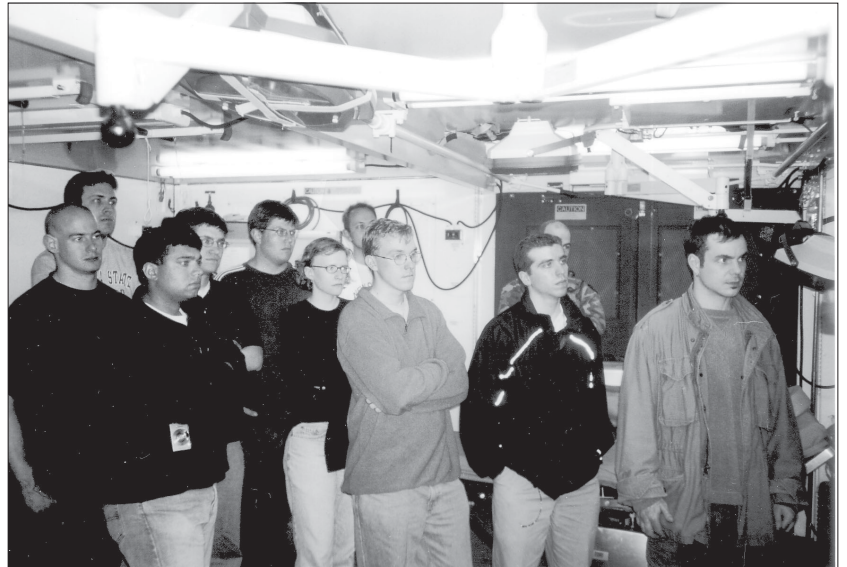
David Wright, "The Target Set for Missile Defense Intercept Test IFT-9," Union of Concerned Scientists Working Paper (Oct. 2002).

## SSP TEACHING

**O**ur Program's courses – what MIT prefers to call subjects – are open to all students eligible to attend classes at MIT, including cross-enrollers from Harvard and Wellesley. Most of the subjects are offered at the graduate level and through the Political Science Department.

Political Science doctoral candidates may use Security Studies as one of their fields of concentration. Within that context, security studies has two principal objectives: first, it introduces the student to the study of American defense policy, including the policy process, arms control, force structure, and military budgets. Second, it introduces the student to the study of the role of force in international politics and how countries have historically pursued their security interests. Students are expected to develop some competence in the methods of systems analysis, technology assessment, and strategic reasoning that shape the size and composition of U.S. strategic nuclear and general-purpose forces. The international military competition, the prospects for arms control and their implications for U.S. force planning receive special consideration in several subjects. Others examine some of the same issues by contrasting U.S. experiences and approaches with those of rivals and allies.

Students who plan to offer Security Studies for the general examination take two graduate-level subjects from those listed below in the Forces and Force Analysis section, and one subject each from the listing in the Defense Politics and in the Comparative Defense Policy sections. Competence in technical analysis is



*The shocking news: graduate students being briefed on the real world*

required. A background in economics to intermediate level with particular emphasis on macroeconomics and public finance is advisable. The subjects in the Forces and Force Analysis section will provide sufficient review of the technical approaches to be examined.

The write-off requirement is three subjects with equal distribution among the three sections preferred although approval for alternative distributions may be granted in consultation with field faculty. A number of substantive fields in the Political Science Department deal with important determinants of U.S. defense programs and expenditures. Among the most closely related are: American Politics, International Relations and Foreign Policy. Students of defense policy are also encouraged to take subjects in economics.



## COURSES

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### FORCES AND FORCE ANALYSIS

#### 17.476J/STS.435J **Nuclear Forces and Missile Defenses** Postol [G]

Introduces the assessment of strategic nuclear forces. Emphasizes the development of force requirements and methods of analyzing alternative force postures in terms of missions, effectiveness, and cost. The history of U.S.-Soviet strategic competition provides the backdrop against which the evolution of nuclear strategy and forces is considered.

#### 17.477/STS.076 **Technology and Policy of Weapons Systems** Postol [U]

Examines in detail the technology of nuclear weapons systems. Topics include nuclear weapons design, effects, targeting, and delivery; ballistic and air breathing missile propulsion and guidance; communications and early warning techniques and systems; and anti-missile, air, and submarine systems. Combines the discussion of technical materials with the national security policy issues raised by the capabilities of those technologies. Considers security issues from the distinct and often conflicting perspectives of technologists, military planners, and political leaders.

#### 17.482-3J/STS 071J/STS 450J **U.S. Military Power** Posen/Postol [U/G]

Based on the concept of Grand Strategy as a system of inter-connected political and military means and ends. Topics covered include U.S. grand strategy, the organization of the U.S. military, the defense budget, ground forces, tactical air forces, naval forces, power projection forces, and the control of escalation. Particular episodes of military history that offer insights into current conventional forces issues are examined. Graduate students are expected to pursue the subject at greater depth through reading and individual research.

#### 17.40 **American Foreign Policy: Past, Present, Future** Van Evera [U]

This subject's mission is to explain and evaluate America's past and present foreign policies. What accounts for America's past wars and interventions? What were the consequences of American policies? Overall, were these consequences positive or negative for the U.S.? For the world? Using today's 20/20 hindsight, can we now identify policies that would have produced better results? History covered includes World Wars I and II, the Korean and Indochina wars, and the Cuban Missile Crisis. Recent and contemporary crises and issues are also covered.

**17.428 American Foreign Policy:**

**Theory and Method** Van Evera [G]

Examines the causes and consequences of American foreign policy since 1898. Readings cover theories of American foreign policy, historiography of American foreign policy, central historical episodes including the two World Wars and the Cold War, case study methodology, and historical investigative methods. Open to undergraduates by permission of instructor.

**17.460 Defense Politics** Sapolsky [G]

Examines the politics affecting U.S. defense policies. Includes consideration of intra- and inter-service rivalries, civil-military relations, contractor influences, congressional oversight, peace movements in historical and contemporary perspectives, and U.S. defense politics before, during and after the Cold War.

**17.486 Japan and East Asian Security**

Samuels [G]

Explores Japan's role in world orders, past, present and future. Focuses on Japanese conceptions of security; rearmament debates; the relationship of domestic politics to foreign policy; the impact of Japanese technological and economic transformation at home and abroad; alternative trade and security regimes; and relations with Asian neighbors, Russia, and the alliance with the United States. Seminar culminates in a two-day Japanese-centered crisis simulation, based upon scenarios developed by students.

**17.407/17.408 Chinese Foreign Policy**

Christensen [G]

This course reviews and analyzes the foreign policy of the People's Republic of China from 1949 to the present. Lectures discuss the Cold War history of Beijing's relations with the Soviet Union, the U.S., Southeast Asia and the Third World. Various theories of foreign policy are discussed as potential tools for understanding Chinese foreign policy behavior. And finally, a discussion of the future of Chinese foreign policy in light of the end of the Cold War, the Chinese economy and the post-Tiananmen legitimacy crisis in Beijing.

**17.416 International Strategy** Christensen [G]

Analyzes and compares national security strategies, including military doctrine, alliance policies and foreign economic policy. Examining how various factors such as international structure, domestic politics, and leadership psychology contribute to policy outcomes and how different strategies act to stabilize or destabilize the international system. We examine how variation in the international distribution of power affects both individual nation's policies and international stability.

**17.433/17.434 International Relations of East Asia** Christensen [U/G]

This lecture course will concentrate on the Cold War and post Cold War international relations of East Asia. In the first two weeks we will cover general theoretical approaches to international relations and a brief historical backdrop of Western and Japanese imperialism in the region. In the following weeks, we will discuss the interaction between changes in the broader international system and changes in international relations of the East Asian region. The course will finish with discussion of the implications of events and trends since the end of the Cold War for East Asian security and political economy.

## COMPARATIVE DEFENSE POLICY

### 17.462 **Innovation in Military Organizations**

Posen and Sapolsky [G]

Explores the origins, rate, and impact of innovations in military organizations, doctrine and weapons. Emphasis on organization theory approaches. Comparisons with non-military and non-U.S. experience included.

### 17.484 **Comparative Grand Strategy and Military Doctrine** Posen [G]

A comparative study of the grand strategies and military doctrine of the great powers in Europe (Britain, France, Germany, and Russia) from the late 19<sup>th</sup> to the mid-20<sup>th</sup> century. Examines strategic developments in the years preceding and during World Wars I and II. What factors have exerted the greatest influence on national strategies? How may the quality of a grand strategy be judged? What consequences seem to follow from grand strategies of different types?

### 17.423 **Causes and Prevention of War**

Van Evera [U]

Examines the causes of war, with a focus on practical measures to prevent and control war. Topics covered include: causes and consequences of national misperception; military strategy and policy as cause of war; U.S. foreign policy as a cause of war and peace; and the likelihood and possible nature of another world war.

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## INTERNATIONAL- RELATED

### 17.432 **Causes of War: Theory and Method**

Van Evera [G]

Examines the causes of war. Major theories of war are examined; case-study and large-n methods of testing theories of war are discussed; and the case-study method is applied to several historical cases. Cases covered include World Wars I and II.

### 17.404 **International Relations Theory and China's Foreign Policy** Christensen [G]

This graduate seminar attempts to bridge the gap between Chinese area studies and international relations theory. Students think theoretically about China's foreign relations and ask what challenges Chinese cases pose for the existing theoretical literature. Analysis of the applicability of structural theories of international politics; two-level approaches that link international and domestic factors; ideational and normative approaches; and psychological theories of leadership decision-making. Discussion of sources and methods in researching Chinese foreign policy.

**17.468 Foundation of Security Studies**

Posen [G]

Aims to develop a working knowledge of the theories and conceptual frameworks that form the intellectual basis of security studies as an academic discipline. Particular emphasis on balance of power theory, organization theory, civil-military relations, and the relationship between war and politics.

**17.950 Great Power Military Intervention**

Posen [G]

The purpose of this seminar is to examine systematically, and comparatively, great and middle power military interventions into civil wars during the 1990s. The interventions to be examined are the 1991 effort to protect the Kurds in N. Iraq; the 1993 effort to ameliorate famine in Somalia; the 1994 effort to restore the Aristide government in Haiti; the 1995 effort to end the conflict in Bosnia Herzegovina; and the 1999 NATO war to end Serbia's control of Kosovo. By way of comparison, the weak efforts made to slow or stop the 1994 genocide in Rwanda will also be examined.

**17.953 Organizational Theory and the**

**Military** Sapolsky [G]

This joint seminar elaborates upon classical organizational concepts and methods to better understand modern military organizations and to develop new theory. It reviews organizational theory of the 1950s and 1960s and examines its applicability to the modern military. Among the topics covered are: recruitment, socialization and retention of personnel, unit cohesion, the effect of stress on performance, innovation and experiments, civil-military relations, the function of traditions, professionalism, federal-state relations, interservice relations, and the civilianization of the military.



*A reservist goes to the zoo*



## PROFESSIONAL EDUCATION

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**T**he MIT Security Studies Program has developed a growing interest in professional education as a way to stimulate discussion of international security problems and policy alternatives. Our initial activities have been through the MIT Professional Institute but we are now exploring web-based and traveling courses as a way to reach a larger audience. We also offer an Independent Activities Period course taught by officers from the Armed Forces Staff College and the National Defense University on how the military carries out crisis planning in a world contingency.

### **Military Innovation: Technology and Strategy**

This one-week course is organized by the MIT Summer Professional Program and taught by faculty from the MIT Security Studies Program as well as the Political Science Department. In the class sessions they examine the problems of threat assessment, civil/military relations, the future of defense industries, and technological changes in designing corporate/national strategies. Emphasis is placed on innovative solutions and barriers to change.

### **Promoting Innovation: The Dynamics of Technology and Organizations**

An MIT Professional Institute course offered in July. This course targets public and private businesses concerned with innovation as a means of keeping pace with a fast shifting environment. The course covers such topics as the innovation process, reshaping markets, and the politics of innovation in both the private and public sectors and is taught by, among others, Professor Sapolsky and MIT Fellows.

### **Combating Bioterrorism: The Organizational Response**

This course examines the various institutional and professional obstacles to cooperation in our fight against bioterrorism, and strategies to overcome them. Taught by SSP affiliates and public health experts, this course reviews historical experience and outlines policy alternatives.

### **Joint Crisis Action Planning Exercise**

This course looks at how the U.S. Armed Forces support the achievement of national strategic aims in a changing strategic environment. Topics include national security structure and organization, the Joint Strategic Planning System, capabilities and limitations of the Armed Services and Special Operation forces, and crisis action procedures. The course culminates in a simulated humanitarian assistance staff planning session in which students are assigned to key positions.

## SSP-AFFILIATED GRADUATE STUDENTS

### SSP-AFFILIATED DEGREE RECIPIENTS

**Alan Kuperman**, Ph.D., Political Science

“Tragic Challenges and the Moral Hazard of Humanitarian Intervention: How and Why Ethnic Groups Provoke Genocidal Retaliation”

**Sarah Lischer**, Ph.D., Political Science

“Catalysts of Conflict: How Refugee Crises Lead to the Spread of Civil War”

**Suzanne Greenstein**, SM, Political Science

“Imperfect Partners: Understanding the Challenges and Failures of US-Russian Nonproliferation Assistance Cooperation”

**Chung Hyun Lee**, SM, Political Science

“Liberal States, International Norms, and the Politics of War Crimes Tribunals”

### Ph.D. CANDIDATES POST-GENERALS

|                        |                                                                  |                                |                                                                      |
|------------------------|------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------|
| <b>Boaz Atzili</b>     | Hebrew University<br>(BA, Int'l Relations)                       | <b>Kelly Greenhill</b>         | U.Calif-Berkeley<br>(BA, Political Economy/<br>Scandinavian Studies) |
| <b>Rafael Bonoan</b>   | Columbia University<br>(BA, Int'l Security)                      |                                | MIT<br>(SM, Political Science)                                       |
| <b>Danny Breznitz</b>  | Hebrew University<br>(BA, Political Science)<br>(MA, Government) | <b>Michael Glosny</b>          | Cornell University<br>(BA, History/Government)                       |
| <b>David Burbach</b>   | Pomona College<br>(BA, Government)                               | <b>Heather Gregg</b>           | U.Calif-Santa Cruz<br>(BA, Cultural Anthropology)                    |
| <b>Marc Devore</b>     | Claremont McKenna<br>College<br>(BA, IR and Economics)           | <b>Yinan He</b>                | Harvard Divinity<br>(MA, Theology)                                   |
|                        | Institut D'Etudes<br>Politiques<br>(MA, Political Science)       |                                | Beijing University<br>(BA, Int'l Politics)                           |
| <b>Michael Eastman</b> | U.S. Military Academy<br>(BS, Political Science)                 | <b>Eric Heginbotham</b>        | Fudan University<br>(MA, Int'l Politics)                             |
| <b>Vanda Felbabova</b> | Harvard University<br>(BA, Government)                           | <b>Kathleen Hicks</b>          | Swarthmore College<br>(BA, Political Science)                        |
| <b>Andrea Gabbitas</b> | University of Chicago<br>(BA, Political Science)                 |                                | Mount Holyoke College<br>(BA, History and Politics)                  |
| <b>Michael George</b>  | U.S. Military Academy<br>(BS, Political Science)                 | <b>Michal Ben-Josef Hirsch</b> | University of Maryland<br>(MA, Public Management)                    |
|                        | Oxford University<br>(MA, Philosophy/Politics)                   |                                | Tel Aviv University<br>(BA, Political Science)                       |
| <b>Peter Goldstone</b> | University of Chicago<br>(BA, Political Science)                 | <b>Gregory Koblenz</b>         | Kennedy School,<br>Harvard University<br>(MA, Public Policy)         |

## SSP-AFFILIATED GRADUATE STUDENTS

### Ph.D. CANDIDATES POST-GENERALS

|                        |                                                                      |                           |                                                                                                   |
|------------------------|----------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------|
| <b>Daniel Landau</b>   | University of Southern California<br>(BA, Print Journalism)          | <b>Joshua Rovner</b>      | Boston College<br>(MA, Political Science)                                                         |
| <b>Evan Liaras</b>     | Harvard University<br>(BA, History)                                  |                           | U. Calif-San Diego<br>(BA, Political Science)                                                     |
| <b>Jennifer Lind</b>   | U.Calif-Berkeley<br>(BA, English)                                    | <b>Todd Stiefler</b>      | Williams College<br>(BA, Political Science/<br>Economics)                                         |
|                        | U.Calif-San Diego<br>(MPIA, IR/Pacific Studies)                      | <b>Christopher Twomey</b> | U. Calif- San Diego<br>(MA, Pacific Int'l Affairs)<br>(BA, Economics)                             |
| <b>David Mendeloff</b> | Pitzer College,<br>Claremont<br>(BA, Int'l Relations)                | <b>Chikako Ueki</b>       | Sophia University<br>(BA, Int'l Relations/<br>French)                                             |
| <b>Olya Oliker</b>     | Kennedy School,<br>Harvard University<br>(MA, Int'l Affairs)         | <b>Timothy Wolters</b>    | Univ. of Notre Dame<br>U. of Maryland<br>(MA, American History)<br>(BA, Computer<br>Applications) |
|                        | Emory University<br>(BA, Int'l Studies)                              |                           |                                                                                                   |
| <b>Jonathan Payne</b>  | Brigham Young Univ.<br>(MA, Int'l Relations)<br>(BA, Int'l Politics) |                           |                                                                                                   |

### PRE-GENERALS or MASTER'S STUDENTS

|                        |                                                             |                            |                                                                                 |
|------------------------|-------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------|
| <b>Ryan Crow</b>       | Bowdoin College<br>(BA, Biology and<br>Anthropology)        | <b>Colin Jackson</b>       | Univ. of Pennsylvania<br>(MBA, Finance)                                         |
| <b>Michael Faerber</b> | Brandeis University<br>(BA, Politics)                       |                            | Johns Hopkins/SAIS<br>(MA, Int'l Economics)                                     |
| <b>Oliver Fritz</b>    | U.Calif-Berkeley<br>(BA, Political Science)                 |                            | Princeton University<br>(BA, Political Science)                                 |
| <b>Adam Horst</b>      | Dartmouth College<br>(BA, Government and<br>BA, Psychology) | <b>Richard Kraus</b>       | U. Chicago<br>(BA, Political Science)                                           |
| <b>Shirley Hung</b>    | Harvard University<br>(BA, Government)                      | <b>Austin Long</b>         | Georgia Institute of<br>Technology<br>(BS, Politics)                            |
|                        |                                                             | <b>Vikram Mansharamani</b> | Yale University<br>(BA, East Asian Studies and<br>Ethics, Politics & Economics) |
|                        |                                                             | <b>William Norris</b>      | Princeton University<br>(BA, Politics)                                          |



*The USS Cole back in service*



## SSP DIRECTORY

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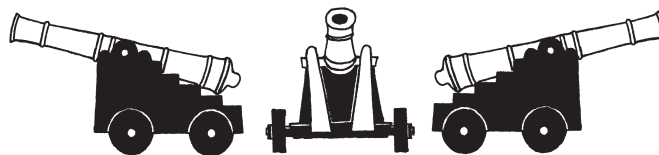
|         |                                                                                                                                  |                |
|---------|----------------------------------------------------------------------------------------------------------------------------------|----------------|
| FACULTY | <b>HARVEY M. SAPOLSKY</b><br><i>Professor of Public Policy and Organization<br/>Director of the MIT Security Studies Program</i> | (617) 253-5265 |
|         | <b>OWEN R. COTE, JR.</b><br><i>Associate Director; Principal Research Scientist</i>                                              | (617) 258-7428 |
|         | <b>GEOFFREY FORDEN</b><br><i>Senior Research Associate</i>                                                                       | (617) 452-4097 |
|         | <b>DANIEL HASTINGS</b><br><i>Professor of Aeronautics and Astronautics &amp; Engineering Syst.</i>                               | (617) 253-0906 |
|         | <b>GEORGE N. LEWIS</b><br><i>Associate Director; Principal Research Scientist</i>                                                | (617) 253-3846 |
|         | <b>ALLISON MACFARLANE</b><br><i>Senior Research Associate</i>                                                                    | (617) 253-0736 |
|         | <b>DAVID MINDELL</b><br><i>Dibner Professor of Manufacturing and Technology</i>                                                  | (617) 253-0221 |
|         | <b>BARRY R. POSEN</b><br><i>Professor of Political Science</i>                                                                   | (617) 253-8088 |
|         | <b>THEODORE A. POSTOL</b><br><i>Professor of Science, Technology and National Security Policy</i>                                | (617) 253-8077 |
|         | <b>RICHARD SAMUELS</b><br><i>Ford Professor of Political Science</i>                                                             | (617) 253-2449 |
|         | <b>MERRITT ROE SMITH</b><br><i>Professor of the History of Technology</i>                                                        | (617) 253-4008 |
|         | <b>STEPHEN VAN EVERA</b><br><i>Professor of Political Science</i>                                                                | (617) 253-0530 |
|         | <b>CINDY WILLIAMS</b><br><i>Principal Research Scientist</i>                                                                     | (617) 253-1825 |

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|       |                                                    |                |
|-------|----------------------------------------------------|----------------|
| STAFF | <b>MAGDALENA RIEB</b><br><i>Assistant Director</i> | (617) 258-7608 |
|       | <b>HEIDI LABASH</b>                                |                |
|       | <b>LYNNE LEVINE</b>                                |                |
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