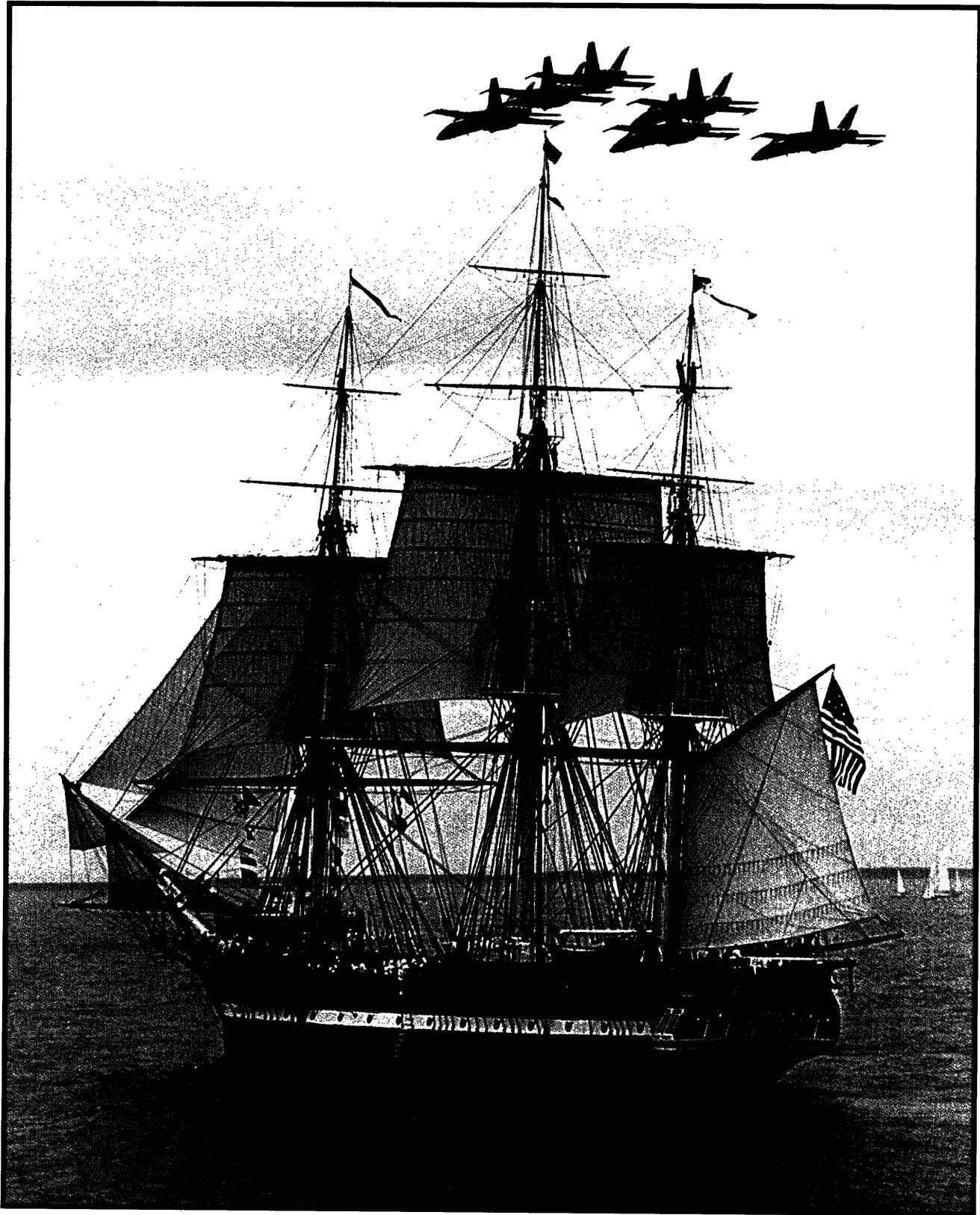


MASSACHUSETTS INSTITUTE OF TECHNOLOGY



ANNUAL REPORT

Security Studies Program

1996 - 1997

Report Documentation Page

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Cover: *USS Constitution under sail off Marblehead and escorted by The Blue Angels.*

Photo: Boston Globe

SECURITY STUDIES PROGRAM

The 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 in the MIT Political Science Department. The other is the MIT-wide seminars on nuclear weapons and arms control policy that Professor Jack Ruina and Professor George Rathjens created in the mid 1970s.

The Program's teaching ties are primarily, but not exclusively, with the Political Science Department at MIT. 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 members 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 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

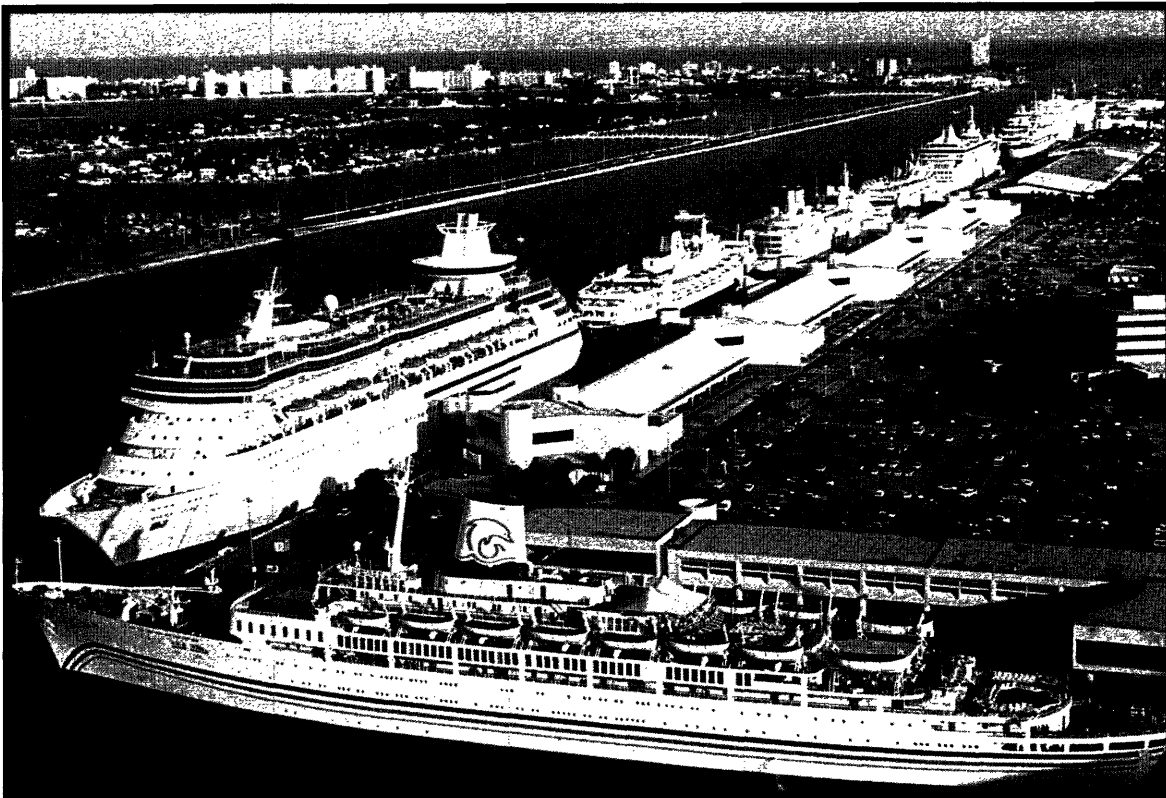
The search is on for a military peer competitor for the United States. During at least the first half of the Cold War the United States had a challenger for world influence that clearly matched its huge potential for generating military might and creating cultural temptation. The Soviet Union was a big and mobilized society with an ideology both that was appealing to some and that drove it proselytize. Today, there is nothing left of the once feared Soviet Empire; its remnants and rivals wandering about dazed over its swift and near bloodless demise.

Although the defense budget has not fallen below its Cold War low, there is a nervousness in the American military. When will another peer competitor arise? Who will it be? Will we have the technology to surpass them? According to the Quadrennial Defense Review, we must innovate, modernize, and keep our forces trained as if that test were at hand.

The academic conference circuit forms the national peer competitor early warning system. Will the peer competition be an emerging China made rich making all that stuff for Americans, a resurgent Russia, enraged by the Soviet defeat and NATO's eastward expansion, or MITI inspired, MIT educated computer hackers out to seize power and your bank account via the Internet? There is much talk, but little agreement on the identity of the next peer competitor.

It is amazing how well the defense budget has in fact held up without the identification of a convincing rival. A combination of contractor lobbying and political spinelessness may be the reason. Despite the recent reluctance of Congress to allow for more base closings, it's been public defense jobs not private defense jobs that have been most at risk since the end of the Cold War. Our review of DOD data shows that there are now 400,000 more defense contractor jobs than there were in FY 1976, the low point of Cold War defense budgets, but 700,000 fewer military personnel and 250,000 fewer Defense Department civilian employees. Not one platform production line — aircraft, armored vehicle, or ship — has closed since 1991. The very visible merger wave among defense contractors has killed corporate logos, not production capacity and actual production.

Helping also to buttress the defense budget is the painful political legacy of Vietnam. Democrats remain shy about things military — gender issues the exception. And Republicans think of the military as a core constituency to be cultivated and protected.



Port of Miami

Blue hairs heading for blue water.

But a peer competitor is indeed at hand, one feared far more than by the military or its contractors by Democrat and Republican office holders. Middle class Americans want low taxes and high subsidies. And the subsidies they value most are health care subsidies. Combined with tax resistance, the demand for subsidized health care services will eventually eat the defense budget lock, stock and gun barrel.

Already Medicare and other federal health care spending exceeds defense expenditures by \$50 billion dollars a year. Such spending grows with the aging of the American population and its obvious reluctance to meet its maker, the common American professions of religiosity and belief in an after life notwithstanding. After the debacle of the Clinton Health Care Plan and the demonization of the Republican congressional leadership with claims that they had designs on Medicare, there is no political will in Washington to challenge the middle class elderly or their children who expect to inherit the summer house, not cash it in to pay for grandma.

The recent balanced budget deal demonstrates the extent of the threat. In 2002, after five years of savings through reduced payments to medical care providers and the enrollment of the elderly and poor in health maintenance organizations, Medicare and other federal health expenditures will exceed defense expendi-

tures by \$150 billion. If the desired \$130 billion in health care savings do not materialize, the defense budget itself is a likely target. And given that the health payment reform savings are of the same type as the Defense Department's acquisition reform savings — often promised but rarely collected — the vulnerability of defense spending is even more obvious.

The simple budget arithmetic is that entitlement programs, including Medicare, account for half of the federal budget with interest payments, defense and all other federal activities (the National Weather Service, Food and Drug Administration, the Secret Service, etc.) accounting in equal shares for the remainder, or about a sixth each. Because interest payments must be met, the burden of entitlement problems (the Medicare Trust Fund is expected to be exhausted in 2001) falls on just a third of the budget. This assumes, of course, there is no willingness to raise taxes. That is a good assumption, though, given that the budget deal was achieved only with the cutting of taxes, not the raising of taxes. In fact, the budget deal created additional entitlements, including a health package for children. It's not information war that the American military should fear but the war against disease and natural death.

There is a way out. America could become embroiled in major military missions that would claim budget priority. The President's enlargement policy, the one favoring military deployments to

enhance the prospects for democracy in places such as Haiti and Bosnia, has potential along these lines as does the expansion of NATO into Eastern Europe. So far these activities have not been very expensive in dollars or soldier lives, but the possibility clearly exists that one aggrieved party or another will call our military bluff.

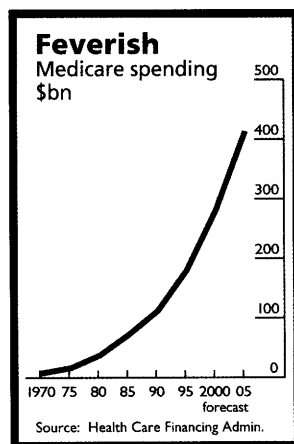
The debates over America's role in the post-Cold War world is high on the program's agenda. Barry Posen, Steve Van Evera, George Rathjens and Carl Kaysen have all been active in discussions about the likely effect of initiatives the United States might undertake to reduce regional conflict and

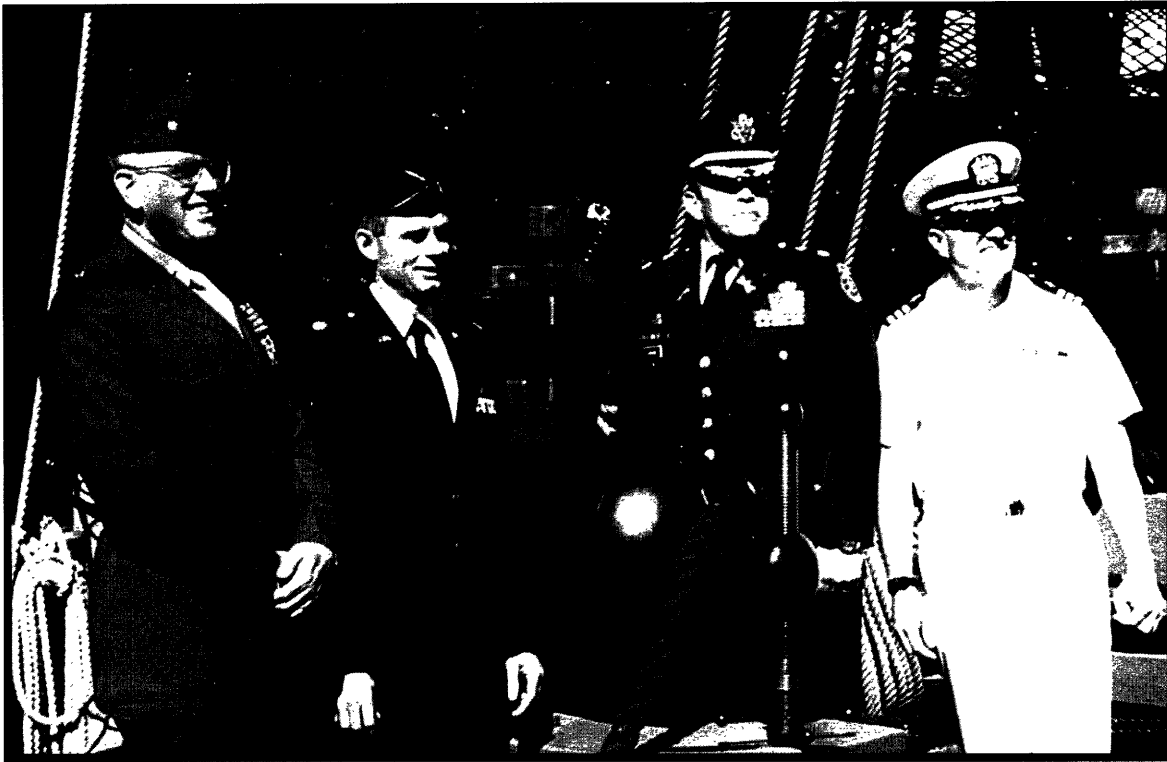
the generation of refugees. Barry has been a leader in providing a framework for analyzing the policy alternatives. To give anchor to the leave America out option, Eugene Gholz, Daryl Press and I have written advocating the policy of restraint.

The program's interest in nuclear weapons policy remains strong. In December we held the inaugural Vice Admiral Levering Smith con-

ference, what we hope will be an annual nuclear weapons related conference parallel to our successful airpower related series, the General James H. Doolittle conference which focuses on an airpower topic each year. The 1996 Smith Conference examined the recent nuclear policy review and the options for further weapon reductions. George Lewis took the lead in organizing the event.

Security developments in Asia have attracted





The JCS of 2012.

increasing attention within the program. In recent years, a growing number of students have come to MIT to work on Asian security and energy problems under the tutelage of Richard Samuels, the director of the MIT Japan Program. Dick organizes a biannual Asian security simulation, a series that has been closely followed in Japan if not always accurately reported upon there. I am very pleased to report that Dick has accepted our offer to join our faculty, thus solidifying the opportunity for students to specialize in Asian security policy within our program.

Theodore Postol continued his important work in ballistic missile defense, this year by organizing a conference of senior security and weapons technologies specialists from Japan and China to dis-

cuss theater ballistic missile defense. This first of its kind meeting, allowed Japanese and Chinese security specialists to examine in a frank way issues of potential conflict between their nations.

Also on Ted's initiative, we have instituted the position of Senior Fellow in the program, a title that will allow us to recognize appropriately the contribution to our research and teaching of the most experienced specialists in security studies. The first to have the title are Ambassador James Goodby, who has been central to American efforts to reduce the vulnerability and number of weapons of mass destruction in the lands of the former Soviet Union, and Professor Robert Art of Brandeis, who is a leading figure in the international relations discipline and the author of many wonderful works in

DIRECTOR'S
STATEMENT

the security studies field. We welcome their now-closer affiliation with our program.

With the addition of a Marine Corps Fellow, this year marks the first in which we have had a fellow from each of the armed services. The fellows earn war college credit for their year with us and help our faculty and students understand military operations and technologies. Tight budgets have caused cuts in the assignment of fellows. We are pleased that our program was deemed worthy of the addition.

We are the program formerly known as the Defense and Arms Control Studies Program, DACS for short. With the end of the Cold War apparently certain, we thought it appropriate to shed a program name that was so associated with that war. Defense was the signal to the Right that we were properly appreciative of the need for military forces, and arms control was the signal to the Left that we really did not like weapons, especially nuclear weapons. In a world where such simplicities are harder to justify we thought it better to bear the name the MIT Security Studies Program.



US Army

The way we once worked out a relationship with a peer competitor.

With a new name comes reorganization. I am very pleased to report the appointment of two Associate Directors, George Lewis and Owen Cote. George holds a Doctorate in Physics from Cornell and has been a program faculty member for a number of years, a vital part of our work on defense technologies, and recently our Assistant Director. Owen is a PhD graduate of the program, a specialist in military budget planning and doctrinal innovation, and recently the Assistant Director of the International Security Studies Program in the Center for Science and International Affairs at the Kennedy School of Government, Harvard University. As program faculty and associate directors, George and Owen will help shape our future. With their involvement, that future looks great.

We bid farewell this year to Professor Stephen Meyer who had been the leader of our work on the Soviet Union and then the former Soviet Union. With the end of the Cold War, Steve's interest shifted toward environmental regulation. He in fact did convert and has moved to the political science department. We appreciate all the help he provided to the program and our students in the bad old days.

In addition to the Smith conference we added to our listings a new seminar series, the Weapons Seminars, in which our military fellows report on developments in their services, and two new publications — DACS Deals (soon SSP Deals), which reports opportunities for graduates; and the MIT Security Studies Conference Series, short summaries of our major conference efforts. The number of incoming graduate students is growing although not the number of outgoing. (This is the first year

in many that we did not produce a PhD, but we have high hopes for a bumper crop next year.) And, thanks largely to the attention of Sanford Weiner, our professional educational activities continue to expand. Forty-five people from around the world attended our course on innovation.

Our limitation is space. The Center for International Studies, our organizational home, has a number of thriving programs in addition to our own. The expansion mentioned above combined with a healthy research program, presses on the capacity of the Center facilities. We built out the available office space and like the submarine force, have had to do some hot bunking. It is time for someone to offer us a building.

Despite our expansionist ambitions, we remain extremely grateful to our current benefactors. They are the Carnegie Corporation of New York, the Ford Foundation, the Smith Richardson Foundation, the SSP Corporate Consortium which includes Lincoln Laboratory, Lockheed Martin Tactical Aircraft Systems, Newport News Shipbuilding, and ICF Kaiser, and the Office of the Secretary of Defense. The Program also received project support from W. Alton Jones, MacArthur, the Robert Wood Johnson Foundations, and Social Science Research Council.



Harvey M. Sapolsky

FACULTY

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 BA at Boston University and earned an MPA and PhD 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, and Johns Hopkins' Applied Physics Laboratory, and has lectured at all of the service academies. 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.



OWEN COTE joined the MIT Security Studies Program this year as an Associate Director. Recently Assistant Director of the International Security Program at the Center for Science and International Affairs, Owen remains Co-Editor of the Center's Journal, *International Security*, and Adjunct Lecturer at the Kennedy School of Government. He received his PhD from 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 has written on nuclear force structure issues, the politics of strategic mobility, and was a key participant and author in CSIA's collaborative book projects on

nuclear weapons in the former Soviet Union, including *Soviet Nuclear Fission*, *Cooperative Denuclearization*, and *Avoiding Nuclear Anarchy*. After graduating from Harvard College and before returning to graduate school, he worked at the Hudson Institute.

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 BA in Economics at the University of Pennsylvania, and his PhD 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 in 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 organizing a project under the Committee's auspices on emerging norms of justified international intervention.

GEORGE N. LEWIS spent five years as a research associate in Cornell University's Department of Applied Physics after receiving his PhD 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, and 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.

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 MA in Physics from the University of Rochester and a PhD 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 (ACDA), and is currently a consultant on proliferation issues for ACDA and the Argonne National Laboratory.

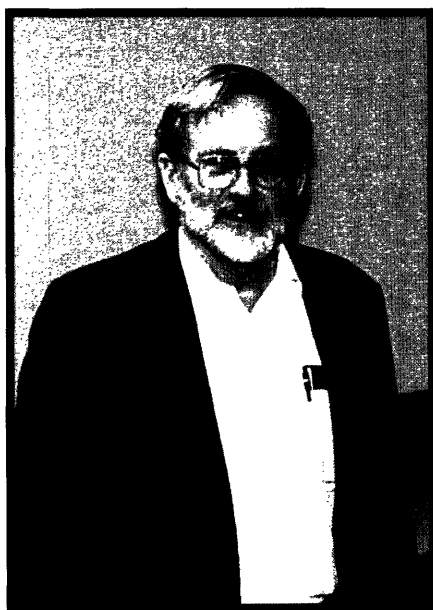
BARRY R. POSEN is Professor of Political Science at the Massachusetts Institute of Technology and one of the co-directors of Seminar XXI, an educational program for senior military officers, government officials and business executives in the national security policy community. He has written two books, *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



FACULTY

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 and Guest Scholar at the Center for Strategic and International Studies; and Woodrow Wilson Center Fellow, Smithsonian Institution. Dr. Posen's current research includes work on U.S. military strategy and force structure, regional military competitions, and nationalism.

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 the Massachusetts Institute of Technology. After receiving his PhD, Dr. Postol joined the staff of Argonne National Laboratory, where he studied the microscopic dynamics and structure of liquids and disordered solids using neutron, x-ray and light scattering, along with computer molecular dynamics techniques. Subsequently he went to the Congressional Office of Technology Assessment to study methods of basing the MX Missile, and later worked as a scientific adviser to the Chief of Naval Operations. After leaving the Pentagon, 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.



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 BS from Yale University and completed his PhD in chemistry at the University of California at Berkeley. He is active in a number of associations, including the Council for a Livable World of which he has been Chairman, and the Federation of American Scientists of which he is Sponsor, Councilor, and Past Chairman. 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 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 is currently Vice Chairman of the Board of Trustees for 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.

RICHARD SAMUELS is Ford International Professor of Political Science and recently Department Head. Professor Samuels specializes in comparative politics and political economy. He was a Fulbright scholar in Japan (1977-79, 1983-84, and in 1991-92), and teaches subjects on Japanese politics and public policy, and the comparative politics of business-government relations. He is the author of numerous articles on Japanese and comparative politics, and "The Business of the Japanese State;" "Energy Markets in Comparative and Historical Perspective;" "The Politics of Regional Policy in Japan: Localities Incorporated;" and co-editor of *Japanese Scientific and Technical Information in the United States*. Professor Samuels' most recent book *Rich Nation, Strong Army* (winner of the 1996 John Whitney Hall Prize among other awards) concerns the Japanese technology process, the aerospace industry, and relations between the military and civilian economies. His current research compares Italian and Japanese political change. He is Director of the MIT-Japan Program and is the vice-chairman of the Committee on Japan of the National Research Council.

STEPHEN VAN EVERA earned his BA in government from Harvard and his MA and PhD 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. national security policy, U.S. foreign policy, U.S. intervention in the Third World, international relations of the Middle East, and international relations theory. He has published on the causes of war, American foreign policy, American defense policy, social science methodology, and has a book forthcoming on the causes and prevention of war. From 1984-1987 he was managing editor of the journal *International Security*. He has taught international relations at Princeton, Tufts, and the University of California at Davis, as well as MIT. Dr. Van Evera has also held research fellowships at the Woodrow Wilson Center in their National Security Studies Program, and at the Harvard Center for Science and International Affairs.

SSP WORKING GROUPS

The eight working groups of the MIT Security Studies Program bring together, usually on a weekly basis, faculty and students interested in examining a topic through individual and collaborative projects. Group sessions include research reviews, thesis presentations, guest speakers, and research design efforts. All groups report on their progress at SSP symposia.

ASIAN SECURITY AND ENERGY ISSUES

Richard Samuels
Working Group Leader

CONVENTIONAL FORCES

Barry Posen
Working Group Leader

DEFENSE/ENVIRONMENTAL PROBLEMS

Harvey Sapolsky
Working Group Leader

DEFENSE POLICY AND POLITICS

Owen Cote & Harvey Sapolsky
Working Group Leaders

FUTURE OF THE DEFENSE INDUSTRIES

Harvey Sapolsky
Working Group Leader

NEW DIRECTIONS IN SECURITY POLICY

George Rathjens & Carl Kaysen
Working Group Leaders

NON-PROLIFERATION STUDIES

Marvin Miller
Working Group Leader

TECHNICAL STUDIES IN DEFENSE AND ARMS CONTROL POLICY

Ted Postol & George Lewis
Working Group Leaders



Lockheed-Martin

The good old days.

SSP SEMINARS SERIES

The Security Studies Seminar series provides a forum for discussing current security topics and the varying disciplinary perspectives on security studies. This is the Program's main seminar series, and is held in the traditional Wednesday noon timeslot.

FALL 1996

September 11

Environmentalism and Security

Kenneth Keller

Senior Fellow for Science and Technology, Council on Foreign Relations

September 18

Mine Warfare

Al Bottoms

Ellis A. Johnson Chair of Mine Warfare, Undersea Warfare Academic Group, U.S. Naval Post-Graduate School

September 25

Internal War

Michael Brown

Associate Director, National Security Studies Program, CSIA, Harvard University

October 2

Canada's Peacekeeping: An Update on its Changing Politics

Luke Fisher

Reporter, Macleans

October 9

Culture and Security

Michael Desch

Assistant Director, Olin Institute for Strategic Studies, Harvard University

October 16

UN Peacekeeping in Cyprus and the Middle East

Dan Lindley

PhD candidate, MIT Security Studies Program

October 23

Keeping the Peace in Africa

Kevin O'Prey

Senior Associate, DFI International

October 30

U.S. Policies Toward 'Rogue States'

Robert Litwak

Director, International Studies at the Woodrow Wilson Center, Smithsonian Institution

November 6

The Challenger Disaster

Dianne Vaughan

Associate Professor, Sociology Department, Boston College

November 20

An Update on the North Korean Nuclear Agreement

Mitchell Reiss

Special Assistant to the Executive Director, Korean Peninsula Energy Development Organization

December 4

Chemical and Biological Terrorism

Ruth Kempf

Associate Director, Department of Advanced Technology, Brookhaven National Laboratory

SPRING 1997

February 12

Non-Governmental Organizations and Peacekeeping

Ray Offenheiser

President, OXFAM America

February 19

Women in the Military

Chris Jehn

Senior Vice President, ICF Kaiser, and former Assistant Secretary of Defense for Personnel

February 26

The Army's Lessons Learned Process

LTC Mike Trahan, USA

MIT SSP Army Fellow, 1996-97

March 5

Sanctions on Iraq: The Experience to Date

Comdr. Scott Jones, USN

Naval Advisor, Political/Military Affairs, U.S. State Department

March 12

The War on Drugs

Col. James McDonough, USA (Ret.)

Director of Strategy, Office of Drug Policy, Executive Office of the President

March 19

Culture and Security Studies

Hugh Gusterson

Professor, MIT Science, Technology and Society Program

April 2

Military Commissaries

Debbie Clay-Mendez

Analyst, Congressional Budget Office

April 16

To Keep and Bear Arms

Joyce Lee Malcolm

Professor of History, Bentley College

April 23

American Anti-Statism and the Origins of the Cold War 'Contract State'

Aaron Friedberg

Professor Woodrow Wilson School, Princeton University

April 30

U.S. Security Assistance for Africa

J.E. Fraiser

Assistant Professor, Kennedy School of Government, Harvard

May 7

The Evolution of Israel's Grand Strategy

Shai Feldman

Senior Research Associate, CSIA, Kennedy School

**SSP
SEMINARS
SERIES**

SPECIAL SEMINARS

This series offers the program the opportunity to hear on short notice from specialists on topics of current issues. Often the session is consponsored by one or our working groups and stems from the group's research interest.

October 1, 1996

Report from ex-Yugoslavia

Richard Wilcox

MIT SSP PhD candidate

February 11, 1997

Selecting an Industrial Base for the 21st Century

Tom McWilliams

Deputy PEO/Armor & Artillery, U.S. Army

April 15, 1997

Lessons from Ground Combat in the Gulf: The Value of Training and Technology

Daryl Press

MIT SSP PhD candidate, with commentary from MIT SSP Military Fellows LTC Mike Trahan, USA, and LTC John Turner, USMC

June 17, 1997

Report from ex-Yugoslavia II

Richard Wilcox

MIT SSP PhD candidate

TECHNICAL SEMINARS

The Technical Seminars are organized by MIT SSP 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 18

A Technical Analysis of the North Korean Ballistic Missile Program

David Wright

Senior Staff Scientist at the Union of Concerned Scientists and Research Fellow at MIT SSP

October 3

The Department of Energy Excess Nuclear Material Task Force

Marvin Miller

Research Affiliate at MIT Security Studies Program

October 17

What Is a Nuclear Explosion?: The Scope of the Nuclear Test Ban

Annette Shaper

Senior Research Associate at the Frankfurt Peace Research Institute

October 24

Costs and Politics of National Missile Defense

David Mosher

Principal Analyst at the Congressional Budget Office

November 7

Current Understanding of the Performance of the Patriot Missile in the Gulf War

Ted Postol

Professor of Science, Technology and National Security Policy in the Program in Science, Technology, and Society at MIT and a member of the MIT Security Studies Program Faculty

March 20

**Cover and Terrorist Use of NBC Weapons:
Large Vulnerability Limited Threat**

Robert Newman

*Science Fellow, Center for Science and International
Affairs, Harvard University*

March 27

**Effects of a Nuclear Explosion: A Case Study
of Mumbai**

M.V. Ramana

Visiting Fellow, MIT Security Studies Program

April 17

**Immobilization of Weapon Plutonium: Viable
(Better?) Alternatives to Glass**

Allison Macfarlane

*Science Fellow, Center for Science and International
Affairs, Harvard University*

April 24

**Nuclear Power and Nuclear Weapons in
Pakistan**

Zia Mian

Research Fellow, Union of Concerned Scientists

WEAPONS SEMINARS

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 profession's tools.

September 26, 1996

Infantry Anti-Armor Weapons (included display of weapons provided by 25th Marines)

Lieutenant Colonel John Turner

MIT SSP Marine Corps Fellow

March 17, 1997

**B1 Bomber: The Backbone of America's
Heavy Bomber Fleet**

Lieutenant Colonel Steve Dickman

MIT SSP Air Force Fellow

April 22, 1997

Heavy Metal: The M-1 Tank Series

Lieutenant Colonel Mike Trahan

MIT SSP Army Fellow

May 9, 1997

DDG-51 Aegis Destroyers

Lieutenant Commander Matt Garside

MIT SSP Navy Federal Executive Fellow

STAR SERIES SEMINARS

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

October 8, 1996

Regional Security Issues in Asia

Air Vice Marshall Brendan O'Loughlin

Australian Military Attache to the U.S.

March 18, 1997

Acquisition Reform

Dr. Steven Kelman

*Director, Office of Federal Procurement Policy, Executive
Office of the President*

April 14, 1997

**The Use of Airpower in Operation Provide
Comfort**

Brigadier General Charles R. Henderson, III

Former Commander of Operation Provide Comfort

July 28, 1997

NATO Expansion

Secretary General Javier Solana

Secretary General of NATO

THE FUTURE OF WAR SEMINARS

This series is offered in conjunction with the Olin Institute for Strategic Studies at Harvard and the Center for Science and International Affairs at Harvard's Kennedy School of Government. The organizers believe that the end of the Cold War has reduced greatly the likelihood of a major power war, but do not doubt that there is a future for war nevertheless. The series was created to explore how wars are likely to occur and to be fought in the coming decades. Each program hosts one or more of the sessions.

October 10

U.S. Defense Spending

Dr. Cindy Williams

*Assistant Director, National Security Division,
Congressional Budget Office*

Dr. Andrew Krepinevich

*Executive Director, Center for Strategic and Budgetary
Assessment*

October 31

Arab Culture and Warfare

Dr. Kenneth Pollack

*Recently on the National Security Council Staff, and a
PhD recipient from the MIT Security Studies Program*

November 14

Force XXI

Major General Paul Kern

*United States Army, Commanding General, 4th Infantry
Division*

February 6

The Strategy of Rapid Dominance

General Charles Horner, USAF (Ret.)

*Most recently Commander in Chief of North American
U.S. Air Force Aerospace Defense Command, the U.S.
Space Command, and Commander Air Force Space
Command*

February 20

Discussion of his new book, *The Clash of Civilizations and the Remaking of World Order*

Samuel P. Huntington

*Director, Olin Institute for Strategic Studies, Harvard
University*

March 12

Information and Revolution

Major Ralph Peters

United States Army

May 8

The Future of America's Continental Commitment

John Mearsheimer

Professor of Political Science, University of Chicago

LINCOLN LABORATORY TALKS

- On February 24, 1997, Marvin Miller, Senior Research Scientist in Nuclear Engineering Emeritus, discussed proliferation issues
- On April 3, 1997, Stephen Meyer, Professor of Political Science, discussed the Russian military
- On May 5, 1997, George Rathjens, Professor of Political Science Emeritus active in Pugwash, discussed recent American Academy study of an UN peacekeeping force he co-edited

CONFERENCES AND SYMPOSIA

September 10, 1996

Chemical Demilitarization: The Risk of Inaction

MIT Faculty Club

On September 10, the Security Studies Program held a day-long conference on the problems affecting the destruction of chemical weapons. In August the Army began test burns of its stock of chemical weapons in Utah, but has found its plans to build incinerators at other weapon storage sites in the U.S. are threatened by the objections of environmentalists. The U.S. Senate was about to begin debating ratification of the Chemical Weapons treaty whose fate may affect the destruction of weapons in Russia. Both problems were at the core of the conference.

There was excellent representation at the conference from the U.S. government. Major General Robert Orton, Program Manager, Chemical Demilitarization, Department of the Army, Major General Roland Lajoie, USA (Ret.), Deputy to the Assistant Secretary of Defense for Cooperative Threat Reduction, and Dr. Theodore Prociw, Deputy to the Assistant Secretary of Defense for Chemical and Biological Matters, Department of Defense, were among the featured speakers. MIT speakers included Dr. Elizabeth Drake who is Vice Chair of the National Research Council Stockpiles Committee which monitors the disposal process, and Professor Carl Peterson who was the Committee's Chair. Russian participants included Mr. Valeriy Vladimirovich Filippov, President of AOTOS, the Joint-stock Company of Heavy Organic Synthesis Industry.

Alumni speakers were Paul Walker who was a senior staff member of the House Armed Services Committee and is now Director of the ChemTrust project of Global Green, and Dr. Robert Mikulak, Alternative Representative to the U.S. Delegation to the Chemical Weapons Convention Preparatory Commission who helped negotiate the chemical weapons treaties. Marvin Miller and Harvey Sapolsky chaired the sessions, which were made possible by a grant from ICF Kaiser, a leading engineering firm.

October 3, 1996

Weapons Trade, cosponsored with Women in International Security

Carnegie Endowment, Washington, DC

About 55 alumni and friends participated in our joint alumni/Women in International Security (WIIS) conference on October 3 in Washington, DC. The two panels on the trade in conventional and weapons of mass destruction featured MIT alumni. The dinner speaker was Dr. Cindy Williams, Director of the National Security Division of the Congressional Budget Office.

The alumni speakers were Natalie Goldring, Deputy Director, British American Security Information Council; Herbert Lin, post-doctoral fellow at MIT in the 1980s and presently on the staff at the National Research Council; Laura Holgate, Special Coordinator, Cooperative Threat Reduction, Office of the Assistant Secretary of Defense for International Security Policy; Jessica Stern, MacArthur Research and Writing Grantee. The panels were chaired by alumni as well with Anne Cahn, Scholar-in-Residence at American University, serving as chair of the first panel, and Katherine Magraw, Foreign Affairs Specialist,

Multilateral Affairs Bureau, U.S. Arms Control and Disarmament Agency (ACDA), chairing the second panel. Current MIT/SSP Program PhD candidates Randall Forsberg, Director, Institute for Defense and Disarmament Studies, and Eugene Gholz also spoke at the conference.

The MIT Club of Washington, headed by Mike Telson, helped publicize the session. WIIS proved to be an efficient partner and program manager, organizing all the local events quite effectively.



NATO

Well, maybe just one picture.

December 12, 1996

**Vice Admiral Levering Smith Conference:
The Future of U.S. Strategic Nuclear Forces**

MIT Stratton Student Center

The MIT Security Studies Program has initiated an annual conference series on U.S. nuclear weapons policy that will honor the memory of Vice Admiral Levering Smith, the officer who helped build the nation's submarine-launched ballistic missile system. Admiral Smith was a gunnery officer in WWII who switched to the development of guided missiles. He was instrumental in starting the Polaris program and was made Admiral by direct selection of President Kennedy. This year's conference dealt with the issues of ballistic missile reductions.

The United States and Russia have made significant progress over the last decade towards reducing the dangers posed by their nuclear arsenals. The START II Treaty, if implemented would reduce the strategic forces of both countries to under 3,500 deployed warheads, roughly one-third their level of just five years ago. The alert levels of the strategic nuclear forces of both countries have been relaxed and thousands of tactical nuclear weapons eliminated.

However, further progress towards reductions in the numbers of nuclear weapons and the dangers they pose is far from assured. The prospects for Russian ratification of START II are at best uncertain, and will be influenced by the positions taken by the United States on issues such as NATO expansion and ballistic missile defense. The 1994 U.S. Nuclear Posture Review did not recommend further reductions below START II levels, and instead called for adopting a strategy under which U.S. strategic forces could be rapidly expanded by redeploying weapons withdrawn, but not destroyed, under START II. And the survival of the Anti-Ballistic Missile (ABM) Treaty, long regarded as the foundation of strategic nuclear arms control, is endangered by renewed interest in ballistic missile defenses.

The speakers at the first annual Vice Admiral Levering Smith Conference addressed questions such as: What is the current and likely future state of U.S. and Russian nuclear forces? Is a new U.S. Nuclear Posture Review needed and, if so, how should it be carried out? What should be the objectives of U.S. nuclear arms control efforts following START II? What is the role of the ABM Treaty and ballistic missile defenses in the post-Cold War world? Featured were Ambassador James Goodby; Lisbeth Gronlund, Morton Halperin of the Council on Foreign Relations; Paul Lembisis of Emerson Associates; Janne Nolan of Brookings; and Robert Norris of the National Resources Defense Council.

February 14-15, 1997

MIT/Stanford Missile Defense Meeting

On February 14 and 15, SSP hosted a joint MIT/Stanford meeting on technical aspects of ballistic missile defense. The meeting brought together about 20 researchers from MIT, Stanford and a number of other institutions to hear presentations on ongoing research and participate in discussions on current missile defense issues. SSP people attending the meeting were Ted Postol, George Lewis, David Wright, Lisbeth Gronlund, Micki Weiss, Marvin Miller, Steve Dickman, Benjamin Valentino, Andrea Gabbitas, and Ramana Mani. Several SSP people gave talks, including Micki Weiss, "Tracking, Estimation and Prediction of ICBM RV Trajectories by Early Warning Radars;" Benjamin Valentino, "The Attitude of the Smaller Nuclear Powers to Missile Defenses;" Ted Postol, "Missile Defense Countermeasures;" and David Wright: "The North Korean Missile Program."

This meeting was intended to be the first in an ongoing series of joint meetings sponsored by SSP and the Center for International Security and Arms Control at Stanford. Plans are currently being made to hold the next joint meeting, focusing on the ABM Treaty, at Stanford in the late spring or early fall.

April 3, 1997

Fourth Annual James H. Doolittle Symposium The Global Positioning System: Civil and Military Uses

Royal Sonesta Hotel, Cambridge, MA

The Global Positioning System (GPS) is likely one of the most useful innovations that has come out of the Cold War technological investments. GPS is the product of a joint service effort, though not an entirely smooth one, that grew of rival military navigation systems in the early 1970s, and that came to the public's attention when it was widely used by U.S. forces in the Gulf War. Today GPS is experiencing an explosion of applications worldwide in both the civilian and military realms.

The symposium explored the burgeoning commercial market of GPS, its deepening military value and the potential problems such growth may pose for both civilian and military users. These problems include civil/military use conflicts, international friction, and the military risks inherent in its diffusion. The symposium also brought together leading experts in the field and honored its pioneers. Key participants were Professor Charles Counselman III of MIT; Dr. Pratap Misra of Lincoln Laboratory; Brigadier General John L. Clay, Deputy Director of the U.S. Air Force Space and Missile Systems Center; Larry Speelman, Vice President, II-morrow Corporation; Dr. Paul Drouilhet, Consultant, MIT Lincoln Laboratory; Glen Gibbons, Editor, *GPS World Magazine*; William P. Delaney, Director's Office Fellow, MIT Lincoln Laboratory; Captain John H. Long, USN, Assistant for GPS, Office of Deputy Undersecretary of Defense for Space Systems & Architecture; Dr. John Clark, GPS Systems Director, Aerospace Corporation; Dr. Sean Gilmore, Technical Systems Analysis Group, MIT Lincoln Laboratory; Dr. Scott Pace, Senior Analyst, RAND Corporation; and Keith D. McDonald, President, Sat Tech Systems, Inc.. The Doolittle dinner speaker was Bradford W. Parkinson, Edward C. Wells Professor of Aeronautics and Astronautics, Stanford University, and when an Air Force Colonel, the person who helped design and implement the GPS program.

June 11-12, 1997

Anti-Submarine Warfare After the Cold War Conference

Sheraton Tara Hotel, Lexington, MA

The conference, organized with the support of the Office of the Undersecretary of Defense (Acquisition and Technology), sought to gain an appreciation of the relative significance of Anti-Submarine Warfare (ASW) in the post-Cold War era. During the Cold War, ASW was one of the key naval missions and received much resources and attention. But with the demise of the Soviet Union interest in ASW as an important naval task declined sharply. The conference examined the requirement of ASW in a strategic world without the focus on one powerful opponent, but populated ever more with hard to track diesel and quiet nuclear submarines.

The two-day conference brought together about 60 leading academic analysts, naval experts, and specialists in defense technologies to discuss the evolution of pro and anti submarine technologies and the capabilities of small and medium power navies to challenge U.S. naval and maritime interests. The intent was to educate security studies specialists in the current and future ASW problems and to gain their assessment of its importance in likely American defense operations.

Speakers included British and Dutch naval officers, Vice Admiral James Fitzgerald, the Inspector General of the Navy, Dr. Paris Genalis of OSD, and several retired U.S. Naval officers with extensive ASW and diesel submarine experience.

FIELD TRIPS

August 10, 1996

Tour of USS McInerney (FFG 8)

while it visited Boston as part of NATO Standing Naval Force.

August 10, 1996

Portsmouth Naval Shipyard

September 27, 1996

Lincoln Laboratory

October 11-12, 1996

Watervliet Arsenal, New York, and Lima Tank Plant, Ohio

November 10, 1996

Bath Iron Works

January 10, 1997

MITRE Corporation

January 28-30, 1997

Fort Sill, Oklahoma

June 4-5, 1997

Blount Island Command, Jacksonville, FL

June 6, 1997

Promotion Ceremony for LCDR Matt Garside at USS Constitution



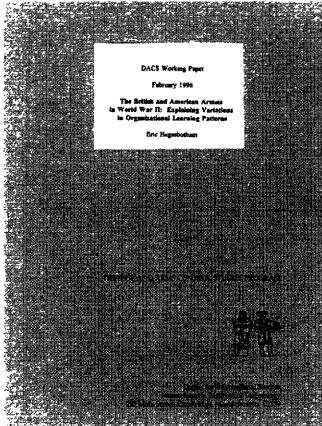
The "New England Professors" in the field.

SELECTED PUBLICATIONS

- Owen Cote and Harvey Sapolsky, "The Navy and the Third Battle of the Atlantic," *Submarine Review*, July 1997.
- Eugene Gholz, "National Interest Should Guide Defense Industry Mergers," *Defense News*, February 17-23, 1997.
- Eugene Gholz, Daryl Press, and Harvey Sapolsky, "Come Home America," *International Security*, Spring 1997.
- Lisbeth Gronlund and David Wright, "Missile Defense: The Sequel," *Technology Review*, May/June 1997.
- Carl Kaysen, ed., *The American Corporation Today: Examining the Questions of Power and Efficiency at the Century's End* (New York: Oxford University Press, 1996).
- Carl Kaysen, "Are Nations Natural Economic Units?," in *Racism, Xenophobia and Ethnic Conflict*, Simon Bekker and David Carlton, eds., (Natal, South Africa: Indicator Press, 1996).
- Carl Kaysen and George Rathjens, "Send in the Troops: A UN Foreign Legion," *The Washington Quarterly*, VOL. 20, NO. 1, Winter 1997.
- George Lewis and Theodore Postol, "Portrait of a Bad Idea," *Bulletin of the Atomic Scientists*, July/August 1997.
- Marvin Miller and Frank von Hippel, "Let's Reprocess the MOX Plan," *Bulletin of the Atomic Scientists*, July/August 1997.
- Barry Posen, "Competing Visions for U.S. Grand Strategy," *International Security*, VOL. 21, NO. 3, Winter 1996/97.
- Barry Posen, "U.S. Security Policy in Nuclear-Armed World, Or: What If Iraq Had Had Nuclear Weapons?," *Security Studies*, VOL. 6, NO. 3, Spring 1997.
- Barry Posen, "Military Responses to Refugee Disasters," in *Nationalism and Ethnic Conflict, an International Security Reader*, Michael E. Brown, Owen R. Cote, Sean M. Lynn-Jones, Steven E. Miller, eds., MIT Press, 1997.
- Harvey Sapolsky and Eugene Gholz, "Indefensible Defense Costs," op-ed, *Wall Street Journal*, Friday, July 11, 1997.
- Harvey Sapolsky, "Interservice Competition," *Joint Forces Quarterly*, Spring 1997.
- Harvey Sapolsky and Eugene Gholz, "Eliminating Excess Defense Production," *Issues in Science and Technology*, January 1997.
- Richard J. Samuels, "The Japan That Doesn't Know What to Say," op-ed in *Los Angeles Times*, Sunday, June 1, 1997.
- Richard J. Samuels, review of *Japan's Nuclear Future: The Plutonium Debate and East Asian Security* in *Survival*, 1997.
- Taylor Seybolt, "Coordination in Rwanda: The Humanitarian Response to Genocide and Civil War," *A Conflict Management Group Working Paper*, February 1997.
- Stephen Van Evera and John L. Mearsheimer, "Hateful Neighbors," op-ed article, *The New York Times*, Tuesday, September 24, 1996.
- Stephen Van Evera, *Guide to Methodology for Students of Political Science*, (NY: Cornell University Press, 1997).
- Sharon K. Weiner, "Resource Allocation in the Post-Cold War Pentagon," *Security Studies*, Summer 1996.

SSP PROGRAM PUBLICATIONS, 1996/1997

WORKING PAPERS / CONFERENCE REPORTS



Stephen Van Evera, "Guide to Methodology," September 1996.

Lieutenant Colonel Leo Florlick, "'Low Yield' Nuclear Experiments: Should They Be Permitted Within a Comprehensive Test Ban Treaty?," SSP Working Paper No. 96-3, October 1996.

Carl Peterson, "Chemical Warfare Agents and Weapons Disposal Experience in the U.S.," SSP Working Paper No. 96-4, October 1996.

Daniel Lindley, "UNFICYP and a Cyprus Solution: A Strategic Assessment," SSP Working Paper No. 97-1, May 1997.

MIT SECURITY STUDIES CONFERENCE SERIES



"The Future of Naval Aviation," summary of conference by the same name, part of the MIT Security Studies Conference Series, and the Fourth Annual James H. Doolittle Symposium, held on April 24, 1996 at the MIT Faculty Club, report produced January 1997.

"The Future of U.S. Strategic Nuclear Forces," summary of conference by the same name, part of the MIT Security Studies Conference Series, and the first annual Levering Smith Symposium, held on December 12, 1996 at the MIT Stratton Student Center, report produced June 1997.






SSP SEMINAR NOTES

Summaries of the SSP Seminar Series presentations.

EARLY WARNING

SSP Newsletter produced eight months per year.

BREAKTHROUGHS Research Journal

BREAKTHROUGHS	
SPRING 1996 VOL. V, NO. 1	
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Faculty Profile <i>Jul Paine</i>	34
Also in This Issue: Focus on Military Intervention	
MITDACS Defense and Arms Control Studies Program of the Massachusetts Institute of Technology, Cambridge, MA	

VOL. VI, NO. I SPRING 1997:

Harvey M. Sapolsky, Mike Trahan, Eugene Gholz, and David T. Burbach, "Let's Have a Parade"

Michael C. Lynch, "The Nature of Energy Security"

David T. Burbach, "Ready for Action? European Capabilities for Peace Operations"

Marvin M. Miller, "Technical Fixes and Public Acceptance of Nuclear Power"

Faculty Spotlight: Marvin Miller

TEACHING AT SSP

The 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, defense and arms control 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 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 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 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: Science, Technology and Public Policy; American Politics; International Relations and Foreign Policy; and Soviet Studies. Students of defense policy are also encouraged to take subjects in economics.

FORCES AND FORCE ANALYSIS**17.476 Analysis of Strategic Nuclear Forces** (Postol) [G]

STS.516

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 Technology and Policy of Weapons Systems (Postol) [U]

STS.076

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 these technologies. Considers security issues from the distinct and often conflicting perspectives of technologists, military planners, and political leaders.

17.482/483 U.S. General-Purpose Forces (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.

AMERICAN DEFENSE POLITICS**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.

17.428 American Foreign Policy: Theory and Method (Van Evera) [G]**17.301J American Foreign Policy: Theory and Method** (Van Evera) [U]

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.

COMPARATIVE DEFENSE POLICY

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.

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.

17.462 **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.

17.468 **Foundation of Security Studies** (Van Evera) [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.

SSP-AFFILIATED DEGREE RECIPIENTS, 1996/1997

MICHAEL PETTIGREW

SM, Political Science, February 1997

**Military Ascendancy or Political Propaganda:
An Assessment of India's Indigenous Defense Policy**

Thesis Readers: Harvey Sapolsky

Myron Weiner (supervisor)

STEVE HILL

SM, Sloan School of Management, May 1997

**Weapons Innovation and Joint Systems Development:
A Case Study of the Joint STARS Program**

Thesis Supervisor: Harvey Sapolsky



MIT ROTC

Look but don't shoot.

GRADUATE STUDENTS 1996/1997

PHD CANDIDATES – POST-GENERALS

Nicholas Beldecos	Princeton University <i>(Politics)</i>	Peter Goldstone	University of Chicago <i>(Political Science)</i>
David Burbach	Pomona College <i>(Government)</i>	Eric Heginbotham	Swarthmore College <i>(Political Science)</i>
Dean Cheng	Princeton University <i>(Politics)</i>	Dana Isaacoff	Cornell University <i>(Labor Relations)</i>
Jane Kellett Cramer	Oberlin College <i>(English)</i>		New School for Social Research <i>(Media)</i>
Eugene Gholz	MIT <i>(Political Sci./Materials Science and Engineering)</i>	Jonathan Ladinsky	University of Chicago <i>(Political Science)</i>

**GRADUATE
STUDENTS**

Daniel Lindley Tufts University
(Internat'l Relations/French)

Kevin O'Prey Grinnell College
(International Relations)

Daryl Press University of Chicago
(Political Science)

Jeffrey Sands Amherst College
(American Studies)

Taylor Seybolt Haverford College
(Political Science)

Jeremy Shapiro Harvard University
(Government)

Robert Snyder United States Military
Academy
(Social Science)

Brian Taylor University of Iowa
(Political Science)
London School of
Economics
(Soviet Politics)

Christopher Twomey University of California,
San Diego
(Economics/Internat'l Affairs)

Chikako Ueki Sophia University
(Internat'l Relations/French)

Benjamin Valentino Stanford University
(Politics)

James Walsh Brown University
(Philosophy)

Sharon Weiner Northeast Missouri State
University
(Political Sci./Economics)
Lancaster University,
England
(Strategic Studies)

Richard Wilcox The Citadel
Georgetown University
(International Studies)

Robert Zirkle University of Illinois
(Physics, Political Science)

PRE-GENERALS OR MASTER'S STUDENTS

Rafael Bonoan Columbia University
(International Security)

Rodney Fabrycky Princeton University
(International Relations)

Andrea Gabbitas University of Chicago
(Political Science)

Yinan He Fudan University
(International Relations)

Carol Kuntz Princeton University
(International Relations)

Alan Kuperman Johns Hopkins
(International Relations)

Jennifer Lind UCSD
(Political Science)

Olya Oliker Kennedy School of
Government,
Harvard University
*(Public Policy/International
Affairs)*

Jacob Zimmerman Princeton
(Politics)

SSP VISITORS AND AFFILIATES

LIEUTENANT COLONEL STEVEN P. DICKMAN, USAF

Air Force Fellow

Steve Dickman is an Air Force navigator with extensive operational experience in both the B-1B and B-52 weapons systems. He graduated from the United States Air Force Academy in 1979 with a degree in Aeronautical Engineering. He received a Master of Science in System Engineering from the University of Southern California in 1984. His background includes duty on the Headquarters Air Force staff as a Congressional Activities Specialist and Readiness Assessment Staff Officer. Steve's most recent assignment was as a Forces and Arms Control Staff Officer assigned to Headquarters, United States European Command in Stuttgart, Germany. In Stuttgart he oversaw the U.S. military implementation of conventional arms control agreements as well as managed the command's force structure.

DR. JAMES FOSTER

Visiting Fellow

James L. Foster received his B.A. degree from Stanford University and his PhD from MIT in 1975. He has previously been on the faculty of Tufts University and the Rand Graduate Institute. He served for ten years as a senior analyst and program manager at the RAND Corporation conducting research for the Office of the Secretary of Defense, the Air Force and the intelligence community. He was then an investment analyst and fund advisor for several Wall Street investment firms. He has returned to the academic world this year as a Research Associate at CIS.

COMMANDER MATTHEW GARSIDE, USN

Navy Federal Executive Fellow

A native of Norwell, Massachusetts, Matt Garside attended Massachusetts Maritime academy earning a BS in Marine Transportation. Entering the Navy in 1984, he first served in USS MCINEREY (FFG 8), a guided missile frigate, as an Engineering Division Officer responsible for main propulsion equipment. Operational experience during his initial tour included counter narcotics operations and a deployment to the Mediterranean. Next, he was assigned as Engineer Officer in USS CROMMELIN (FFG 37), another guided



missile frigate, where he was responsible for all engineering equipment and personnel. Matt's next assignment was as Engineer Officer in USS JOHN PAUL JONES (DDG 53), an AEGIS equipped guided missile destroyer. His last assignment was as Executive Officer in USS KINKAID (DD 965), a SPRUANCE class destroyer. Operations in KINKAID included deployment to the Arabian/Persian Gulf and a major modernization overhaul at Long Beach Naval Shipyard.

LISBETH GRONLUND*Research Fellow*

Lisbeth Gronlund is a Senior Staff Scientist at the Union of Concerned Scientists, a public interest research group based in Cambridge, MA. After receiving a PhD 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 received an SSRC-MacArthur Foundation Fellowship and spent two years at the Center for International Security Studies at the University of Maryland, College Park. Dr. Gronlund's research has focused on technical aspects of arms control, and she has written on the issues of ballistic missile defenses, fissile material controls, and the proliferation of ballistic missiles. Her current work with the MIT SSP Technical Working Group is focused on the implications of US missile defense programs for deep reductions in nuclear weapons.

ALLEN KAUFMAN*Visiting Scientist*

Dr. Allen Kaufman is Hubbard Professor of Strategic Management, Whittemore School of Business, University of New Hampshire. He received his SM in political science from the Massachusetts Institute of Technology and a PhD in history from Rutgers University. Dr. Kaufman is author of *Managers vs. Owners: The Struggle for Corporate Control in American Democracy* as well as numerous other studies on corporate strategy, social issues management and business history. His research with the MIT SSP Working Group on the Management of the Cold War focuses on the relationships between the Air Force and the aerospace industry. This year he published an article in *Industrial and Corporate Change* where he examined the effects of collaborative management techniques on supplier relations. During the spring, he attended a conference at the Hagley Museum on the Future of Business History. His essay "Assembling America's Private Arsenal for Democracy, 1920-1961" will appear in *Business and Economic History* in the fall.

M.V. RAMANA*Visiting Fellow*

M. V. Ramana received his undergraduate degree in Physics from the Indian Institute of Technology, Kanpur. After completing his Ph.D. in theoretical particle physics from Boston University in 1994, he was a postdoctoral research associate at the University of Toronto. In 1996, he was awarded an SSRC-MacArthur Foundation Postdoctoral Fellowship on Peace and Security in a Changing World. His interests include South Asian nuclear policy, the fissile material cutoff and the human costs related to energy production and use. In tune with the South Indian system of naming people, he prefers to be addressed only by the name Ramana.

LAURA REED*Visiting Scientist*

Laura Reed received her PhD 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 of 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.

LIEUTENANT COLONEL MICHAEL W. TRAHAN, USA

Army Fellow

Michael Trahan came to MIT as an Army Senior Service College Fellow, after having served over twenty-one years in the Army, alternating jobs in either the Cavalry or as a Middle East, Foreign Area Officer. His most recent assignments were as the Regimental Executive Officer of the 2D Armored Cavalry Regiment, and as commander of 3D Squadron, 2D Armored Cavalry Regiments (Light) at Fort Polk, LA. A graduate of Texas A&M University, with Bachelor of Arts degrees in History and English, Michael Trahan completed his graduate work at the Naval Post Graduate School in Monterey, CA, receiving a Masters of Arts in National Security Affairs and in Middle East Studies. A two time attendee at the Defense Language Institute, once for Arabic, and once for Hebrew, he has served two tours in the Middle East, in addition to Desert Shield/Desert Storm. In addition to overseas assignments in the Middle East, Mike has served over eight years in Germany. In 1994, LTC Trahan served as the Joint Task Force Commander during a combined exercise with the Esceula Superior De Guerra in Buenos Aires, Argentina, and in 1995 for a six month period, commanded U.S. Ground Maneuver/Quick Reaction Forces in Haiti, first as an integral part of Operation Uphold Democracy, then subsequently as part of United Nations Mission in Haiti (UNMIH).

LIEUTENANT COLONEL JOHN H. TURNER, USMC

Marine Corps Fellow

An infantry officer with 21 years of active service, John Turner holds an M.A. in international affairs from the Catholic University of America in Washington, D.C. and he is a distinguished graduate of the U.S. Marine Corps Command and Staff College. He has operational experience both afloat and ashore throughout the U.S. and East Asia. A veteran of the Gulf War, his most recent assignments were with the Supreme Headquarters Allied Powers Europe (SHAPE) at Mons, Belgium where he worked on NATO enlargement and peacekeeping policy and with the 4th Air-Naval Gunfire Liaison Company (ANGLICO) in West Palm Beach, Florida.

SANFORD WEINER

Visiting Scholar

Sanford Weiner is a Research Associate in CIS. His primary interest is comparative public policy, both comparisons across the defense, health and environmental policy sectors, and between the U.S. and Europe. He has been working with Harvey Sapolsky on the managing the cold war project, seeking to derive lessons for civilian agencies. He has been looking specifically at how the Air Force and MITRE develop new communications technologies. He is also the Program Director for the Center's new Program on Regulatory Reform, which has an environmental focus.

MOSHE (MICKI) WEISS

Visiting Fellow

Micky did his undergraduate work in Physics and in Electrical Engineering at the Technion-Israel Institute of Technology (1974). He earned a M.Sc. from Technion (1979) and a Ph.D. from Princeton (1985), all in EE; specializing in communication theory and information sciences and systems. Since 1975 he has been with RAFAEL, Israel's Armament Development Authority, at the Electronic Combat Analysis & Simulation Center (ECA&SC) - Israel's national lab for R&D of countermeasure techniques and their operational doctrine. His latest position there was the head of the center. He also served in several RAFAEL and Israel

**VISITORS
AND
AFFILIATES**

Defense Forces (IDF)/Ministry of Defense (MOD) committees supervising advanced weapon systems R&D, and their operational doctrine. In 1995 he was awarded RAFAEL's annual award for outstanding R&D mission accomplishment. On a Sabbatical from RAFAEL, Mickey joined the MIT SSP Defense Technology Group, where he has been working on the physical and engineering fundamental limits of Ballistic Missile Defense systems.

DAVID WRIGHT

Research Fellow

David Wright received his PhD in theoretical condensed matter physics from Cornell University in 1983, and held physics research positions until 1988. He received an SSRC-MacArthur Fellowship in International Peace and Security to retrain in international security issues, and spent two years in the Center for Science and International Affairs at Harvard University. Thereafter he joined the staff of the Federation of American Scientists as a Senior Arms Control Analyst and has been a Senior Staff Scientist at the Union of Concerned Scientists. Dr. Wright's recent research has included depressed-trajectory SLBMs, strategic defenses after the Cold War, and the proliferation of ballistic missiles and nuclear weapons. At MIT SSP he has focussed on the distinction between tactical and strategic missile defenses and an evaluation of the proposed Theater High Altitude Area Defense (THAAD) system, and the implications of advanced missile defense systems for the ABM Treaty.

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