Lab Participation in IGCC Programs and Activities (2003–2010)

INTRODUCTION

Founded in 1983, IGCC stimulates innovative research into the causes of international conflict and cooperation through a mix of research initiatives, training programs, and direct funding for UC student and faculty research. It builds multidisciplinary research teams, primarily from the UC campuses and the Lawrence Livermore and Los Alamos National Laboratories, but also in partnership with other research institutions and industry.

IGCC expressly involves the national laboratories in its research projects whenever policy challenges require technical solutions toward promoting cooperation among nations. In IGCC’s Track Two programs, the Northeast Asia Cooperation Dialogue and Arms Control and Security Improvements in the Middle East, lab participants have played integral roles. In regional cooperation dialogues, workshops, and nuclear weapons policy conferences, lab technical specialists learn about regional policymaking, and UC faculty learn about the role of technology in building peace. Representatives from LLNL and LANL have served on the IGCC Steering Committee since its beginning.

THE IGCC STEERING COMMITTEE

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<th>Members from LLNL</th>
<th>Members from LANL</th>
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PROGRAMS AND ACTIVITIES

Public Policy and Nuclear Threats: Training the Next Generation (2003–)

IGCC’s Public Policy and Nuclear Threats program (PPNT) is a premier example of lab–campus synergies. PPNT began as an NSF-sponsored Ph.D. training program for students throughout the UC system, funded through NSF’s competitive Integrative Graduate Education and Research Training (IGERT) program. Lab personnel were heavily involved in setting the agenda for this ambitious program.

The current summer “boot camp” is a spin-off of the PPNT IGERT program and is open to graduate students and professionals from all institutions. This multidisciplinary training covers the science of nuclear threats, nonproliferation strategies, strategic doctrine, and emerging nuclear threats from new nuclear states and terrorists. It is held at UC San Diego each summer.

The IGCC PPNT program was designed as a response to the realization that the cohort of experts on nuclear weapons policy in all disciplines is heading toward retirement and not being replaced adequately.
with new Ph.D.s. The program seeks to: encourage UC Ph.D. students to study public policy and technology issues related to nuclear weapons; re-engage UC departments in research on the same; foster the interests of current students as well as recruit additional top students; and promote cooperation between the campuses and the national laboratories, especially LLNL and LANL.

### 2010 PPNT Summer Boot Camp Speakers
- George Anzelon, LLNL
- Brian Boyer, LANL
- Kory Budlong-Sylvestre, LANL
- Max Fratoni, LLNL
- Patrick Grant, LLNL
- Mark Schanfein, Idaho National Laboratory
- John Scott, LANL
- David K. Smith, LLNL

### 2010 PPNT Summer Boot Camp Students
- Joel Forrester, PNNL
- Kim Knight, LLNL

### 2009 PPNT Summer Boot Camp Speakers
- John Scott, LANL

### 2008 PPNT Summer Boot Camp Speakers
- George Anzelon, LLNL
- Adam Bernstein, LLNL
- Matt Cowan, LLNL
- Joseph Pilat, LANL
- John Scott, LANL
- David K. Smith, LLNL

### 2008 PPNT Summer Boot Camp Students
- Patrice Stevens, LANL
- Greg Powell, LANL
- Dan Dietrich, LLNL
- Drew Walter, Sandia National Laboratory

### 2007 PPNT Summer Boot Camp Speakers
- Adam Bernstein, LLNL
- Neil Joeck, LLNL
- Kent Johnson, LLNL
- Joe Pilat, LANL
- Mark Schanfein, LANL
- John Scott, LANL
- David K. Smith, LLNL

### 2007 PPNT Summer Boot Camp Students
- Susan Allen, LLNL
- Peter Beroissian, LLNL
- Camille Bibeau, LLNL
- Kimberly Budil, LLNL
- Matt Cowan, LLNL
- Thaddeus Orzechowski, LLNL
- Patrice Stevens, LANL
2004 PPNT Summer Boot Camp Speakers
- Kory Budlong-Sylvestre, LANL
- Zachary Davis, LLNL
- Sigfried S. Hecker, LANL
- Kent Johnson, LLNL
- James Larrimore, LANL
- Ron Lehman, LLNL
- Steven A. Maaranen, LANL
- Michael May, LLNL
- Joseph Pilat, LANL

2003 PPNT Summer Boot Camp Speakers
- Debbie Ball, LLNL
- Kory Budlong-Sylvestre, LANL
- Elaine Chandler, LLNL
- Dwight Jaeger, LANL
- Neil Joeck, LLNL
- James Larrimore, LANL
- Karl Lautenschlager, LANL
- Steve Maaranen, LANL
- John Scott, LANL
- John St. Ledger, LANL

PPNT Student Interns at LLNL and LANL (funded through NSF)
- Dan Chivers (Nuclear Engineering, UC Berkeley), Nuclear Science Summer Intern Program, Glenn T. Seaborg Institute, CMS Directorate, LLNL
- Justin Hastings (Political Science, UC Berkeley), LLNL
- Bethany Lyles (Nuclear Engineering, UC Berkeley), N-Division, LLNL
- Amanda Johnson (Nuclear Engineering, UC Berkeley), LLNL
- Dane Swango (Political Science, UC Los Angeles), Deputy Director’s Office, National Security Division, LANL
- Jessica Weiss (Political Science, UC San Diego), Research Scholar on China and the North Korean Nuclear Crisis, LLNL

Initial IGERT Proposal Development

Lawrence Livermore National Laboratory (LLNL)
- Thomas Adams, Associate B. Division Leader for Computational Physics
- Steven Ashby, Acting Deputy Associate Director, Computing Applications and Research Department
- Debbie Ball, Proliferation Prevention and Arms Control Program (PPACP)
- Zachary Davis, Nonproliferation, Arms Control, and International Security Division
- Larry Ferderber, Director, LLNL National Security Office
- Ron Lehman, Director, Center for Global Security Research
- Eileen Vergino, Deputy Director, Center for Global Security Research

Los Alamos National Laboratory (LANL)
- Kory Budlong-Sylvestre, Nonproliferation and International Security Division
- Jim Doyle, Nonproliferation and International Security Division
- Joseph Pilat, Nonproliferation and International Security Division
- Richard Wagner, Leader, LANL LRNVP; Former. Asst. Sec of Defense for Atomic Matters
- Paul White, Program Manager, Russian Nonproliferation Program (RNP)
**PPNT Mentors**
- Harold Agnew, former director of LANL and ex-CEO of General Atomics
- Harold Brown, former Secretary of Defense and former director of LLNL
- Michael May, professor emeritus, Stanford University and former director of LLNL
- Admiral Robert Wertheim (ret.), former director of Navy Strategic Systems Projects and senior vice president of Lockheed
- Herb York, director emeritus of IGCC and former director of LLNL

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**2009 Student Conference, held in Washington, D.C.**
- Lisa Sam-Manning, Brookhaven
- Joe Pilat, LANL

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**2008 Student Conference on the Nuclear Renaissance, held at LLNL**
- Elizabeth Cantwell, LANL
- Jor Shan Choi, LLNL
- Jonathan Essner, LLNL
- Neil Joeck, LLNL
- Mike Kristo, LLNL
- Ron Lehman, LLNL
- Rick Norman, Lawrence Berkeley National Laboratory
- Michael Rosenthal, Brookhaven National Laboratory

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**2007 Student Conference on Nuclear Forensics**
- Joseph Pilat, LANL (speaker)
- Daniel Chivers, LLNL
- Jude Egan, LANL
- Paul Hirsch, LANL
- David Petersen, LLNL
- Jessica Weiss, LLNL

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**2006 Student Conference on Denuclearizing North Korea Panel Advisors**
- George Anzelon, LLNL
- Ronald F. Lehman II, LLNL
- Mark Schanfein, LANL
- Zachary S. Davis, LLNL

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**2005 Winter Conference Panel Advisors**
- Paul Booker, Sandia National Laboratory
- Lisa Brown, Sandia National Laboratory
- Kory Budlong Sylvester, LANL
- Zachary Davis, LLNL
- Anna Williams, Sandia National Laboratory
The Evolving Relationship Between Technology and National Security in China (2009–2013)

In partnership with Stanford University and the Stockholm International Peace Research Institute, a research project to identify and investigate the forces reshaping the technological landscape in China and how this is impacting the country’s place in the global science and technology order. The project is funded by the Department of Defense’s Minerva grant program.

Participants

- Zachary Davis, Nonproliferation, Arms Control, and International Security Division, LLNL

Public Policy and Biological Threats (2004–)

Funded by the Carnegie Corporation of New York, Public Policy and Biological Threats (PPBT) is a multidisciplinary training program that focuses on policy responses to the threats posed by bioterrorism and emergent infectious diseases. Program faculty includes experts from throughout the UC system, the National Laboratories, and many of the nation’s leading research institutions. Topics include the science of biological weapons and emergent disease threats, the history of bioterrorism and weaponization, verification and monitoring, public health infrastructure, response mechanisms, scenario building, national security decision-making, and industry protocols and incentives.

2007 PPBT Summer Boot Camp Participants

- Ticora Jones, Postdoctoral Researcher, Chemistry, Materials and Life Sciences Division. LLNL

2006 PPBT Summer Boot Camp Speakers

- Cyndi Wells, Technical Staff Member, Nonproliferation Division, LANL

2005 PPBT Winter Planning Meeting

- Cyndi Wells, Technical Staff Member, Nonproliferation Division, LANL

2004 PPBT Planning Meeting

- Sue Allen, Staff Analyst, International Assessments Division, LLNL
- Tuan Nguyen, Center for Global Security Research/Chemistry and Materials Science, LLNL
- Don Prosnitz, Deputy Director, Homeland Security Organization, LLNL
- Kory Budlong-Sylvester, Safeguards Systems Group, LANL
- Eileen Vergino, Deputy Director, Center for Global Security Research, LLNL
- Cyndi Wells, Technical Staff Member, Nonproliferation Division, LANL

2004 PPBT Summer Boot Camp Speakers

- Michael May, former director of LLNL
- William Friedhorsky, Chief Scientist, Int. Space Response Division, LANL
- Don Prosnitz, Deputy Director, Homeland Security Organization, LLNL
- Cyndi Wells, Technical Staff Member, Nonproliferation Division, LANL

Funded by the U.S. Department of State’s Bureau of Education and Cultural Affairs (ECA), the IGCC Program on U.S. National Security provides an innovative, interdisciplinary program on U.S. national security policymaking and how the events of 9/11 have altered this policy landscape and process. Eighteen foreign scholars from around the globe participate in this intensive six-week program, which focuses on the following four broad thematic areas:

1. Foreign Policy, National Security, and the Opinion-Forming Process;
2. Terrorism and National Security;

The program’s academic portion features distinguished faculty and professionals from the campuses of the UC system, the National Labs, and from institutions across the country, and employs a combination of lectures, freewheeling roundtables, case studies, debates, a simulation, and community discussions to enhance interaction and to further understanding of the diverse issues being examined. The curriculum incorporates political science, economics, international relations, military policy, natural resource management, technology policy, and journalism.

Speakers

- Ron Baskett, LLNL
- Mike Carter, LLNL
- Bill Dunlop, LLNL
- Neil Joeck, LLNL
- Jeff Kass, LLNL
- T. R. Koncher, LLNL
- Ron Lehman, LLNL
- Michael May, LLNL
- George Miller, LLNL
- Ed Moses, LLNL
- Jerry Mullins, LLNL
- Don Prosmitz, LLNL
- George Sakaldasis, LLNL
- C. Wes Spain, LLNL
- Richard Ward, LLNL
- Charles Verdon, LLNL

The Northeast Asia Cooperation Dialogue (NEACD)

Since NEACD’s founding in 1993, its strategic goal has been to create an institutional mechanism for dialogue and communication in order to minimize tension and build cooperation in the Northeast Asia region. The Northeast Asia Cooperation Dialogue (NEACD), a unique multilateral forum involving policy-level foreign ministry officials, defense ministry officials, military officers, and academics from China, Russia, North and South Korea, Japan, and the United States, has proven its value as the only ongoing channel of communication among the six governments in the region. NEACD keeps vital lines of communication open in Northeast Asia by providing regularly scheduled meetings in an informal setting, allowing participants to candidly discuss issues of regional security and cooperation. Since 1993, NEACD has held twenty sessions, rotating hosting duties among the participating countries.

Participants

- Zachary Davis, Nonproliferation, Arms Control, and International Security Division, LLNL
Middle East Regional Security Track Two Dialogues

UCLA’s Center for Middle East Development (CMED) and the Institute on Global Conflict and Cooperation (IGCC) jointly conduct research and provide educational programs on matters of political, economic, and diplomatic development in the Middle East. Guided by UCLA Professor Steven Spiegel, IGCC’s Middle East programs work to explore issues of regional security, enable conflict resolution, and facilitate Track Two diplomacy. These objectives are implemented by conducting conferences; preparing reports; and sponsoring study groups on such subjects as democratic culture, Gulf security, regional business and economics, the new Asian role in the region, technological cooperation across borders, and humanitarian intervention.

Participants

- Neil Joeck, LLNL, July 2008
- Joseph Pilat, LANL, July 2008, July 2010

The Challenges and Opportunities of Nuclear Forensics: Leveraging Technology for Increased Nuclear Safety, April 2008

Substantial technical work has already begun on the topic of nuclear forensics, yet the nonproliferation policy implications have not yet been thoroughly analyzed and considered. In a one-day workshop organized by IGCC and the Stanley Foundation, a select group of nuclear scientists, policy experts, and representatives from relevant national and multilateral bodies came together to examine how coordinated multilateral development of nuclear “finger-printing” databases can be advanced to promote international transparency and strengthen deterrence.

Speaker

- David Smith, LLNL

National Science Foundation IGERT Proposal Submission, 2008

IGCC partnered with LLNL and LANL to prepare and submit a new IGERT pre-proposal to NSF on “Nuclear Technologies and Global Cooperation,” a graduate training program which focused on civilian nuclear power. We received letters from lab directors Michael Anastasio and George Miller indicating their support for this project. While we were not invited to submit a full proposal to NSF, we are seeking alternative sources of support for this worthwhile project since it is an increasingly important area of interest for national and international security. We will collaborate with our lab partners to redefine the proposal.
The Future of the Public Policy and Nuclear Threats Workshop, January 2008
IGCC hosted a workshop, in collaboration with lab scientists and faculty from a variety of UC campuses, to discuss the future of the PPNT workshop, since the NSF IGERT funding is coming to an end. All who participated agreed that we should find alternative sources of funding to keep the PPNT workshop running.

Participants
- George Anzelon, LLNL
- Jason Ellis, LLNL
- Neil Joeck, LLNL
- Ning Li, LANL
- Evelyn Mullen, LANL
- Alden ("Jerry") Mullins, LLNL
- Nancy Jo Nicholas, LANL

Nuclear Forensics and the Prevention of Terrorism
Nuclear forensics is the analysis of nuclear or radioactive materials or devices and any associated material to identify the source of the materials or devices, determine the point of origin and routes of transit, and ultimately to contribute evidence for nuclear attribution. This project has two objectives: 1) Drawing upon the considerable resources of the UC system to bring together an interdisciplinary team of experts in nuclear chemistry, geochemistry, and international relations to address the design and content of a comprehensive, non-sensitive international nuclear forensics database; and 2) to begin to build the pipeline of students who will enter the emerging field of nuclear forensics.

Collaborators
- Bill Dunlop, Senior Scientist, LLNL
- Ian Hutcheon, Physicist, LLNL
- David Smith, Program Leader for Technical Nuclear Forensics, LLNL

Terrorist Organizations: Social Science Research on Terrorism, May 2007
This IGCC conference drew together academics and practitioners to discuss current research relevant to counterterrorism and counterinsurgency. Leading social scientists from political science, economics, sociology, and anthropology and practitioners from the U.S. military, the U.S. State Department, and the British Foreign Service presented their latest findings and on-the-ground experiences during two days of meetings.

Participants
- Rob Rosich, LLNL
The Future of Global Conflict and Cooperation, March 2006

The IGCC conference brought together some of the brightest minds in their fields to present a multidisciplinary perspective on global conflict and cooperation to the next generation of policymakers, problem-solvers, and peacemakers. Distinguished scholars from a variety of disciplines presented brief “state of the art” talks about their subfields and where they believe research for that subfield should be directed, followed by discussion in plenary sessions.

Participants

- Sigfried S. Hecker, LANL
- Jim Doyle, LANL
- Neil Joeck, LLNL
- Jerry Mullins, LLNL

Critical Infrastructure Protection Curriculum, 2006

A masters-level professional curriculum designed to assist the teaching of a graduate-level course on the public policies, technical issues, and managerial principles required to achieve and sustain robustness and resilience of critical infrastructure services. These materials are offered to any individual or institution that would like to teach or develop a course devoted to the topic, or to use it as a policy research resource. Produced in partnership with George Mason University and funded by the U.S. Dept of Homeland Security and the Department of Energy.

Team Member

- Brian Lopez, LLNL