

Nonproliferation Education at the University of Washington

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The nonproliferation curriculum at the University of Washington (UW) is the product of collaboration between Pacific Northwest Center for Global Security (PNWCGS) at the Pacific Northwest National Laboratory (PNNL) and the Jackson School of International Studies (JSIS) and Department of Political Science at the University of Washington. This collaboration began in 2001 with the establishment the Institute for Global and Regional Security Studies (IGRSS). IGRSS is housed in the Jackson School, which will celebrate its centenary in 2008 as a center for the study of world regions. PNNL also engages in a number of collaborative relationships with UW units in the natural and applied sciences.

The principal goal of IGRSS has been to develop courses that draw graduates and undergraduates into careers in the field of nonproliferation. Since offering its first courses in 2002, IGRSS has assisted a substantial number of UW graduate students in submitting successful applications for nonproliferation positions in U.S. government agencies, including the Nonproliferation Graduate Program at the National Nuclear Security Administration. Since 2001, several UW undergraduates have begun careers in the field of nonproliferation, either by working at national laboratories or enrolling in non-UW graduate programs.

The UW brought to its nonproliferation partnership with PNNL long-established programs in a wide range of professional programs and academic disciplines, including the 14 interdisciplinary regional and topical programs of the Jackson School of International Studies. The JSIS is an interdisciplinary and interdepartmental enterprise that brings together faculty and students from across the UW. Since the late 1940s the UW has trained experts for the nation's foreign policy community in programs focused in the languages, cultures, and histories of regions deemed critical to U.S. national security. However, since the termination of its program in nuclear engineering several decades ago, the UW has not supported hard science faculty positions that require knowledge of the theoretical and practical dimensions of the nonproliferation of nuclear technologies.

Among U.S. National laboratories, PNNL has special strengths in technologies critical to the implementation of arms control treaties and to the detection of activities associated with the production, deployment, and dismantlement of weapons of mass destruction (WMD). PNNL plays a central role in the management of US-Russian programs for protection of fissile materials. In 2000, the PNWCGS initiated outreach to universities and NGOs. The Pacific Northwest Center for Global Security and the Jackson School have sought to bring PNNL expertise to the UW campus and the PNWCGS currently funds several IGRSS course instructors. The PNWCGS has arranged for Russian scientists to teach an experimental course in the IGRSS curriculum. In partnership with the Pacific Northwest Center for Global Security, IGRSS is presently seeking to engage scholars and scientists from other countries in joint teaching programs with the UW.

IGRSS permits students to combine their disciplinary and professional specialties with the interdisciplinary and international IGRSS curriculum and its specialized courses on nonproliferation and WMD threats. IGRSS now offers three core courses and several occasional courses on special topics related to WMD issues. The core courses will serve as the requirements for a planned Graduate Certificate and Undergraduate Minor. The three core courses are discussed below:

Arms Control and International Law is taught by Ambassador Thomas Graham, Jr. and Professor Christopher Jones, co-Director of IGRSS. First offered in 2002, the course examines arms control treaties and related international agreements as instruments of national security strategy for the US and other countries. It also examines international responses to the threat of nuclear terrorism. Enrollment ranges from 50 to 60 students per year.

Ambassador Graham, a former General Counsel and former Acting-Director of the Arms Control and Disarmament Agency, has been involved at the principals' level with every major arms control negotiation in the period from 1970 to his retirement from government in 1997, as Special Representative of the President of the United States for Arms Control and Non-Proliferation. He led the successful U.S. effort for the indefinite renewal in 1995 of the Nuclear Non-Proliferation Treaty. He is the author of four studies published by the University of Washington Press, including a 1500-page annotated

compendium of all arms control treaties since 1925, *Cornerstones of Security*. Professor Jones has written on Soviet and NATO Security Policy and has recently published “The Axis of Non-Proliferation”, a study of Moscow-Washington cooperation in the March/April Issue of *Problems of Post Communism*.

Weapons of Mass Destruction is taught by Dr. James L. Fuller and Dr. Mark Leek.

First offered in 2004, the course provides students with an understanding of the development and deployment of weapons of mass destruction, along with a practical overview of WMD proliferation detection technology. The course also addresses the problem of WMD terrorism. Enrollment ranges from 25-35 students per year.

Dr. Fuller, a former director of PNNL’s Nonproliferation and Arms Control Program, is the author of a number of scientific publications and a developer of advanced laser technologies. In addition, he served as a technical advisor at the U.S. Department of Energy. He established the Pacific Northwest Center for Global Security and was its first director. Dr. Leek is a PNNL Senior Staff Scientist who serves as co-Director of IGRSS.

Arms Control Simulation is taught by Ambassador Thomas Graham Jr. and Professor Christopher Jones. First offered in 2005, this capstone course offers students a war game simulation of the technical, political and human factors at play in international negotiations. Ambassador Graham has had extensive experience in conducting such simulations prior to developing this course at the UW. Outside experts and visiting professors have played cameo roles, including visiting professors from Russia.

Enrollment has ranged from 15 to 25 students. This role-playing course requires students to integrate substantive knowledge acquired in the other core courses. After completing the course, most students report that they have acquired an awareness that “where you stand depends on where you sit.”

In addition to the three regularly-offered core courses, IGRSS has sponsored or co-sponsored the following courses with other units of the UW:

Perspectives on the Nuclear Fuel Cycle and Nonproliferation was taught by Professors Gennady Pshakin and Victor Sosnin of Obninsk State Technical University for Atomic Energy, with administrative participation by Dr. Mark Leek and Dr. Christopher Jones. This course was first offered in 2005 with sponsorship from the UW Ellison Center for Russian, Eastern European and Central Asian Studies and is still under development. In this course, visiting Russian physicists examine (in English) the historical interaction between the development of the nuclear fuel cycle and the emergence of international cooperation to prevent nuclear weapons proliferation, with Russia as the principal case study. Dr. Pshakin worked for a decade at the International Atomic Energy Agency and twice served as a UN weapons inspector in Iraq. The course uses a translation of Russia’s first official textbook on nonproliferation and the nuclear fuel cycle, co-authored by Professors Pshakin and Sosnin. PNNL sponsored the writing and translation of the Pshakin-Sosnin text *Nuclear Nonproliferation*.

Frederick Lorenz, a retired Marine Corps lawyer who previously taught at the National Defense University, offers a rotation of three courses: International Law and Military Intervention, International Humanitarian Law, and Water and Security in the Tigris-Euphrates Basin. Dr. Wonmo Dong, former Chair of Asian Studies at Southern Methodist University, offers a rotation of two courses: The Politics of a Divided Korea and U.S.-South Korean Security Relations.

IGRSS also offers students a menu of speakers programs and independent research opportunities. These include:

The Pacific Northwest Colloquium on International Security, a year-long series (which is also part of the doctoral program in international security at the UW Department of Political Science) is run by Professors Elizabeth Kier and Jon Mercer, both of the UW Department of Political Science.

Reading and Research Courses are presented under the co-supervision of PNNL staff scientists and UW faculty. This program has involved mainly graduate students but some undergraduates have also participated. For the planned graduate certificate, this will be a requirement (which will overlap with thesis requirements of the primary M.A. or PhD program of a graduate student).

IGRSS has developed a teaching and administrative model of relying on interested UW faculty, PNNL staff, affiliate faculty, and distinguished practitioners. The advantage of

this model is bringing to the classroom the perspectives of both the academic world and the world of practitioners. Support from the Center for Global Security has allowed the IGRSS faculty, administrators, and distinguished practitioners to explore together the uncharted territory of nonproliferation education. Thomas Graham's prolific record of publication with the University of Washington Press—*Disarmament Sketches: Three Decades of International Law and Arms Control* (2002), *Cornerstones of Security* (2003), *Common Sense on Weapons of Mass Destruction* (2004), and his forthcoming 2006 study of the revolution in intelligence gathering and verification technologies—has developed in part out of his participation in this teaching program.

The relative absence of nonproliferation curricula and curricular materials in U.S. universities suggests a need to achieve a better match between national rhetoric about the importance of nonproliferation and local financial commitments to nonproliferation education in American colleges and universities. The slow response of U.S. universities in developing nonproliferation programs may testify not only to the scarcity of funding but also to the administrative difficulties of bringing together experts in nonproliferation science and technology, academics trained in international law and international studies, and working relationships with foreign experts in countries crucial to global nonproliferation.

The experience of the classroom as teaching laboratory has led to an informal consensus among IGRSS faculty that nonproliferation can be taught in a manner roughly analogous to that in which American universities have traditionally taught national security and

military strategies. Perhaps the discipline of the history of science can also serve as a model for an emerging discipline of nonproliferation. In the eyes of IGRSS instructors, nonproliferation does in fact have a teachable history. This history consists of 1) technological developments in collecting WMD information, verifying treaties, and developing inspection protocols; 2) arms control as a security strategy for nations and alliances, in conjunction with military strategies and military force postures; 3) the development of international law and regional and global agencies for creating and maintaining arms control regimes; and 4) the evolution of the relationship of civilian nuclear power issues to nonproliferation.

Despite the vast amounts of information available in various published sources, national and international histories of nonproliferation remain relatively few in number. In particular, the transformation of Moscow's policies on arms control and military strategy during the Gorbachev period has yet to be fully examined in terms of the lessons of this experience for the post Cold-War period. There is no single-volume history of WMD proliferation or nonproliferation during the Cold War period, though there are some outstanding studies of Cold War nuclear strategies. In other words, the field of nonproliferation has unexplored possibilities for research, publishing, and the development of texts and curricula. Such possibilities beg for cooperation across national borders among scholars and technical experts.

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