



Document Downloaded: Wednesday May 22, 2013

**Presentation on Deemed Export Controls**

Author: Robert Hardy

Published Date: 11/10/2004

## **Higher Education Research, Compliance and Technology Transfer**

**November 10-12 2004**

### **Export Controls and Universities: Licensing Research?**

**Robert Hardy**

**Director of Contracts and Intellectual Property Management**

**Council on Governmental Relations**

**Washington, D.C. 20005**

#### **Introduction**

Security concerns are increasingly impacting university research. Among these concerns are export controls. While these requirements are not new, recent calls for tightening and reinterpreting the export regulations could result in imposing a new regulatory regime for fundamental research on U.S. campuses.

This paper provides background and a brief discussion of the current export control regulations, and the exclusions and exemptions from these regulations relevant to universities. The so-called “deemed export” control requirements that directly affect university-based research in the U.S. are discussed in some detail. The paper then reviews recent recommendations for changing and tightening the requirements. It concludes with some observations and an outlook.

#### **Background**

Federal laws restricting exports of goods and technology have been in existence in one form or another since at least the 1940’s. Currently they are implemented by the U.S. Department of Commerce through its Export Administration Regulations (“dual use” items), the U.S. Department of State through its International Traffic in Arms Regulations (“inherently military” items), and the U.S. Department of Treasury through its Office of Foreign Assets Control (trade embargoes).

The export control laws and regulations have several purposes: to restrict exports of goods and technology that could contribute to the military potential of U.S. international adversaries; to prevent proliferation of weapons of mass destruction; to advance U.S. foreign policy goals; and to protect the U.S. economy and promote trade goals. Attention to export controls has increased due to recent heightened concerns about national and homeland security as well as the need to prevent proliferation of weapons of mass destruction and terrorism and leaks of technology to U.S. economic competitors.

Export controls present unique challenges to universities and colleges because they require balancing concerns about national security and U.S. economic vitality with traditional concepts of unrestricted academic freedom and publication and dissemination of research findings and results. University researchers and administrators need to be aware that these laws apply to research, whether sponsored or not.

## **Brief Description of Authorities**

### **1. Export Administration Regulations**

The Department of Commerce's Export Administration Regulations (EAR) originally were issued under the authority of the Export Administration Act of 1979 (50 USC 2401-2420). This Act has lapsed, and Presidential executive orders issued under the authority of the International Emergency Economic Powers Act (50 USC 1701 *et seq.* (IEEPA)) have directed and authorized the continuation in force of the EAR. On August 17, 2001 President Bush issued Executive Order 13222 pursuant to the IEEPA. In that order he declared a national emergency with respect to the unusual and extraordinary threat to the national security, foreign policy, and economy of the United States in light of the expiration of the Export Administration Act. This order was renewed annually on August 14, 2002, August 7, 2003, and most recently on August 6, 2004 (Fed. Reg. Vol. 69, No. 153; 8/10/04). These renewals provide continuing authority for the EAR.

The EAR is found at Title 15, sections 730-774 of the Code of Federal Regulations (CFR). The EAR regulates the export of goods and services identified on the Commodity Control List (CCL), Title 15 CFR 774, Supp. 1. Goods and services on the CCL are *not* inherently military in nature; they are primarily and inherently commercial or potentially commercial in nature. The complete text of the EAR and CCL are available online at [http://w3.access.gpo.gov/bis/ear/ear\\_data.html](http://w3.access.gpo.gov/bis/ear/ear_data.html). An overview of steps for using the EAR is at <http://w3.access.gpo.gov/bis/ear/pdf/732.pdf>.

The Bureau of Industry and Security (BIS) in Commerce is responsible for licensing. The CCL categorized the goods and services it covers into contains 10 topical categories and one "catch-all category. The topical categories follow:

- 0--Nuclear Materials, Facilities and Equipment and Miscellaneous
- 1--Materials, Chemicals, "Microorganisms," and Toxins
- 2--Materials Processing
- 3--Electronics
- 4--Computers
- 5--Telecommunications and Information Security
- 6--Lasers and Sensors
- 7--Navigation and Avionics
- 8--Marine
- 9--Propulsion Systems, Space Vehicles and Related Equipment

Each of these categories is subdivided into lists of specific commodities. Within each category items are arranged into five groups (e.g. Group A covers Equipment, Assemblies and Components) which then are further subdivided (e.g. 6A002 Optical Sensors includes 5 subcategories such as 6A002a.2.a. image intensifier tubes having a set of specified characteristics).

## **2. International Traffic in Arms Regulations**

The International Traffic in Arms Regulations (ITAR), 22 CFR §§ 120-130, implement Section 38 of the Arms Export Control Act (22 USC 2778). This statute authorizes the President to control the export and import of defense articles and defense services. The statutory authority of the President to promulgate regulations with respect to exports of defense articles and defense services was delegated to the Secretary of State by Executive Order 11958. The regulations promulgated and implemented by the Department of State control the export of articles, services and related technical data that are inherently military in nature, as determined by the State Department. These “defense articles,” “defense services,” and related “technical data” are listed on the Munitions List (USML), 22 CFR § 121. Even some articles and technologies that are not readily identifiable as inherently military in nature—for example, research satellites—are included on the USML. A current version of the USML may be found at <http://www.fas.org/spp/starwars/offdocs/itar/p121.htm#P121.8>

- The U.S. Munitions List (USML) is divided into 22 categories. The categories vary in their breadth of coverage. Some are fairly specific (e.g. Category IV Spacecraft Systems and Associated Equipment is subdivided into a number of specific technologies such as Global Positioning System (GPS) receiving equipment specifically designed, modified or configured for military use; or GPS receiving equipment with any of a number of defined characteristics). In general, however, the USML lacks the specificity of the CCL.

## **3. Office of Foreign Assets Control**

The Treasury Department Office of Foreign Assets Control (OFAC) administers and enforces economic and trade sanctions and, based on U.S. foreign policy and national security goals, targets foreign countries, terrorists, international narcotics traffickers, and those engaged in activities related to the proliferation of weapons of mass destruction. It has authority under Presidential wartime and national emergency powers, specific legislation, and United Nations and other international mandates, to impose controls on transactions and exports from the United States to specific foreign persons, countries and entities and also to freeze foreign assets that are under the jurisdiction of the United States. (The embargoed countries frequently are referred to as the “T—7s”). A list of statutory authorities for OFAC (including IEEPA) may be found at the OFAC website below under “Legal Documents.”

OFAC sanctions focus on activities involving particular countries and nationals of those countries. While universities typically encounter OFAC issues less frequently than those arising under the other export control regulations, occasionally OFAC sanctions may impact university activities. For example, in October 2003 the Treasury Department issued an advisory opinion indicating that publication activities including websites that provide even the most minimal assistance to their users may be forced to exclude users from OFAC-embargoed (“T—7”) countries on the grounds such activities constitute “prohibited services” under the IEEPA and the Trading with the Enemy Act (TWEA). The OFAC ruling may be found at <http://www.ustreas.gov/offices/eotffc/ofac/legal/statutes/ieepa.pdf>. The issue arose in the context of a U.S. engineering journal providing editing services on articles submitted by authors from embargoed countries. In April 2004 OFAC clarified this ruling to exclude peer review of such articles from OFAC regulation, under the provisions of the “Berman Amendment” (Section 1702(b)(3) of the IEEPA and section 5(b)(4) of the TWEA). “Peer review” was defined as review of and comment on an article by experts in a relevant scholarly field to determine whether the article is worthy of publication. It does not extend to substantive rewriting or revising of manuscripts. OFAC also clarified that style and copy editing of articles for publication are not prohibited services under the OFAC. See <http://www.treas.gov/offices/eotffc/ofac/actions/index.html>.

Collaborative research activities with nationals of OFAC-sanctioned countries may, however, be viewed by OFAC as prohibited services. This includes researcher-to-researcher collaborations as well as activities more formally involving universities. A U.S. university recently was sanctioned by OFAC for providing funding to a nonprofit foundation in an embargoed country for collaborative activities. As a final check before exporting research articles or engaging in foreign collaborations involving the support of foreign nationals overseas, universities should check the OFAC’s list of embargoed entities and persons to determine whether any controls exist on exports to the intended recipients(s). For further information, see <http://www.treas.gov/offices/eotffc/ofac>.

### **Scope of the Export Regulations**

The EAR regulates items designed for potentially commercial purposes but that can have military applications (computers, pathogens, etc). The EAR covers exports both of these commodities to and from the U.S. and the release or disclosure of information about technologies pertaining to the use of controlled items to a foreign national, both in the U.S. or abroad. Section 734 of the EAR sets forth the scope of the regulations. “Exports” are defined as actual shipment of any covered goods or items outside the United States. Technology may be “released” for export through:

- (i) Visual inspection by foreign nationals of U.S.-origin equipment and facilities;
- (ii) Oral exchanges of information in the United States or abroad; or
- (iii) The application to situations abroad of personal knowledge or technical experience acquired in the United States.

Items or activities subject to the EAR may require securing a license from the Department of Commerce or qualifying for an exemption in order to be exported. The license requirements, and countries and/or foreign nationals affected, depend on the applicable CCL category. These determinations are not transparent, and require drilling down in the commodity list to ascertain the Export Control Classification Category Number (ECCN) for the specific commodity. Providing information about use of the commodity to foreign nationals whether in the U.S. or abroad also may be controlled. Not all ECCN numbers control for “use,” but for those that do, the regulatory definition of “use” is technology for “operation (including on-site installation), maintenance (checking), repair, overhaul and refurbishing” (15 CFR 772.1). The nature of the use controls may vary according to particular uses of the commodity and the nationalities of the individuals involved. (Note: Commerce currently is considering a rulemaking to clarify that any of the specified uses may give rise to controls, by changing “and” in 15 CFR 772.1 to “or”).

ITAR deals with items that the State Department has "deemed to be inherently military in character." Those items, organized into categories, include equipment, software, algorithms, and in each category, technical data and services directly related to the items specified. All such items are placed on the United States Munitions List (USML). Although the USML is considerably shorter than the CCL controlled under the EAR, some of the items are more broadly defined. Items listed on the USML and subject to ITAR require a license from the Directorate of Defense Trade Controls at the State Department prior to export.

A broad USML category that presents a particular problem for the university space research community is Category XV, Spacecraft Systems and Associated Equipment. This category includes: (a) Spacecraft, including communications satellites, scientific satellites, research satellites, remote sensing satellites, navigation satellites, experimental and multi-mission satellites; (b) Ground control stations for telemetry, tracking, and control of spacecraft or satellites; and (e) All specifically designed or modified systems, components, parts, accessories, attachments, and associated equipment for the articles in this category. As is the case with each USML category, Category XV ends with “(f) Technical data and defense services directly related to the articles enumerated.”

“Technical data” (ITAR 120.10) is defined as information required for the design, development, production, manufacture, assembly, operation, repair, testing, maintenance, or modification of controlled articles. This includes information in the form of blueprints, drawings, plans, instructions, diagrams, photographs, etc. “Defense Service” (ITAR 120. 9) means the furnishing of assistance (including training) anywhere (inside the United States or abroad) to foreign nationals in connection with the design, development, engineering, manufacture, production, assembly, testing, repair, maintenance, modification, operation, demilitarization, destruction, processing, or use of defense articles, and the furnishing of any controlled “technical data” to foreign nationals anywhere.

## **Exclusions and Exemptions from the Export Control Regulations**

### **1. Fundamental Research Exclusion from EAR and ITAR:**

The fundamental research exclusion (FRE) applies literally to (a) information (but not to export controlled items) (b) resulting from “basic and applied research in science and engineering” (c) conducted at an “accredited institution of higher education” (EAR) or “higher learning” (ITAR) (d) “located in the United States” (e) that is “ordinarily published and shared broadly within the scientific community” (see next page for distinction with “publicly available” or “public domain” information) and (f) that is not “restricted for proprietary reasons or specific national security reasons” (EAR) or subject to “specific U.S. Government access and dissemination controls” (ITAR). (15 C.F.R. 734.8 (a); 22 C.F.R. 120.11(a)(8).) This exclusion generally permits U.S. universities to allow foreign members of their communities (e.g., students, faculty, and visitors) to participate in research projects involving export-controlled information on campuses in the U.S. without securing a deemed export license. This exclusion generally does not permit the transfer of export-controlled materials or items abroad, even to research collaborators.

It is worth noting that both the EAR and the ITAR treat fundamental research as a subset of the “publicly available” or “public domain” exemptions (15 CFR 734(b)(3); 22 CFR 120.11(a); see next section). The EAR provides that research conducted by scientists, engineers, or students at a university normally will be considered fundamental research 15 CFR 734.8(b). The ITAR does not contain that affirmative statement, but instead states that university research will not be considered fundamental research if the university or its researchers accept restrictions on publication of scientific and technical information resulting from the project or activity or the research is funded by the U.S. Government and specific access and dissemination controls protecting information resulting from the research are applicable (22 CFR 120.11(a)(8)).

Despite its placement in the export regulations, universities prefer to view the FRE as an exclusion rather than exemption. The FRE essentially incorporates the provisions of National Security Decision Directive (NSDD) 189 into the export regulations. That directive originally was issued in September, 1985, and reaffirmed by the current Administration in November, 2001 (see <http://www.aau.edu/research/ITAR-NSDD189.html> and <http://www.aau.edu/research?Rice11.1.01.html>).

According to NSDD 189, “Fundamental research” means basic and applied research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community, as distinguished from proprietary research and from industrial development, design, production, and product utilization, the results of which ordinarily are restricted for proprietary or national security reasons.

The Directive goes on to state that “It is the policy of this Administration that, to the maximum extent possible, the products of fundamental research remain unrestricted.

It is also the policy of this Administration that, where the national security requires control, the mechanism for control of information generated during federally-funded fundamental research in science, technology, and engineering at colleges, universities and laboratories is classification... No restriction may be placed upon the conduct or reporting of federally-funded fundamental research that has not received national security classification, except as provided in applicable U.S. Statutes.”

## **2. Exemptions for Information that is Publicly Available or In the Public Domain:**

Public domain (ITAR) and publicly available (EAR) information that is not subject to export controls must be already published, or in the case of the EAR, “will be published” (not just “ordinarily published” as in the FRE), through: a) libraries open to the public, including most university libraries; b) unrestricted subscriptions, news-stands, or bookstores for a cost not exceeding reproduction and distribution costs (including a reasonable profit); c) published patents; d) conferences, meetings, seminars, trade shows or exhibits held in the U.S. (ITAR) or anywhere (EAR), which are generally accessible by the public for a fee reasonably related to the cost and where attendees may take notes and leave with notes; or e) websites accessible to the public for free and without the host’s knowledge of or control of who visits or downloads software/information (clearly an acceptable method of publication under EAR, and likely an acceptable method under ITAR). (See 22 C.F.R. 120.10(5), 120.11, 125; 15 C.F.R. 734.3(b)(3), 734.7-734.10.) Information that is publicly available or in the public domain can be conveyed abroad—but controlled materials or items (e.g., computers, equipment, chemicals, biological materials) cannot be exported abroad under this exclusion.

## **3. Educational exclusions from EAR and ITAR:**

Whether in the U.S. or abroad, these exclusions cover teaching foreign nationals general science, math, and engineering commonly taught at schools, colleges and universities (ITAR, see 22 C.F.R. 120.10(5)) and conveying to foreign nationals information through courses listed in course catalogues and in associated teaching laboratories of academic institutions (EAR, see 15 C.F.R. 734.3(b)(3), 734.9), even if the information concerns controlled items. The EAR exclusion does not cover controlled information conveyed outside of the classroom or teaching lab of an academic institution.

## **4. ITAR-Specific Exemptions**

### **a) The Bona Fide Employee Exemption**

The ITAR contains an additional exemption (ITAR 125.4(10)) for:

“Disclosures of unclassified technical data in the U.S. by U.S. institutions of higher learning to foreign persons who are their bona fide and full time regular employees. This exemption is available only if:

- (i) the employee's permanent abode throughout the period of employment is in the United States;
- (ii) the employee is not a national of a country to which exports are prohibited pursuant to Section 126.1 (of the ITAR) ; and
- (iii) the institution informs the individual in writing that the technical data may not be transferred to other foreign persons without the prior written approval of the Directorate of Defense Trade Controls.”

It should be noted that for most universities, the “bona fide and full time regular employee” element required for the exemption typically does not include students and may not include postdoctoral researchers (depending on their funding source).

#### **b) The “University Exemption” for Satellite Research (ITAR 125.4(d))**

In response to concerns expressed by universities about university-based space research involving satellites and the relationship to the ITAR, in March of 2002, the State Department attempted to clarify the exemption of U.S. universities from obtaining ITAR licenses for such research. It published an amendment to the ITAR (Fed. Reg. Vol. 67, No. 61, pp. 15099-15101, March 29, 2002)) covering the fabrication of scientific, research or experimental satellites for fundamental research purposes and the transfer of technical data related to such articles. In so doing, the State Department reiterated that it does not control or regulate “fundamental research.” The amendment clarified that the fundamental research exemption allows accredited U.S. institutions of higher education to export such articles as long as the all of the information about the articles is in the public domain, and the export is made only to certain universities and research centers in countries that are members of the North Atlantic Treaty Organization (NATO), the European Union, the European Space Agency, or to major non-NATO allies, such as Japan and Israel. A license is still required for export of exempted information (including discussions) and hardware to researchers from all other countries. In addition, collaborators in approved countries are required to guarantee that researchers from non-approved countries are not receiving restricted information. For many universities this requirement creates a significant disincentive to seek an export license.

Insofar as information in the public domain is already exempted, it is not clear that this exemption expands existing ITAR exemptions. In fact, the result of the “clarification” appears to impose special conditions upon university research with regard to satellites and space-based research beyond that otherwise provided in the ITAR.

#### **The “Deemed Export” Issue**

The EAR and the ITAR” define “**deemed exports**” as (a) the transfer or disclosure (visually, electronically, or in any other medium) (b) of “technologies” (EAR) or “technical data” (ITAR), meaning information beyond general and basic marketing materials (e.g. equipment installation, operation and repair instructions), as well as consulting, instruction, training, or lectures, concerning export-controlled equipment,

materials, or items (“Materials or Items”), (c) to a foreign entity or individual (d) in the U.S. (including on university campuses). Deemed exports do not include the mere transfer of the actual controlled materials or items without any associated information. (See 15 C.F.R. 734.2; 22 C.F.R. 120.17 regarding “deemed exports” and see 15 C.F.R. 772, 774; 22 C.F.R. 120.10(5) regarding “technologies” and “technical data.”) Note that the ITAR does not use the term “deemed export” as is used under the Commerce Department regulations, but the concept is the same under both the EAR and ITAR.

With regard to information relating to controlled equipment used in research projects, classes and teaching labs on campus covered by the fundamental research or educational exclusions from EAR and ITAR, most universities have believed that a “deemed export” license is not required before foreign students, faculty, researchers and visitors receive the information. They have assumed that a reasonable interpretation of the “fundamental research” and educational exclusions from ITAR and EAR must include the right for foreign students, researchers and visitors to use (and receive information about how to use) controlled equipment while conducting fundamental research on U.S. university campuses or while studying at the institution.

However, in two recent reports submitted to Congress, one by the Commerce Inspector General (IG) in March 2004 and the second, an interagency report by the Commerce, Defense, Energy, State, Homeland Security and FBI Inspectors General in April 2004, the IGs state that a deemed export license is required before foreign nationals engaged in fundamental research on U.S. university campuses may receive any technology or technical data (i.e., information beyond basic and general marketing materials, including through consulting, instruction, training, lectures) on the “use” (i.e., “operation, installation...maintenance...repair, overhaul and [/or] refurbishing,”) of EAR-controlled (or ITAR-controlled) equipment (even if the information is only conveyed visually, through observation of the operation of controlled equipment). (See 15 C.F.R. 772, 774; 22 C.F.R. 120.10(5)). The same reports are critical of the educational exclusions from export controls that allow colleges and universities to teach foreigners without first obtaining deemed export licenses, and suggest regulatory amendments that would limit or eliminate these exclusions.

### **1) Commerce Inspector General Report**

The March 31, 2004 report of the Department of Commerce Inspector General (IG), *Deemed Export Controls May Not Stop the Transfer of Sensitive Technology to Foreign Nationals in the U.S. (IPE-16176)*, contains recommendations causing grave concern to research universities. The material in the report on deemed export requirements is particularly troublesome. While the Commerce IG report contains a number of “Observations and Conclusions” of concern, the most immediate issue is the discussion of the “use” of EAR-controlled equipment by foreign nationals at universities and the fundamental research exemption. While as noted above, universities have assumed that use of controlled equipment for fundamental research is exempt under the EAR fundamental research exemption, the Commerce IG believes that “technology relating to controlled equipment—regardless of how use is defined—

is subject to the deemed export provisions (and the requirement to license foreign nationals having access to that equipment) even if the research being conducted with that equipment is fundamental.” Commerce Department management responsible for the EAR (Bureau of Industry and Security (BIS)) have stated their agreement with the IG interpretation.

If Commerce proceeds with this interpretation, deemed export licenses may need to be obtained for foreign students, faculty, visitors, technicians and other research staff to work on such projects. Many items routinely used in university research, e.g. high end computers, oscilloscopes, and fermenters, are included in the controlled list. Under the Commerce/IG interpretation, the conveyance of information on use and operation of such equipment to a foreign national for fundamental research purposes could be a deemed export. Security would have to be implemented to ensure in such cases that non-licensed foreign members of and visitors to the campus will not have access to controlled equipment. This interpretation eviscerates the EAR fundamental research exemption. It will have a chilling effect on university research and education as well as compel discriminatory treatment of foreign nationals on campus.

The actual number of such technology transfers at universities that require export licenses may be small, as Commerce/BIS believes. However, in order to make this determination, universities would need to establish a process to determine which foreign nationals have access to particular equipment and how they are using each item of equipment. This would be a formidable and resource-intensive undertaking, especially given the complexities of the CCL and the ECCN system. It also would impose a regulatory environment on campus antithetical to the academic research culture, particularly given the need to “lock down” equipment and facilities to prevent unauthorized access.

The Commerce IG report also discusses the EAR exemption for publicly available technology that is intended for publication. The report indicates that actual publication may be more appropriate, since some research may never be published. Neither the regulatory definition nor NSDD 189 supports this interpretation. The report also contains an extended discussion of fundamental research in the context of NSDD-189. The report renews a finding in a previous (March 2000) IG report that the definition of fundamental research may be vague and unclear. However, universities believe that the context of conducting research in a U.S. university whose mission is the creation and dissemination of knowledge really does matter, and that drawing a bright line between fundamental and other research at universities is inherently problematic.

The report also discusses the EAR education exemption for information released in catalog courses and associated teaching laboratories as potentially allowing release of controlled technology to foreign nationals. However, without this exemption universities would have to exclude foreign students, faculty and others or strictly secure and control the subjects taught or entry into classrooms and

teaching laboratories. This would severely limit the diversity and richness of U.S. higher education and threaten our nation's world leadership position.

Finally, the IG report suggests that deemed export policy should take into account all the nationalities a foreign national has ever maintained, and require employers to obtain export licenses based on country of origin regardless of an individual's most recent citizenship or residency status. Although Commerce has not stated agreement with this view, this could raise issues both of discriminatory treatment and added burden for universities.

## **2) Interagency IG Report**

The April 16, 2004 report of the Offices of Inspector General of the Departments of Commerce, Defense, Energy, Homeland Security, and State and the FBI, *Interagency Review of Foreign National Access to Export-Controlled Technology in the United States* (D-2004-062), also contains recommendations of serious concern to research universities. Particularly troublesome is the call for reexamination of export license exemptions of critical importance to universities, including the fundamental research and education exemptions. The report also summarizes the recommendations for enhanced compliance with export controls in the State and Homeland Security IG reports, neither of which has been made public. Should the IG recommendations result in narrowing or eliminating the existing licensing exemptions, the effect would be to alter the culture of openness that has been a hallmark of, and critical to the success of, U.S. research universities. Contrary to their intended purpose, such changes could have a substantial negative impact on U.S. national security and economic competitiveness.

The interagency report mostly summarizes the findings of the individual agency IG reports. A summary of the key recommendations contained in the interagency report as well as those referenced in the State report and Homeland Security IG report follow.

### **a) Department of State Report Recommendations**

- The State IG recommendations for compliance program best practices include: 1) automated export tracking systems, which include information on foreign nationals' visa and export license expirations and the export-controlled technology the foreign national is exposed to; 2) detailed site visitor request forms, which provide sufficient personal information about the prospective visitor for project managers, export control officials, and security personnel to make informed visitor authorization determinations; 3) unique badging that easily identifies foreign employees and visitors and automatically restricts access to work areas; and 4) automated export control training and testing systems that provide ITAR basic and refresher training with competency scores, remedial testing for failed attempts, automated record keeping, and assurance that tests were completed prior to issuance of access control badges. These recommendations are very much based on a company model, as opposed to a university model. These practices appear inappropriate and impossible to

implement in an open research and learning environment characteristic of, and essential to, universities.

**b) *Department of Homeland Security Report Recommendations***

- The Homeland Security (DHS) IG report points to the fact that the Student and Exchange Visitor System (SEVIS) does not screen foreign students and exchange visitors for export control compliance. It notes that, except for Libya, restrictions on course enrollment do not apply to foreign students or exchange visitors, with the potential effect that “non-Libyan foreign students or exchange visitors may gain access to controlled technology as a result of their participation in coursework at U.S. academic or vocational institutions or in post-graduate training programs.”
- The DHS IG report recommends that SEVIS be modified to incorporate screening for access to controlled technologies. DHS management did not concur with this recommendation, but the report indicates that the IG plans to further discuss with management the resolution of these issues and establishment of corrective measures. While SEVIS now is working considerably more smoothly than in its initial implementation, the system was not designed for this purpose and this recommendation would greatly increase the administrative burden on universities. Moreover, if acted upon, the concern expressed by the DHS IG about coursework is directly counter to and would require changing the current education exemption provided for export control regulations.

**c) *Interagency Report Recommendations***

- The interagency IG report calls for reexamination of several “broadly applied” license exemptions in the export control regulations (renewing recommendations in a 2000 interagency IG report) on the grounds these exemptions might allow the transfer of sensitive U.S. technology to countries or entities of concern. The exemptions include the publicly available technology, fundamental research, and educational exemptions as well as the exemption for legal permanent residents of the U.S. The interagency report cites the views of the Commerce and Defense IGs that it is necessary again to raise awareness of these issues since the previous recommendations were not addressed, and that Congress and/or the National Security Council should reexamine these exemptions for consistency with U.S. export control laws.
- Under the heading ***published or will be published***, the report points to the fact that research that is intended for publication is exempt from the Export Administration Regulations (EAR) regardless of whether it is actually published. Given that “anyone could claim to intend to publish research but ultimately decide not to for various reasons,” the report calls for researchers to “review the subject of their research up front to determine its sensitivity and potential applicability to export controls”(i.e. release of information to foreign nationals). While the report

cites as positive the efforts of certain scientific journals to screen publications for the risk of misuse, it states these are “back-end measures that may come too late to protect sensitive... technology if a foreign national from a country of concern was part of the team conducting the research.”

- Under the heading *fundamental research*, the report cites previous concerns that the definition of “fundamental research” may be vague and unclear, and that the decision appears to rest on the publishability of the research and whether publication restrictions exist. The report points to the need to focus on the nature of the research itself, as opposed to its ability to be published, citing the definitions in OMB Circular A-11. OMB Circular A-11 defines “basic” and “applied” research and “development” based upon the nature of research for the purposes of federal budgeting.
- Under the heading *educational exemption*, the report notes that exemptions for academic coursework are not available for the same information on controlled technologies if taught by companies. The report also cites the Commerce IG report that foreign nationals working in a laboratory who are required to use EAR-controlled equipment to perform the work are subject to licensing requirements for the use of the controlled equipment even if the actual research performed is exempt.
- Finally, under the heading *foreign national with permanent resident status*, the report notes the permanent resident may never become a U.S. citizen, may travel back and forth to the home country, and could transport export-controlled technology without any monitoring by the government. According to the report, the concerns apply less to permanent residents who become U.S. citizens since they “must renounce their citizenship of other countries, thus making a higher commitment to the U.S.” Given that such individuals often still have frequent contacts with their country of origin, this reasoning seems somewhat strained.

### 3) Department of Defense IG Report

While of less immediate concern, the March 25, 2004 report of the Department of Defense (DOD) Inspector General (IG), *Export-Controlled Technology at Contractor, University, and Federally Funded Research and Development Center Facilities (D-2004-061)*, contains several recommendations that, if implemented by DOD, raise serious issues for research universities. Of greatest concern is the recommendation that an export control compliance clause be incorporated into DOD contracts, without any recognition of the fundamental research exclusion. This is likely to result in a significant increase in the number of specific export control compliance clauses that appear in university contracts, especially in subcontracts coming from industry. Once inserted these clauses will be difficult, if not impossible, to renegotiate. The result will be to seriously weaken the partnership between defense agencies and U.S. universities.

The report recommends that DOD expand its guidance to its program managers and contracting officers, instructing them to ensure that contracts identify export-controlled technology and require access control plans including badging requirements for foreign nationals, segregated work areas for controlled technology, training, annual self-assessments, and the securing of export licenses or exemptions. It is unclear how the recommendation to implement security badging systems or change the configuration of open university laboratories and buildings to provide secure work areas would be implemented and who would pay the high costs. Universities are concerned that DOD agencies will incorrectly interpret compliance requirements to require access controls in all cases, even when fundamental research is being performed. There is additional concern that if fundamental research protections are eliminated and such restrictions are required by contract, there will be significant interference with university efforts to foster multi-departmental, multi-institutional and university-industry collaborative work.

The full implications of the implementation of the IG report recommendations remain unclear, particularly since the language of the new compliance clause and the prescription for its use remain to be developed. However, there is an inherent risk of program managers and contracting officers defaulting to overly restrictive contract language in an effort to remove them from any potential liability or culpability. It is important for universities to retain the ability to negotiate the terms of the contract based on the specifics of the technology to be employed and for the work to be done. Should DOD implementation fail to recognize NSDD-189 and the fundamental research exclusion, universities will face the difficult choice of seeking other funding sources or having export controls apply much more broadly to research performed for DOD. The associated increase in licensing and other control requirements will seriously impede research and discourage critical foreign national participation, as well as result in new administrative burdens for universities that will undermine their contribution to the nation's innovation, research and education enterprises. It will weaken the openness of the university research enterprise, which is the hallmark and strength of our system.

### **Observations and Outlook**

Since publication of the IG reports there has been considerable discussion and correspondence between university representatives and government officials, including particularly senior officials at the Commerce Department. They have expressed support for the fundamental research exclusion and understanding of the university community's concern, but have also warned of the need to prevent abuse of the FRE by allowing inappropriate transfers of sensitive technologies. They also have stated that in some situations the transfer of "use" technology to a foreign national will require a license even where the foreign national is engaged in fundamental research (Copies of the university correspondence with Commerce may be accessed at the COGR website (<http://www.cogr.edu>) under "Members Only—Current Comments").

Commerce's concern appears to focus on the transfer of sensitive "use technologies" to foreign nationals in the course of their access to controlled equipment for research purposes. In discussions with university representatives, Commerce has

indicated that routine use of controlled equipment by foreign nationals (e.g., using it in the ordinary way specified in the user manual, in such a manner that does not disclose technical information about the equipment beyond what is publicly available) does not require a license. However, Commerce representatives have suggested a license may be required if a foreign national is “using” the equipment in such a way as to access technical information beyond what is publicly available (e.g., accessing the source code of software or modifying a piece of equipment in such a way as to gain non-publicly available technical information about its design). In such situations, they believe more case-by-case examination may be warranted (e.g., to determine whether the technical information in question relates to the area in which the researcher intends to publish; if it does not, they have suggested the fundamental research exemption may not apply under the regulatory definitions (15 CFR 734.3(b)(3) and 734.8) thus triggering the need for a license).

Commerce also has claimed that the IG interpretation is the correct and longstanding interpretation of the EAR as applied to equipment use. However, it should be noted that the “Questions and Answers” Supplement to the EAR (15 CFR 734 Supplement 1) includes a Question (D1) that asks “Do I need a license for a foreign graduate student to work in my laboratory?” The Answer states “Not if the research on which the foreign student is working qualifies as “fundamental research” under Sec. 734.8 of this part. In that case, the research is not subject to the EAR.” There is no discussion of potential restrictions on the foreign student’s ability to use the laboratory equipment, nor is this issue addressed elsewhere in the Supplement. Given this response, Commerce’s position appears somewhat disingenuous.

Commerce also has agreed to establish a continuing dialogue with universities on the issues raised in the IG reports. From the discussions and correspondence, it appears that Commerce’s concerns may focus on a relatively small number of controlled technologies. While any regulatory regime that focuses on particular equipment is troubling to universities, it may be possible through this dialogue to establish some parameters within which Commerce and the university community then can discuss specific cases. However, this approach could be a slippery slope. Some in the university community believe that the climate is similar to that of the Cold War era that led to the issuance of NSDD 189, and that any attempts to impose controls on university research short of the “bright line” of classification will not be workable.

It is clear that some government officials are concerned about the potential for transfer of sensitive technologies to interests unfriendly to the U.S. that is posed by the open university research environment. This is reflected in the series of agency IG reports and recommendations. These concerns are not new, but may receive heightened attention in today’s climate of greater security consciousness. Earlier this year the Council on Governmental Relations and the Association of American Universities documented restrictions on publications and the participation of foreign nationals in government research contracts received by universities. While baseline data is lacking, universities believe these restrictions are increasing (see <http://www.aau.edu/research/Rpt4.8.04.pdf>). The effect is to impose by contract requirements that conflict with government policy as

stated in NSDD189. Acceptance of such restrictions compromises a university's ability to claim the fundamental research exemption under the export control regulations (EAR 734.8; ITAR 120.11(8)).

Clearly attention will continue to be focused on these issues. One concern is that agencies with export control responsibilities tend to consider only the particular regulatory regime for which they have responsibility. The tradeoffs inherent in increasing controls on university research and universities' ability to continue to perform fundamental research necessary for U.S. economic competitiveness and national security need to be further considered at senior government policy levels. Establishing a licensing regime for campus-based research is likely to have a chilling effect on the overall university research environment as well as the continued participation of foreign students and scholars who have been so vital to the success of the U.S. university research enterprise.