

EXPORT CONTROLS

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LETTER FROM THE VICE PROVOST FOR RESEARCH

Colleagues,

A fundamental mission of Iowa State University is the creation, preservation, and dissemination of knowledge. Research is a cornerstone of our activities focused on fulfilling that mission. Creation of knowledge is, by definition, on the leading edge of technical innovation, and much of the work that we do pushes the boundaries of human understanding. Our mission is to continue that work, and to insure its broadest publication and application within the charter and practices of the University.

In virtually every discipline, technical innovations can have a positive, global impact. Unfortunately, in some cases, they can also be used for negative, detrimental, and destructive purposes. Consequently, although the U.S. Government recognizes and supports the contributions of research universities to developing our civilization, enhancing the quality of life, and contributing to our collective national interests, it also has recognized its obligation to protect and preserve our national security. For this reason, information that can have a negative impact on our security, if improperly used, is controlled through the national system of classified information. There are certain other circumstances where national interests prohibit the transfer of certain unclassified information to foreign nations or persons. These circumstances are controlled by various U.S. Government agencies by restricting the export of certain information. This area of governance, called export controls, is the subject of this section of our web pages.

ISU fully supports the University mission of research and publication of its results. Likewise, we fully support the national policies designed to protect elements of our nation's security. Consequently, we want to make you aware of these policies and the implications for infractions. In the pages that follow, you will find expanded information on the ISU application of these export restriction policies, and in the near future more information will be available.

Please note that the policies discussed in these web pages for controlling of exports and the exclusions pertaining to them are related only to UNCLASSIFIED information. None of these policies relate to or advocates, or in any way implies a waiver, exception, or exclusion for control of CLASSIFIED information or material.

Also be advised that the U.S. Government, specifically the Commerce Department, is advocating a modification in the interpretation of these regulations that would greatly limit the involvement of foreign nationals in sophisticated scientific research and the utility of the fundamental research exemption that applies currently to export controls. We will be providing additional information regarding these suggested modifications and their impact on the university.

Our Office wants to thank Joe Gilbert and others in the IPRT/Ames Lab group for their extensive assistance in putting this information together.

ISU Policy on Export Controls

a. General Policy Statement

ISU policy requires that all research conducted by the University or any of its organizations or staff supports all of the following objectives:

1. Advancement and creation of knowledge through research and scholarship.
2. Education of students.
3. Preservation and dissemination of knowledge.

In support of these objectives, ISU policy supports the premise that the purpose and results of research conducted in the University must be openly disseminated.

The National Security Decision Directive 189 identifies the security classification system as the means to protect national security information interests, and it further defines university-based fundamental research and the fundamental research exemption. Based on these policies, most of the research conducted by ISU currently is exempt from export controls. There are exceptions to this, however. Export controls are applicable to some research, and under these circumstances, ISU requires full compliance with the existing governmental policies and associated regulations. It is critical to understand when research and academic interactions may fall under these export control regulations.

Because of the increased priority given to these regulations by the U.S. Government and their implications to the conduct of research and academic interactions on campus, ISU is developing a process to ensure that ISU research is conducted in full compliance with all applicable export regulations. The process will involve ISU's scientists as well as multiple ISU organizations, including the Office of Sponsored Programs Administration, the Office of Research Compliance, and the Office of University Counsel. The roles of each of these units are being developed and defined. This document should provide the necessary information required to understand current regulations as well as the necessity for evolving these changes in compliance on campus.

b. Key Definitions and Concepts for Export Control

Export control is a complex issue based, fundamentally, on what is being exported and to whom. Complexity grows when there are both exemptions and other restrictions. When determining application to a specific project, the official regulatory definitions should be consulted.

Export: This term is broadly defined in the numerous export control laws, regulations, and policies. An export includes: (1) actual shipment of any covered goods or items; (2) the electronic or digital transmission of any covered goods, items or related goods or items; (3) any release or disclosure, including verbal disclosures or visual inspections, of any technology, software, or technical data to any foreign national; or (4) actual use or application of covered technology on behalf of or for the benefit of any foreign entity or person anywhere. Refer to the official definition of export under the EAR (Export Administration Regulations) and ITAR (International Traffic in Arms Regulations) when

determining whether a specific act constitutes an export. As “export” is currently defined, it precludes a foreign national (either a faculty member or student) from participating in research that involves covered technology without first obtaining a license from the appropriate government agency. (See also “Deemed Export”.)

Deemed Export: An export of technology or source code (except encryption source code) is “deemed” to take place when it is released to a foreign national within the United States. [See 15 CFR §734.2\(b\)\(2\)\(ii\) \(EAR\)](#). This may take the form of a tour, technical discussion, or presentation.

Defense Service ([ITAR at 22 CFR §120.9](#)): The furnishing of assistance, including training, to foreign persons, whether in the U.S. or abroad, in the design, development, engineering, manufacture, production, assembly, testing, repair, maintenance, modification, operation, demilitarization, destruction, processing, or use of defense articles (those listed on the U.S. Munitions List [USML]). Furnishing any technical data controlled by ITAR to a foreign person in the U.S. or abroad also constitutes a defense service under the regulations.

Foreign Persons: A foreign person is any natural person who is not a lawful permanent resident as defined in [8 U.S.C. §1101\(a\)\(20\)](#). It also includes any foreign corporation, business association, partnership, trust, society, or any other entity or group that is not incorporated or organized to do business in the United States, as well as international organizations, foreign governments, and any agency or subdivision of foreign governments. ITAR specifically identifies legal resident aliens (Green Card holders) and certain persons protected under political asylum as eligible to receive ITAR controlled information.

Fundamental Research: Includes basic or applied research in science and/or engineering at an accredited institution of higher learning in the United States where the resulting information is ordinarily published and shared broadly in the scientific community. Actual publication is not required; the requirement is only that the material is of the type “ordinarily published and shared”. Fundamental research is distinguished from research that results in information that is restricted for proprietary reasons or pursuant to specific U.S. Government access and dissemination controls. “Fundamental research” is defined in the EAR at [15 CFR §734.8](#) and in ITAR at [22 CFR §120.11](#). For ISU consideration, a key determination of fundamental research is the absence of ANY imposed and accepted restrictions on the publication of the research outcomes (except normal restriction for adequate review procedures).

Public Domain: Information that is published and generally accessible to the public: (1) through sales at newsstands and bookstores; (2) through subscriptions available without restriction to anyone who may want to purchase the published information; (3) through second class mailing privileges granted by the U.S. Government; (4) at libraries open to the public or from which the public can obtain documents; (5) through patents available at any patent office; (6) through unlimited distribution at a conference, meeting, seminar, trade show or exhibition that is generally accessible to the public and is in the United

States; (7) through public release (*i.e.*, unlimited distribution) in any form (not necessarily published) after approval by the cognizant U.S. government department or agency; and (8) through **fundamental research**. 22 CFR §120.11.

Technical data ([ITAR at 22 CFR §120.10](#)): Includes (1) Information, other than software as defined in [22 CFR §120.10\(4\)](#), which is required for the design, development, production, manufacture, assembly, operation, repair, testing, maintenance or modification of defense articles. This includes information in the form of blueprints, drawings, photographs, plans, instructions and documentation; (2) Classified information relating to defense articles and defense services; (3) Information covered by an invention secrecy order; and (4) Software as defined in [22 CFR §121.8\(f\)](#) directly related to defense articles. Excluded from this definition is information concerning general scientific, mathematical or engineering principles commonly taught in schools, colleges and universities or information in the public domain as defined in [22 CFR §120.11](#). It also does not include basic marketing information on function or purpose or general system descriptions of defense articles.

c. Export Licenses

As indicated above, “export” is defined to include several events, such as a physical transfer/disclosure of an item outside the U.S. by any of several methods. An export license is required whenever items on the control list are to be transferred to a foreign country.

“Export” also includes any transfer/disclosure in any form of a controlled item or information *within the U.S.* to anyone who is a foreign national (not a U.S. citizen or permanent resident). This latter activity is called “deemed export”. Because of the large population on campus of foreign nationals, it is particularly applicable to ISU research activities. In response to the “deemed export” rule, unless an exclusion or exemption is applicable, the University may be required to obtain a government-issued export license before allowing the participation of foreign nationals (faculty, staff, or students) in the affected research or interaction. Please note that “deemed export” includes “disclosure in any form”. This can include a mere casual technical discussion with a faculty colleague. Please be aware that, in some cases, a license may not be granted because of the country involved; and if granted, it may take too long to acquire to be useful.

A license may be required for any of the following:

- Collaborations with foreign nationals on research.
- Participation of foreign nationals (faculty members or students) in export controlled research.
- Technical exchange programs.
- Transfer of research equipment or information about research equipment overseas.
- Laboratory visits by foreign scholars.
- Presentation (or mere discussion) of previously unpublished research at conferences/meetings where foreign nationals may be present. **This includes presentations made in foreign countries.**

d. Export Control Regulations

Federal export control laws have been in effect for many years. They restrict the export of goods, technologies, related technical data, and certain services in support of both protecting the national security interests and domestic economic activity. The events of 9/11 resulted in heightened concerns about national security and stricter interpretation and enforcement of export control laws and regulations by several agencies of the federal government.

Federal export control is managed through three primary activities. First are the Export Administration Regulations (the "EAR," implemented by the Department of Commerce for items that have both a potential military application and a commercial opportunity). Second are the International Traffic in Arms Regulations ("ITAR," implemented by the Department of State for military items and defense services). Third are the U.S. Treasury's Office of Foreign Assets Control ("OFAC"), which administers and enforces economic and trade sanctions to protect foreign policy and national security goals.

1. Export Administration Regulations (EAR)

The Export Administration Regulations (EAR), 15 CFR §§730-774 (http://www.access.gpo.gov/bis/ear/ear_data.html), are administered by the U.S. Department of Commerce, and they regulate the export of so-called "dual use" items, i.e., technology designed for commercial purposes and with potential military applications, such as computers, aircraft, and pathogens. The list of EAR-controlled items (the "Commerce Control List" or "CCL") is the list of items subject to EAR control, and it is published at 15 CFR §774, Supplement 1 (<http://www.access.gpo.gov/bis/ear/pdf/ccl0.pdf>).

An alphabetical list of CCL items is available at (<http://www.access.gpo.gov/bis/ear/pdf/indexccl.pdf>).

The CCL categorizes covered items into the following ten categories (each with subdivisions):

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

Unless an exclusion or exemption applies, a license is required to export goods and technologies listed on the CCL. A license will be denied for export to embargoed countries - Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

2. International Traffic In Arms Regulations (ITAR)

The International Traffic in Arms Regulations (ITAR), 22 CFR §§120-130 (<http://pmdtc.org/reference.htm>), are administered by the U.S. Department of State. The U.S. Munitions List is the list of ITAR-controlled items (the “U.S. Munitions List” or “USML”), and it is available at (http://pmdtc.org/docs/ITAR/2004/22cfr121_Part_121.pdf).

Through this list, the U.S. Department of State regulates the export of defense articles, defense services, and related technical data (“defense” means that the government has determined the article, service, or data to be inherently military in nature). The USML covers such items as chemical and biological agents in addition to various weapons, vehicles, missiles, equipment, and electronics. The items on the list have been determined by the Department of State to be inherently military in nature (basically, items designed to kill or defend against death in a military context). Also, all satellites and related technologies are controlled by ITAR as a result of the 1999 Congressional expansion of ITAR jurisdiction. This “related technology” clause generally is interpreted to mean anything associated with space flight, manned or unmanned, ground or space based. Like EAR, unless a specific exclusion or exemption applies, licenses are required for the export of an item on the US Munitions List. Also, like EAR, export here also includes “deemed export”.

3. OFAC Boycott

There is an additional area of restriction of which one needs to be aware. This is the Department of Treasury’s Office of Foreign Assets Control (OFAC); the OFAC administers and enforces economic and trade sanctions based on U.S. foreign policy and national security goals. These are focused on specific foreign countries and groups such as terrorists, international narcotics traffickers, and those promoting the proliferation of weapons of mass destruction. The program depends on the country involved and is subject to change.

This control relates to ISU research most directly in that the OFAC boycott program may prohibit conducting surveys of persons in boycotted countries. The current complete list of countries included in the boycott program may be viewed at <http://www.ustreas.gov/offices/enforcement/ofac/sanctions/>.

e. Export Control Regulations Exemption and Exclusions

There are several exclusions and an exemption that may enable University research to be excluded from export control restrictions.

1. Educational Instruction Exclusion

These control regulations do not apply to information presented in academic catalog-listed courses or in teaching labs associated with those courses. Faculty members teaching a University course may discuss what might otherwise be export-controlled technology in the classroom or lab without an export control license, even if foreign nationals (faculty members and/or students) are present. This exclusion is based on the

ITAR policy that “information concerning general scientific, mathematical, or engineering principles commonly taught in schools, colleges and universities, or information in the public domain” should not be subject to export control restrictions. [22 CFR §120.10](#).

2. Fundamental Research Exclusion

Fundamental research (basic or applied research in science and/or engineering at an accredited institution of higher learning in the U.S. that results in information that is ordinarily published and shared broadly within the scientific community) is normally excluded from export control regulations. Where University research meets this definition, information resulting from that research may be disclosed to foreign nationals and that disclosure is not subject to export control restrictions. Such exemptions do NOT cover release of materials and technologies associated with the research.

University research **WILL NOT QUALIFY** for this exclusion if: (1) The University or researcher accepts ANY restrictions on the publication of the information resulting from the research, other than limited prepublication review by research sponsors to ensure that proprietary information is not inadvertently disclosed in publication or to ensure that publication will not compromise the patent rights of the sponsor (ISU considers 90 days standard for such reviews) or (2) The research is federally funded and specific access and dissemination controls regarding the resulting information have been accepted by the University or researcher.

Three key elements of the fundamental research exclusion rule deserve special note: 1) it applies only to information, not to materials and technologies, 2) it **does not apply** to a sponsor’s existing proprietary information when some or all of that information is required to be held confidential, and 3) the exclusion is removed if the researcher or ISU accepts ANY restriction on publication, other than prepublication review.

3. Public Domain/Publicly Available Exclusion

Information that is [published and generally available to the public](#), as well as publicly available technology and software, is outside the context of the export regulations, with exceptions. This exclusion does not apply to encrypted software, to information believed to be used for weapons of mass destruction, or where the U.S. government has imposed access or dissemination controls.

4. Exemption for Disclosures to Bona Fide Full-time Employees

There is a further exemption for FULL TIME Employees. Note, that for this exemption to exist, positive ISU action must occur (step # 4). Export control regulations exempt disclosures of unclassified technical data in the U.S. by U.S. universities to foreign nationals where 1) the foreign national is the University’s bona fide full-time regular employee, 2) the employee’s permanent abode throughout the period of employment is in the U.S., 3) the employee is not a national of an embargoed country, and 4) the University informs the employee in writing that information disclosed may not be disclosed to other foreign nationals without governmental approval. Note also that most

graduate students are not regular full-time University employees and disclosures to them will not qualify for this exemption.

f. Violations

Violations can result in very serious consequences for both the University and the researcher (including fines up to \$1,000,000 and/or imprisonment for up to 10 years for individuals). These penalties apply to single violations; multiple violations in the same project can easily result in enormous penalties.

g. Research Subjects

Any research activity may be subject to export controls. Of particular interest is research involving any goods, technologies, or related technical data that is either 1) “dual use” (commercial in nature with possible military application [EAR applications]) or 2) inherently military in nature (ITAR applications).

Predominant areas of interest are:

- Computer Science, Information Systems, and Information Assurance
- Research with encrypted software
- Space sciences, and any activity to be conducted during space-based flight
- Engineering
- Research with controlled chemicals, biological agents, and toxins

In addition, any of the following may raise export issues:

- Sponsor restrictions on the participation of foreign nationals in the research
- The physical export of controlled goods or technology
- Indications from the sponsor or others that export-controlled information or technology will be furnished for use in the research

Real significance is also attached to any research with restrictions on the publication of the research results. Such restriction will almost automatically eliminate the university exemption (for fundamental research).

h. Education

One needs to be educated about export controls. You need to have a fundamental understanding of the subject to be able to know when to raise questions. You don't have to become an expert, but you need to know when to alert the University to a possible export controls issue. The materials on this web site have been developed for that purpose, and ISU is developing additional material on export controls to provide information for those who need it.

Any time you have a question about the application of export controls to any stage of a specific research project, please contact Sonja Klocker in the Office of the Vice Provost for Research. She will get you to the right person to get the answers you need.

Links and References

Following is a list of related links that provide more specific information on many of the details and fine points of Export Control. Addresses change often, and some may have changed since publication of this policy document, but these are believed to be correct.

National security considerations

ITAR

- [ITAR US Munitions List \(USML, a listing of defense articles, defense services, and related technical data subject to ITAR\), 22 CFR §121.1](#)
- [ITAR Short List](#)
- [International Traffic in Arms Regulations \(ITAR\), 22 CFR §§120-130](#)
- [Directorate of Defense Trade Controls, US Department of State;](#)
- [ITAR Amendments from April 1, 2004 through March 31, 2005](#)

Military and commercial application (“dual use”) considerations

EAR

- [EAR "Deemed Export Q&A"](#)
- ["Steps for Using the EAR," 15 CFR §732](#)
- [EAR CCL Alphabetical Index](#)
- [EAR CCL Index by ECCN Number](#)
- [EAR Commodity Control List \(CCL, a listing of goods and related technology subject to the EAR\), 15 CFR §774, Supp. 1](#)
- [EAR CCL Short List](#)
- [Export Administration Regulations \(EAR\), 15 CFR §§730-774](#)
- [EAR 99 \(additional “catch-all” category of goods/technology subject to the EAR but not on the CCL\), 15 CFR §734.3\(a\)](#)
- [Bureau of Industry and Security, US Department of Commerce](#)

Economic and trade sanctions

OFAC (Office of Foreign Assets Control)

- OFAC Boycotted Countries List
(<http://www.ustreas.gov/offices/enforcement/ofac/sanctions/>)
- OFAC List of Specially Designated Nationals and Blocked Persons List
(<http://www.ustreas.gov/offices/enforcement/ofac/sdn/>)

Additional Information Sources on Export Controls

- Council on Governmental Relations
- Association of American Universities