

# **U.S. Export Controls and MSU Research**

Technology Control Plan

July 2004

## **CONTENTS**

Overview	1
Applying Export Control Regulations to University Research	2
MSU Policies and Procedures	4
MSU Compliance Flow Chart	5
<b>Supporting Information</b>	
Definitions	7
NSDD 189 Policy Statements	8
U.S. Export Control Details	9
• Departments of State and Commerce	9
• Office of Foreign Assets Control, Department of Treasury	10
<b>Attachments</b>	
Export Control Certification	12
U.S. Munitions List	13
Commerce Control List	14

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## Overview

*Export control laws*\*—federal laws enforced by both the Department of Commerce (Export Administration Regulations, EAR) and the Department of State (International Traffic in Arms Regulations, ITAR)—have existed since 1979. They prohibit unlicensed transfer of information or material related to certain products and technologies overseas to anyone, including U.S. citizens, or to foreign nationals or representatives of a foreign entity on U.S. soil for reasons of national security and protection of trade. These laws apply to all research activities whether or not there is a specific citation to the regulations in the grant and contract award document governing the project. These laws also apply to export-controlled information or technology shared with researchers by others from government, industry, or other universities. The laws require that licenses be obtained for both export and dissemination to some non-U.S. citizens of certain items (*defense articles and restricted technologies with military applications*). Criminal sanctions, including fines and/or prison sentences for violators, can apply.

In addition, the Office of Foreign Assets Control in the Department of Treasury restricts exports, as well as imports, through economic sanctions against certain countries.

One objective of these laws is to prevent foreign citizens, industries, governments, or their representatives, from obtaining information or material that is contrary to the national security interests of the United States.

In the early 1980s, the higher education research community began discussing with federal officials the conflict that export restrictions on academic research activities created with the openness that typically exists in universities. Researchers were concerned that foreign faculty, students, and scholars not be singled out for restriction from their institutions' educational and research activities and that publication of research results not be restricted. The result of these discussions was the National Security Decision Directive (*NSDD 189*) issued in 1985. This directive clarified the definition of *fundamental research* and stated that fundamental research was not subject to the license requirements of export control regulations. It affirmed the long-standing policy of the U.S. government and the Department of Defense to not restrict publication and public presentation of unclassified, federally funded fundamental research results. In effect, under NSDD 189, the only way to restrict dissemination of research results is to classify the project.

Following the events of September 11, 2001, compliance with export regulations has come under greater scrutiny. On November 2, 2001, Condoleezza Rice, assistant to the

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\* Definitions of italicized terms appear in the "Supporting Information" section, p 7.

president for national security affairs, wrote to the co-chairman of the Center for Strategic and International Studies as follows: “In the context of broad-based review of our technology transfer controls that will begin this year, this Administration will review and update as appropriate the export control policies that affect basic research in the United States. In the interim, the policy on the transfer of scientific, technical, and engineering information set forth in NSDD-189 shall remain in effect, and we will ensure that this policy is followed.”

As a public university, Michigan State University (MSU) is committed to the widest possible public dissemination of scientific learning and research results. This mission is reflected in the formal policies of the university and in the operating procedures of its laboratories. Therefore, all information and data to be created or used at MSU must fall under the definition of fundamental research as set forth in NSDD 189.

To assure that MSU research complies with the regulations outlined above and discussed in more detail in the following pages, the university has developed this Technology Control Plan that describes procedures to assist faculty, staff, and students to conduct research without violating the laws. Researchers should consult this document when they intend to respond to a request for proposals that includes restrictions on publication or other dissemination of the results or when Contract and Grant Administration (CGA) notifies them that research they are proposing may be subject to export controls or trade sanctions.

### **Applying Export Control Regulations to University Research**

The majority of university research efforts are not restricted by export regulations. Export control may apply when one or more of the following concerns pertain to the research project:

- It has actual or potential military applications
- The destination country, organization, or individual is restricted by federal law
- The declared or suspected end use or the end user of the export compromises national security
- Economic protection issues are associated with the destination country

Export can take the form of oral, written, electronic, or visual disclosure, shipment, transfer, or transmission. The term “*export*” can mean not only technology leaving the shores of the United States (including transfer to a U.S. citizen abroad) but also transmitting the technology to an individual other than a U.S. citizen or permanent resident within the United States. Disclosure of research activities and results to a foreign researcher or student in an MSU laboratory is considered a “*deemed export*.”

Even if a research topic appears on a list of controlled technologies, an exclusion may exist for *fundamental research* when no restrictions apply to *publication* of the research or other dissemination of the information or, in some cases, when the research or

information is made public or is intended to be made public. Researchers may need to explain how their projects fit the definition of fundamental research and therefore are not subject to export restrictions.

Information becomes “published” or is considered as “ordinarily published” when it is generally accessible to the interested public through

- Publication in periodicals, books, print, electronic, or any other media available for general distribution to any member of the public or to those who would be interested in the material in a scientific or engineering discipline.
- Libraries open to the public
- Issued patents
- Release at an open conference, meeting, seminar, trade show, or other open gathering. A conference is considered open if all technically qualified members of the public are eligible to attend and attendees are permitted to take notes or otherwise make a personal record (but not necessarily a recording) of the proceedings and presentations.

In all cases, access to the information must be free or available for a fee that does not exceed the cost to produce and distribute the material or hold the conference (including a reasonable profit).

The fundamental research exemption does not extend to the for-profit sector, which might try to impose export controls on a university as a subcontractor when the prime contractor is required to accept the controls.

Universities, including MSU, are developing export control compliance programs, particularly for industry-funded projects accepted as subcontracts where industry is not afforded the NSDD 189 fundamental research exemption. Such programs require appropriate responses to the following questions:

- Can you document and control precisely the persons working on the project?
- How do you know with whom they can share the work? How do you track and ensure this?
- Do you have appropriate physical precautions in place to prevent unauthorized access?
- Is there a compliance person at a sufficiently high level in the organization who can answer questions about export regulations, controls, and processes?

When a research topic appears on a list of controlled technology, a license may be required before the technology can be exported, i.e., disseminated. This requirement relates not only to tangible items (prototypes or software) but also to the research results themselves. Normal processing time for acquiring a license is 4-6 months after the application is submitted. Support from a governmental research sponsor can cut processing time to approximately 2 months.

The destinations to which exports are restricted vary according to the circumstances. Guidance and lists of restricted recipients are included in the following:

- Defense Trade Controls—Embargo Reference Chart (Dept. of State, Office of Defense Trade Controls)
- ITAR, 22 CFR §126.1—Prohibited exports and sales to certain countries (Dept. of State, Office of Defense Trade Controls)
- Commerce Control List Overview and the Country Chart (Dept. of Commerce, Bureau of Industry and Security)
- Sanctions Program and Country Summaries (Department of Treasury, Office of Foreign Assets Control); includes countries, organizations and individuals who commit, threaten to commit, or support terrorism

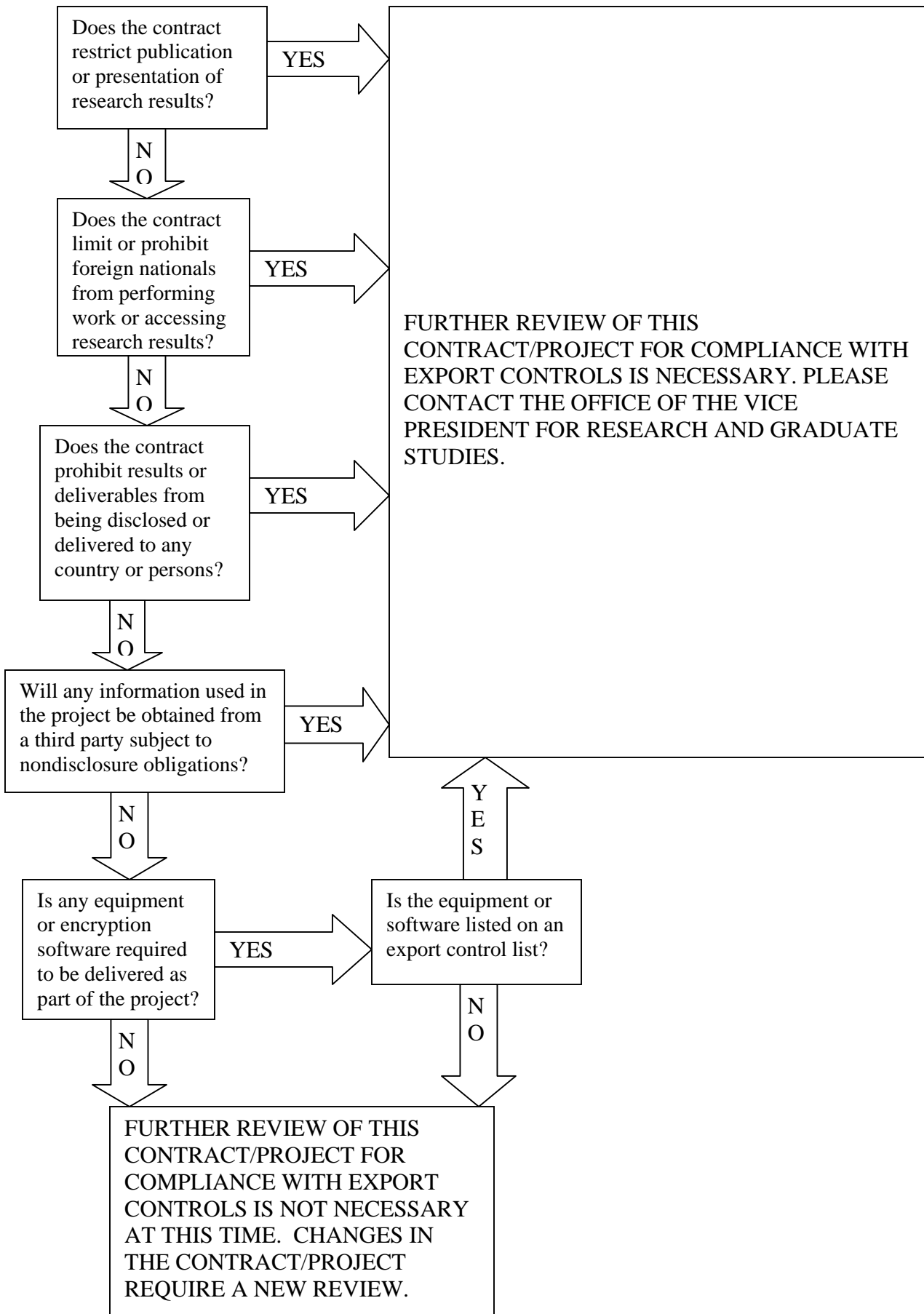
Additional information and links to source documents are available in the “Supporting Information” section below.

### **MSU Policies and Procedures**

Compliance with export regulations at MSU will be accomplished principally by ensuring that research conducted under the authority of MSU remains “fundamental research” as articulated by National Security Decision Directive 189 and that scholars retain the unrestricted right of first publication of research findings as required by university policy.

ITAR and EAR laws may be cited in federal grants and contracts or federal subgrants or subcontracts as specific requirements or in the RFP as a condition for acceptance of any resulting award. However, these laws are in force whether or not they are specifically cited in a sponsored project award agreement. If export laws are cited in the award document, the preferred action is to delete the reference or to have the sponsor formally acknowledge that the project is afforded the fundamental research exclusion for university based basic and applied research.

The flow chart that follows is intended to guide MSU researchers in complying with export control requirements.



The compliance procedure to be followed at MSU is summarized below:

- The Office of the Vice President for Research and Graduate Studies (OVPRGS) in cooperation with Contract and Grant Administration (CGA) will inform researchers and administrators about export restrictions and MSU's procedures for complying. A training DVD will be available to departments and on a secure Web site. For research efforts whose sponsors and/or titles suggest that export control issues may exist, researchers will be asked to submit an Export Control Certification form (see Attachment 1).
- Researchers, in cooperation with CGA, will screen new funding opportunities for
  - possible restrictions on publishing or presenting research results
  - limitations or prohibitions that restrict foreign nationals from performing or accessing research results
  - prohibitions that restrict results or deliverables from being disclosed or delivered to any country or persons
  - the need to use information from a third party that is subject to nondisclosure obligations
  - the possibility that equipment or encryption software will be required as a project deliverable.

If any of these conditions exist, researchers, in concert with CGA, should contact the Office of the Vice President for Research and Graduate Studies for assistance and further guidance.

- When proposing research that involves potentially sensitive topics covered by export controls, the PI and his or her dean will develop a compliance plan explaining how the project fits the definition of fundamental research. An inquiry to the sponsoring agency about the agency's intent and acceptable limits on exports can augment the PI's explanation of how the project meets the definition of fundamental research. A university Compliance Committee comprising representative associate deans for research, university legal counsel, a CGA representative, and an OVPRGS representative will approve the plan and monitor the project for compliance if it is funded.
- When negotiation with the sponsor is required before the contract can be accepted, the issue should be referred to the assigned CGA officer, who will keep the PI informed about the negotiations and their ramifications.
- If a sponsor proposes to modify the terms of an agreement to include export restrictions after acceptance of the award, then the sponsor should be required to identify any specific data or information subject to the export laws. The CGA officer must be involved in this negotiation and keep the PI fully informed about the ramifications of the new terms and conditions.
- Researchers should contact the Office of the Vice President for Research and Graduate Studies for assistance and further guidance when equipment controlled by export regulations is used in the U.S. for the conduct of fundamental research.
- In cases where technologies appear on export control lists, or questions arise about whether the effort is fundamental in nature, or restrictions on publications exist, or the technology is actually being exported (i.e., is not a deemed export), the PI must coordinate with his or her college and central administration to determine if a license application is appropriate.

Current MSU Compliance Committee members are

- John Baker, Associate Dean for Research, College of Veterinary Medicine
- David Campbell, Associate Dean for Research, College of Social Science
- Tom Coon, Associate Dean for Research, College of Agriculture and Natural Resources
- Dan Evon, Director, Contract and Grant Administration
- Audrey Gift, Associate Dean for Research, College of Nursing
- Justin McCormick, Associate Dean for Research, College of Osteopathic Medicine
- Estelle, McGroarty, Senior Associate Dean for Research, College of Natural Science
- Cordell Overby, Senior Assistant Vice President for Research and Graduate Studies and University Empowered Official
- Nigel Paneth, Associate Dean for Research, College of Human Medicine
- Michael Poterala, Associate General Counsel
- Ron Rosenberg, Associate Dean for Research, College of Engineering

## SUPPORTING INFORMATION

### Definitions

**Export** means the shipment or transport of goods or items (including electronic or digital equipment) to foreign nationals or the release of or sharing of restricted technology or data—orally or in writing—with foreign nationals.

**Deemed export** means

- the transfer of export controlled items in the U.S. to a foreign national.
- the use by a foreign national of export controlled technologies in the U.S.

**Export controls:** federal laws (Arms Export Control Act (Sec. 38) of 1976 and Export Administration Act of 1979) regulating (15 CFR 730-774 and 22 CFR 120-130) the distribution of identified defense articles (information and hardware) for military applications.

**Defense articles and restricted technologies with military applications** are listed in the Commerce Control List (CCL), 15 CFR 774, Supp. 1, and the Munitions Control List (MCL), 22 CFR 121.

**Empowered official (EO):** the administrative contact to assist researchers and administrators in the identification and management assessment of export control matters. The EO generally serves as the official university contact for governmental agencies with

regard to export control matters. As required by U.S. Department of State International Traffic in Arms Regulations (ITAR), the EO is authorized to sign license applications or other export control-related requests for governmental approval on behalf of the university.

**Foreign national** means person residing in the U.S. who is not a lawful permanent resident. This term also refers to and includes any foreign corporation, business association, partnership, trust, society, or any other group not incorporated or organized to do business in the United States, and any international organization, foreign government, or diplomatic entity.

**Fundamental research:** basic or applied research in science or engineering at an accredited institution of higher learning in the U.S. where the resulting information is not restricted in the form or content of its release to the public and is ordinarily published and shared broadly in the scientific community. For EAR, “published information” is information that has been, is about to be, or is ordinarily published. The ITAR requirement is that the information has been published.

**Public domain** means information that is published and generally accessible or available to the public (1) through sales at newsstands and bookstores; (2) through subscriptions which are available without restriction to any individual who desires to obtain or 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; (7) through publication in any form or media after approval by the cognizant U.S. government department or agency; and (8) through fundamental research.

**Publication** has different meanings for EAR and ITAR. For EAR, the requirement is that the information has been, is about to be, or is ordinarily published. The ITAR requirement is that the information will be published or has been published.

### **NSDD 189 Policy Statements**

(September 21, 1985 – see <http://www.aau.edu/research/ITAR-NSDD189.html>)

“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. Each federal government agency is responsible for: a) determining whether classification is appropriate prior to the award of a research grant, contract, or cooperative agreement and, if so, controlling the research results through standard classification procedures; b) periodically reviewing all research grants, contracts, or cooperative agreements for

potential classification. No restrictions 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.”

“Fundamental research is distinguished from research which results in information which is restricted for proprietary reasons or pursuant to specific U.S. government access and dissemination controls. University research will not be deemed to qualify as fundamental research if (1) the university or research institution accepts any restrictions on the publication of the information resulting from the research, other than limited prepublication reviews by research sponsors to prevent inadvertent divulging of proprietary information provided to the research by the sponsor or to insure that publication will not compromise patent rights of the sponsor; or (2) the research is federally funded and specific access and dissemination controls regarding the resulting information have been accepted by the university or the researcher.”

## **U.S. Export Control Details**

*The following information provides additional details about export controls and their application to university research.*

### **Departments of State and Commerce**

The Department of State regulates and restricts the transfer and export of technologies relating to military applications (including satellite technologies<sup>1</sup>) listed on the [U.S. Munitions List](#) (USML)<sup>2,3</sup> at 22 CFR<sup>4</sup> Part 121 under the International Traffic in Arms Regulations<sup>5</sup> (ITAR); see Attachment 2. The Department of Commerce regulates and restricts the transfer and export of so-called “dual use” technologies relating to civilian applications listed on the [Commerce Control List](#) (CCL) at 15 CFR Supplement No. 1 to Part 774 under the Export Administration Regulations<sup>6</sup> (EAR); see Attachment 3.

Export, in the context of these regulations, includes transfer of regulated technologies and/or technical data concerning these technologies to foreign nationals whether in the United States or in another country. If research involves the listed technologies, MSU may be required by ITAR and/or EAR regulations to obtain a federal license before allowing foreign nationals to participate in the research or to receive any research related

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<sup>1</sup> See [67 FR 15099](#) for guidance concerning exemptions for articles fabricated for fundamental research purposes.

<sup>2</sup> Alternate source for the [U.S. Munitions List](#) provided by the Federation of American Scientists.

<sup>3</sup> An asterisk precedes certain defense articles in U.S. Munitions List. The asterisk means that the article is deemed to be "significant military equipment" to the extent specified in 22 CFR §120.7.

<sup>4</sup> The [Code of Federal Regulations](#) (CFR) includes general and permanent Federal rules and is divided into 50 titles that represent broad areas. Each volume (title) of the CFR is updated once each calendar year and updated volumes are issued on a quarterly basis. New rules, notices of Federal executive departments and agencies and organizations, as well as executive orders are published daily in the [Federal Register](#).

<sup>5</sup> Codified at [22 CFR §120-130](#).

<sup>6</sup> Codified at [15 CFR §730-774](#).

information – orally or in writing. **Note:** export control laws specify countries to which export licenses will be denied and exports of defense items or services are prohibited in their entirety (see the [Defense Trade Controls – Embargo Reference Chart](#) for ITAR restricted and embargoed countries).

The rules may be confusing when dealing with an immigrant alien who possesses a green card for permanent residence in the U.S. For the purposes of export control regulations, such an individual is a “U.S. person” and *can* be allowed access to export-controlled information without an export license.

The rules may also be confusing when dealing with an MSU employee who is an immigrant alien who does not possess a green card for permanent residence in the U.S. Only ITAR provides<sup>7</sup> a limited exemption to disclose technical data at MSU to full-time foreign employees under specific conditions. Such possible disclosures should be discussed in advance with the *Empowered Official* at MSU.

### **Office of Foreign Assets Control, Department of Treasury**

To further U.S. foreign policy and national security objective, exports (and imports) are also restricted by the Office of Foreign Assets Control, Department of Treasury, which administers and enforces laws imposing economic sanctions against hostile targets, including countries. The [List of Sanctioned Countries](#) currently includes:

- |                        |                   |           |
|------------------------|-------------------|-----------|
| - the Balkan countries | - Burma (Myanmar) | - Cuba    |
| - Iran                 | - Iraq            | - Liberia |
| - Libya                | - North Korea     | - Sudan   |
| - Syria                | - Zimbabwe        |           |

Federal export laws cover a broad spectrum of science and engineering; however, they allow exemptions for information in the *Public Domain*. This includes published information that is generally accessible or available to the public through fundamental research, defined as basic and applied research in science and/or engineering at an accredited institution of higher education within the United States where the resulting information is ordinarily published and shared broadly in the scientific community (i.e., when there are no restrictions on publication beyond those intended to protect pre-existing proprietary information or intellectual property rights). Research projects are not eligible for the fundamental research exemption when MSU or its researchers accept any restrictions on publication of scientific or technical information resulting from the project or the Federal government designates “specific access and dissemination controls protecting information resulting from the research.”

It is important to understand the extent for both ITAR and EAR fundamental research exemptions. ITAR<sup>8</sup> allows fundamental research transfers without a license to foreign accredited institutions of higher learning, government research centers, or established government funded private research centers located within countries of the North Atlantic

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<sup>7</sup> [22 CFR §125.4\(10\)](#)

<sup>8</sup> Codified at [22 CFR §123.16\(b\)\(10\)](#)

Treaty Organization (NATO) or countries that have been designated as major non-NATO allies. In comparison, EAR<sup>9</sup> exempts all fundamental research, except for certain encryption software.

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<sup>9</sup> Codified at [15 CFR §734.3\(b\)\(3\)\(ii\)](#)

# Attachment 1

Certification for (check one)  
\_\_\_\_ proposal    \_\_\_\_ award

MSU A/C  
or APP No. \_\_\_\_\_

## Export Control Certification

By signing this certification, I confirm that I have reviewed the United States Munitions List (as documented in Part 121 at [http://www.pmdtc.org/docs/ITAR/22cfr121\\_Part\\_121.pdf](http://www.pmdtc.org/docs/ITAR/22cfr121_Part_121.pdf)) and the Commerce Control List (as documented in Part 774, Category 0 through Category 9 at <http://www.gpo.gov/bis/ear/pdf/744.pdf>), and believe that the topics and issues addressed by my research project titled “\_\_\_\_\_” and sponsored by the \_\_\_\_\_ **are / are not (circle one)** included among the designated articles and/or services controlled by the Arms Export Control Act (22 U.S.C. 2778) and the Export Administration Act (50 U.S.C. 2401). Additionally, I acknowledge that the sponsor has not imposed restrictions on publications that may develop from this project, and that this research effort is fundamental in nature.

Should an award result, I agree to review the Munitions List and the Commerce Control List again at that time and obtain the concurrence of the OVPRGS on this certification. I further agree to monitor the Munitions List and the Commerce Control List on a quarterly basis for changes that may encompass this particular research or the by-products of this research.

I acknowledge that it is my responsibility, as principal investigator on this project, to inform all parties participating in this research effort (including subcontracted parties) of their responsibility to similarly adhere to the conditions outlined in this document.

Signature of PI(s): \_\_\_\_\_ Date: \_\_\_\_\_  
(Include Printed or Typed Name of Signer)

\_\_\_\_\_ Date: \_\_\_\_\_

Concurrence of Chairperson(s): \_\_\_\_\_ Date: \_\_\_\_\_  
(Include Printed or Typed Name of Signer)

\_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_ Date: \_\_\_\_\_

Concurrence of College Dean's Office(s): \_\_\_\_\_ Date: \_\_\_\_\_  
(Include Printed or Typed Name of Signer)

\_\_\_\_\_ Date: \_\_\_\_\_

Concurrence of the Office of the Vice President for Research & Graduate Studies: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_ Cordell Overby

**ATTACHMENT 2**  
U.S. Munitions List (22 CFR Part 121)

**CATEGORIES**

- I. Firearms
- II. Artillery Projectors
- III. Ammunition
- IV. Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs and Mines
- V. Explosives, Propellants, Incendiary Agents, and Their Constituents
- VI. Vessels of War and Special Naval Equipment
- VII. Tanks and Military Vehicles
- VIII. Aircraft, [Spacecraft] and Associated Equipment
- IX. Military Training Equipment
- X. Protective Personnel Equipment
- XI. Military [and Space] Electronics
- XII. Fire Control, Range Finder, Optical and Guidance and Control Equipment
- XIII. Auxiliary Military Equipment
- XIV. Toxicological Agents and Equipment and Radiological Equipment
- XV. Spacecraft Systems and Associated Equipment
- XVI. Nuclear Weapons Design and Test Equipment
- XVII. Classified Articles, Technical Data and Defense Services Not Otherwise Enumerated
- XVIII. [Reserved]
- XIX. [Reserved]
- XX. Submersible Vessels, Oceanographic and Associated Equipment
- XXI. Miscellaneous Articles

## ATTACHMENT 3

[Commerce Control List](#) (scroll down) at 15 CFR Supplement No. 1 to [Part 774](#) of the [Export Administration Regulations](#) (EAR)<sup>10</sup>

### CATEGORIES<sup>11</sup>

0. [Nuclear Materials, Facilities and Equipment and Miscellaneous](#)
1. [Materials, Chemicals, Microorganisms, and Toxins](#)
2. [Materials Processing](#)
3. [Electronics Design, Development and Production](#)
4. [Computers](#)
5. [Telecommunications](#) and [Information Security](#)
6. [Sensors and Lasers](#)
7. [Navigation and Avionics](#)
8. [Marine](#)
9. [Propulsion Systems, Space Vehicles and Related Equipment](#)

GUIDANCE: [Section 732](#) provides a summary of steps to using the EAR, including an Export Control Decision Tree for “Subject to the EAR?” in Supplement No. 1.

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<sup>10</sup> The [Table of Contents](#) and [Definition of Terms Used](#) (Part 772) are useful to identify topics and define terms.

<sup>11</sup> Items subject to the EAR but not specified on the CCL are identified by the designator "EAR99" ([§734.3\(c\)](#)).