
**Export Controls:
Limits of the
Fundamental Research
Exclusion**

UC Compliance & Audit
Symposium

Overview

- Overview of export controls and the Fundamental Research Exclusion
- Historical Basis
- Its importance to academic research
- Limits and nuance
- Examples
- The future of the FRE

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Key Terms

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What is an Export?

Exports happen in many ways....

- UPS, mail, freight forwarder
- Hand carried on airplane, in luggage
- Fax, phone and email – Mouse Click
- “Deemed” exports



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What is a Deemed Export (EAR)?

Any release of technology or source code subject to the EAR to a foreign national. Such release is deemed to be an export to the home country or countries of the foreign national.



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What is Technology and Technical Data?

Technology (EAR):

- Specific information necessary for the "development", "production", or "use" of a product. (See part 772 of the EAR)

Technical Data (ITAR):

- Information, other than software as defined in §120.10(a)(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 or documentation. (See part 120.10 of the ITAR)

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What is a Foreign National?

Foreign National	Foreign Entity
<ul style="list-style-type: none">Any person not a U.S. citizen or legal permanent resident (green card holder)Any person not granted political asylumAny U.S. Person employed or representing a foreign entity	<ul style="list-style-type: none">Any partnership or group not incorporated or organized to do business in the U.S.Any foreign government

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What is a Defense Service (ITAR)?

The **furnishing of assistance** (including training) to foreign persons, whether in the United States or abroad in the **design, development, engineering, manufacture, production, assembly, testing, repair, maintenance, modification, operation, demilitarization, destruction, processing or use of defense articles**. (See [120.9 of the ITAR](#)).



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What is a Defense Article (ITAR)?



- Hardware, software and technical data specifically designed, developed, configured, adapted or modified for a military application, and
- Does not have predominant civilian applications, and
- Does not have a performance equivalent (defined by form, fit or function) to those of an article or service used for civil applications; or is specifically designed, developed, configured, adapted or modified for a military application, and has significant military



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ITAR Includes

- Commodities and technologies that have **predominant military use or space application;**
- Items that started out as having civil application but were later **adapted or modified for military application;**
- Dual-Use items that contain or use ITAR controlled articles/technology, i.e., "see through rule"



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Why is it important?

- Export controls are federal regulations that apply to all US persons and entities.
- Violations can result in criminal and administrative penalties.

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Enforcement Agencies

AGENCY: U.S. Department of State, Directorate of Defense Trade Controls (DDTC)

Regulations: International Traffic in Arms Regulations (ITAR)



- U.S. Munitions List (USML)
- Debarred List
- Nonproliferation Sanctions

AGENCY: U.S. Department of Commerce, Bureau of Industry and Security (BIS)

Regulations: Export Administration Regulations (EAR)



- Commerce Control List (CCL)
- Denied Persons List
- Entity List
- Unverified List

AGENCY: U.S. Department of the Treasury, Office of Foreign Assets Control (OFAC)

- Sanctions programs
- Specially Designated Nationals List



Fundamental Research Exclusion

"F.R.E."

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November 1, 2001
 Dr. Harold Brown
 Co-Chairman
 Center for Strategic & International Studies
 1200 K Street, N.W.
 Washington, D.C. 20006

NSDD-189

Dear Dr. Brown:

Thank you for conveying the concerns of the Council on the Future of Technology and Public Policy regarding export controls and fundamental research. On behalf of the President, I would like to respond to your comments on this matter.

The key to maintaining U.S. technological preeminence is to encourage open and collaborative basic research. The linkage between the free exchange of ideas and scientific innovation, prosperity, and U.S. national security is undeniable. This linkage is especially true as our armed forces depend less and less on internal research and development for the innovations they need to maintain the military superiority of the United States. 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.

Again, thank you for your views on this important matter. I hope that we will be able to draw upon the Council's expertise as we review this issue in the coming months.

Sincerely,
 Condoleezza Rice, Assistant to the President for National Security Affairs

<http://www.fas.org/irp/offdocs/nsdd/nsdd-189.htm>

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**Fundamental Research Exclusion (FRE)
 From NSDD-189**

Fundamental research is "**basic and applied research** in science and engineering where the resulting information is ordinarily **published** and **shared broadly** within the scientific community, as distinguished from research the results of which are restricted for proprietary reasons or specific U.S. Government access and dissemination controls."



Publish



Share broadly

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What is published information (EAR) or in the public domain (ITAR)?

Information generally accessible to the public through:

- publication in periodicals, books, print, electronic, or other media available for general distribution (including websites that provide free uncontrolled access) or to a community of persons interested in the subject matter, such as those in a scientific or engineering discipline, either free or at a price that does not exceed the cost of reproduction and distribution;
- readily available at libraries open to the public or at university libraries;
- patents and published patent applications available at any patent office;
- general descriptions/marketing material relating to function/purpose of defense article (ITAR);
- release at an open conference, meeting, seminar, trade show, or other open gathering held in the U.S. (under ITAR) or anywhere (under EAR).

A conference or gathering is "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 of the proceedings and presentations.

Using the FRE

No restrictions can be accepted from a sponsor that:

- directly or indirectly prohibit dissemination or publication of research results, or
- mandate foreign national restrictions as to who can access research

Except for:

- Limited pre-publication review by sponsors within a reasonable timeframe but

Only to:

- prevent inadvertent divulgence of proprietary information or government classified information (as having been mutually defined) and provided by the sponsor, or
- to ensure that pre-defined proprietary content will not compromise the sponsor's patent rights


Limits of the FRE



Is the Project Export Controlled?

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From the State Dept....




Defense Services

U.S. Department of State

- The provision of defense services using exclusively public domain information **IS** controlled by the ITAR
 - There is no references to fundamental research in the definition of defense services in §120.9
 - Per §124.1(a): “The requirements of this section apply whether or not technical data is to be disclosed or used in the performance of the defense services...(e.g., all the information relied upon by the U.S. person in performing the defense service is in the public domain or is otherwise exempt from the licensing requirements of this subchapter pursuant to §125.4).”

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Defense Services

U.S. Department of State

- Provision of defense services for items exported by U.S. institutions of higher learning **IS** controlled by the ITAR
 - §125.4(d)(1) contains a licensing exemption for the provision of such defense services (with certain limits)
 - Countries of §123.16(b)(10)(i) and such nationals doing international fundamental research under aegis of an accredited U.S. institution; and
 - Direct support of fundamental research at U.S. institutions or qualified institutions/research centers within same countries within §123.16(b)(10)(i)
 - Only discussions on assembly or integration into scientific...satellite
 - Does NOT cover launch activities, MTCR articles or SME, or Tech Data/SW
 - Otherwise an export license or agreement is required

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Research Contracts and Grants

- **Funding opportunities and research agreements may contain:**
 - Publication restrictions
 - Foreign national restrictions (i.e. restrictions based on citizenship or nationality)
 - Restrictions limiting or prohibiting transfer of information provided by sponsor
- **Accepting these restrictions nullifies the Fundamental Research Exclusion**

Other Reasons a Project May Be Controlled

The research

- Involves the use of ITAR equipment, materials or technical data
- Has an exclusive military or spacecraft end-use
- Involves the development or receipt of ITAR or EAR export controlled technology

The faculty member agreed to restrictions on publication or foreign national access "on the side".

~~SIDE DEALS~~

Technologies likely to trigger export controls or discussion of export controls

- **Materials science**
 - Materials used on airplanes, rockets, space vehicles that need a certain hardness or need to withstand high heat
 - Paints
- **Computer science**
 - Artificial intelligence
- **Engineering**
 - Combustion – basic research could be FRE but can become controlled when research is related to rocket fuel
 - Sensors
- **Optics**
 - Mirrors



University of Tennessee Professor Found Guilty on 18 Counts of Export Violations



J. Reece Roth

Jurors found University of Tennessee professor emeritus J. Reece Roth guilty of 18 charges involving the Arms Export Control Act this morning.

Jurors in U.S. District Court deliberated nearly eight hours starting Tuesday before announcing their verdict.

Roth was accused of allowing foreign national graduate students access to information on a U.S. Air Force defense project.

Related links

- Indictment of John Roth and Alessandro Ciose Technologies
- University of Tennessee Faculty page on J. Reece Roth

Assistant U.S. Attorney Will Mackie said that the case already has resulted in tighter restrictions by universities across the country, including UT, on the handling of defense research.

"National security issues are matters that should be everyone's concern, even among those in an academic setting," Mackie said. "Everyone has a responsibility to be careful in what they are doing."

Areas of Vulnerability:

- International Travel
- Certain On-Campus Activities

Export Control Issues Related to Travel Abroad

- Taking certain items outside the US might require a license, for example:
 - Laptops
 - Cell phones
 - Data, technology
 - Blueprints, schematics



Areas of Vulnerability:

On Campus Activities

- Non-FRE Research
- Recharge Centers
- Facility Usage Agreements
- Satellite Technology
- ITAR in Classroom
- Gray areas and Red Flags

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Gate Keepers

Openness in research and deemed exports	Contracts, agreements, MTA's, software licenses, NDA's, purchasing
Shipping	Purchasing, department administrators, faculty, graduate students, post docs
Restricted party screening	Contracts, agreements, MTA's, software licenses, NDA's, international center, accounting (money transfers), HR
Travel	Department administrators, faculty, graduate students, post docs
Sanctioned country issues (services, travel, exports & imports)	IRB social behavioral research; departments: anthropology, history, art, etc. travel and research; faculty serving on PhD committees

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Questions or Comments?

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Additional Resources

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Export Laws and Regulations

- Department of State: International Traffic in Arms Regulations (ITAR) <http://www.treas.gov/offices/enforcement/ofac/>
- Department of Commerce, Bureau of Industry & Security (BIS): Export Administration Regulations (EAR) http://www.access.gpo.gov/bis/ear/ear_data.html
- Department of the Treasury, Office of Financial and Asset Controls (OFAC) <http://www.treas.gov/offices/enforcement/ofac/>
- U.S. Customs Regulations
Imports -- Harmonized Tariff Code (HTS #) <http://www.usitc.gov/tata/hts/bychapter/index.htm>
Schedule B (US Census) <http://www.census.gov/>

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AGENCY: U.S. Department of State, Directorate of Defense Controls (DDTC)

Regulations: International Traffic in Arms Regulations (ITAR)

- U.S. Munitions List (USML)
- Debarred List
- Nonproliferation Sanctions

- Firearms
- Military Electronics
- Artillery Projectors
- Fire Control, Range Finder, Optical and Guidance and Control Equipment
- Ammunition
- Auxiliary Military Equipment
- Launch Vehicles, etc...
- Toxicological Agents and Equipment and Radiological Equipment
- Explosives, Propellants, Incendiary Agents and Their Constituents
- **Spacecraft Systems and Associated Equipment**
- Vessels of War and Special Naval Equipment
- Nuclear Weapons Design and Related Equipment
- Tanks and Military Vehicles
- Classified Articles, Technical Data and Defense Services Not Otherwise Enumerated
- Aircraft and Associated Equipment
- Submersible Vessels, Oceanographic and Associated Equipment
- Military Training Equipment
- Protective Personnel Equipment


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 AGENCY: U.S. Department of Commerce, Bureau of Industry and Security (BIS)
Regulations: Export Administration Regulations (EAR)

- Commerce Control List (CCL)
- Denied Persons List
- Entity List

0 - Nuclear Materials, Facilities and Equipment and Misc.
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

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 AGENCY: U.S. Department of the Treasury, Office of Foreign Assets Control (OFAC)

- Sanctions programs
- Specially Designated Nationals List

o Balkans, Belarus, Burma, Cote d'Ivoire, **Cuba**, Democratic Republic of the Congo, **Iran**, Iraq, Former Liberian Regime of Charles Taylor, North Korea, **Sudan**, **Syria**, and Zimbabwe

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Collaboration with Sanctioned Countries (OFAC)

The most restrictive sanctions programs (Cuba, Iran, North Korea, Sudan and Syria) prohibit U.S. Persons from:

- A broad range of services and transactions that benefit or provide value.
- Export of products, software, and transfer of technical data.
- Providing educational services and technical services, even where no monetary compensation occurs.

U.S. Persons:

- Any person within the U.S.
- Any U.S. citizen or permanent resident alien, wherever physically located
- Any entity or institution organized under U.S. law, including foreign branches

Licenses can be obtained from OFAC on case-by-case basis, but terms must be strictly complied with.

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