

# Mastering Research Administration

A Complete Guide to the  
CRA<sup>®</sup>, CPRA<sup>®</sup>, and CFRA Exams

**Farin Kamangar, MD, PhD, CRA**

University Distinguished Professor  
Associate Vice President for Research  
Morgan State University  
Baltimore, MD, USA

**Lulu Jiang, PhD**

Program Administrator  
National Transportation/SMARTER Centers  
Morgan State University  
Baltimore, MD, USA

**Rebecca Steiner, CRA**

Grants Manager  
Office of Research Administration  
Morgan State University  
Baltimore, MD, USA

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- Generative artificial intelligence was used to assist with drafting some of the teaching material and answers to some of the questions. All multiple-choice questions were written by the authors.
- While it is generally considered best practice to avoid negative phrasing and answer choices such as “all of the above” or “none of the above” in standardized multiple-choice questions, these materials were created for training purposes. In some instances, we have intentionally used such formats.

Correspondence to: [farin.kamangar@morgan.edu](mailto:farin.kamangar@morgan.edu)

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# CHAPTER 15

## Export Controls

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## 15.1. Introduction

Export controls refer to a collection of federal laws and regulations that govern the transfer of certain commodities, technologies, information, and software deemed strategically important to the United States. These controls are designed to protect national security interests, support economic objectives, and advance foreign policy goals.

Export control requirements apply not only to physical shipments or transfers leaving the United States, but also to the release or disclosure of controlled technology or information to foreign nationals within the U.S.—a situation known as a “deemed export.”

## 15.2. Deemed Export

A “deemed export” is an export of technology or source code to a foreign person within the United States.

Examples of a deemed export of technology or source code:

- Visual inspection of controlled technology,
- Oral exchange of technical information, or
- Guidance given on the practice or application of a technology

The definition of a foreign person includes:

- Any foreign government,
- A foreign corporation or organization that is not incorporated or organized to do business in the U.S., or
- Anyone who is not a U.S. citizen or lawful permanent resident (a green card holder).

## 15.3. Regulatory Frameworks for Export Controls

Three major export control regulatory schemes imposed by the U.S. Government to protect national security interests and promote foreign policy objectives are:

- [International Traffic in Arms Regulations \(ITAR\)](#):  
Administered by the [Directorate of Defense Trade Controls \(DDTC\)](#) within the **U.S.**

**Department of State**, ITAR governs exports related to military, intelligence, and space applications. The regulatory code governing defense articles, defense services, and related technical data in export controls [ITAR](#) is defined in 22 C.F.R. 120130. The statute and implementing regulations control who may receive defense-related items and information. Items with clear military or intelligence applications are typically listed on the [United States Munitions List \(USML\)](#). The DDTC issues licenses for transfers of USML items, registers U.S. exporters of defense articles, and enforces compliance with ITAR. Exporters working with defense-related goods or technical data must register with DDTC and follow its licensing rules. (Note: “Traffick” is the spelling used in many training materials and the regulation title — it reflects historical spelling.)

- **[Export Administration Regulations \(EAR\)](#):**  
Managed by the **U.S. Department of Commerce** and administered by the **Bureau of Industry and Security (BIS)**, EAR governs the export of controlled items, including certain commodities, software, and technologies. Items on the [Commerce Control List \(CCL\)](#) are each issued an [Export Control Classification Number \(ECCN\)](#), designating the type of item and the reason(s) for control (e.g., national security, missile technology, encryption, etc.). [BIS](#) issues export licenses for CCL items, enforces EAR violations, and provides guidance on classification and licensing exceptions. Exporters must classify items under the CCL to determine licensing requirements and licensing policy.
- **[Office of Foreign Assets Control \(OFAC\) Sanctions](#):**  
[Federal economic and trade sanctions](#) are administered and enforced by OFAC, situated within the **U.S. Department of Treasury**. OFAC regulates the licensing of transactions involving sanctions and embargoes. Either comprehensive or selective (i.e., targeted), sanctions may apply to countries, companies, or individuals. The current list of comprehensively embargoed countries/territories includes North Korea, Iran, Cuba, Syria, Sudan, and Russia, as well as specified regions of Ukraine including Crimea, Donetsk, and Luhansk.

## 15.4. Export Controls at Institutes of Higher Education

Certain items are exempt from export control laws, including fundamental research, public domain information, and educational information. It is important to differentiate which research is considered “fundamental.”

### 15.4.1. Exemptions from Export Control Laws

#### 15.4.1.1. Fundamental Research Exclusion

- Fundamental research is exempt from export control laws.
- Fundamental research specifically refers to basic and applied scientific or engineering research for which the resulting knowledge or information discovered is ordinarily published and shared openly among the scientific community.
- Research qualifying as fundamental has no publication or dissemination restrictions on the scientific and technical information produced.

#### 15.4.1.2. Education Exclusion

- [ITAR](#) deems that information about general scientific, mathematical, or engineering principles commonly taught in schools, colleges, and universities is exempt from export control laws.
- [EAR](#) determines that information released through instruction in catalog-listed courses or their associated teaching laboratories at academic institutions is excluded from export control laws.

#### 15.4.1.3. Public Domain Exclusion

Information that has been published and is publicly accessible through books, websites, libraries, journals, or other open sources, i.e., in the public domain, does not require an export control license.

### 15.4.2. Potential Export Control Concerns

Institutes of higher education, including schools, colleges, and universities, need to be prepared to obtain an export control license for the following:

- Shipment of items to a location outside of the U.S.,
- Travel to certain sanctioned or embargoed countries for research and teaching,

- Transfer of export-controlled technical data to persons located outside of the U.S.,
- Sharing of export-controlled scientific or technical information with foreign nationals within the U.S., i.e., a deemed export.

### 15.4.3. Non-Compliance Consequences

Non-compliance of proper export control laws and regulations can result in substantial monetary and criminal penalties against the institution and the individual, including:

- [EAR](#) civil penalties per violation up to \$373,474 (as of January 15, 2025, and adjusted for inflation annually),
- [ITAR](#) civil penalties per violation up to \$1,256,607 (depending on the regulation violated),
- Note: the government generally has the authority to charge more than one violation per transaction,
- [EAR](#) and [ITAR](#) criminal fines for willful violations of up to \$1 million and/or 20 years' imprisonment,
- Academics have been given prison sentences in connection with willful violations,
- Denial of export privileges under EAR, and
- Debarment from participating directly or indirectly in the export of ITAR-controlled defense articles, technical data, or defense services.

## 15.5. Summary

Export controls are U.S. laws that regulate the transfer of sensitive commodities, technologies, software, and technical data to foreign countries and foreign nationals, including those located within the United States ("deemed exports"). These rules aim to protect national security, support foreign policy, and safeguard economic interests. Three main systems govern these controls:

- **ITAR** for defense and military-related items,
- **EAR** for dual-use technologies, and
- **OFAC** for sanctions and embargoes.

Universities and other institutes of higher education benefit from exclusions for fundamental research, public domain information, and classroom instruction, but export controls may still apply to international shipments, research involving restricted technology, travel to sanctioned countries, or sharing controlled data with foreign individuals. Violations can result in severe civil or criminal penalties, making awareness and compliance essential.

## 15.6. Practice Questions

1. Export controls refer to U.S. laws and regulations that restrict the release of critical items, technologies, and services to \_\_\_\_\_.
  - a. Foreign country officials
  - b. Foreign governments
  - c. Foreign countries and foreign nationals outside the US
  - d. Foreign countries and foreign nationals inside and outside the US
  
2. Which of the following is NOT exempted from export control rules?
  - a. Educational information
  - b. Public domain information
  - c. Controlled unclassified information
  - d. Fundamental research
  
3. In the context of export controls, FOUO stands for:
  - a. For official use only
  - b. First order unclassified orders
  - c. Formal and official use only
  - d. Federal official use obligations
  
4. Export controls may be categorized as physical exports or deemed exports. Deemed exports refers to:
  - a. Export of educational and other exempt material
  - b. Release of critical information to foreign nationals within the U.S.
  - c. Release of critical information to permanent residents who are not U.S. citizens
  - d. Export of non-military but critical information to militia combatting unfriendly governments
  
5. Which of the following are considered a U.S. person?
  - a. Permanent residents of the U.S.
  - b. Asylees in the U.S.
  - c. U.S. companies
  - d. All of the above

6. ITAR stands for:
- International Transactions of Assets and Resources
  - International Traffick in Arms Regulations
  - International Treaties and Repatriations
  - International Treaty for Arms and Reconnaissance
7. ITAR primarily regulates the export of:
- Military, intelligence, and space applications
  - Financial transactions with foreign governments
  - Commercial, civilian applications
  - All of the above
8. ITAR is primarily regulated and administered by the:
- Department of Defense
  - Department of Treasury
  - Department of State
  - Central Intelligence Agency
9. Which one refers to the list of items controlled by ITAR?
- CCL
  - USML
  - USCL
  - CFR
10. In the context of export controls, EAR stands for:
- External Assets Regulations
  - Extraordinary Armamentarium Regulations
  - Export Administration Regulations
  - Exempt Arms Routing
11. EAR is primarily regulated and administered by the:
- Department of State
  - Department of Commerce
  - Department of Treasury
  - Department of Transportation

12. Which one refers to a list of items controlled by EAR?
- CCL
  - USML
  - USCL
  - CFR
13. Export of nuclear technology is primarily regulated by the Nuclear Regulatory Commission and the Department of:
- State
  - Defense
  - Energy
  - Commerce
14. Blocking of assets and trade restrictions for the purpose of foreign policy and national security are referred to as \_\_\_\_\_.
- Sanctions
  - Export controls
  - Subversion
  - Sabotage
15. Sanctions are administered and enforced by:
- OHSA
  - OFAC
  - OLAW
  - OSHA
16. Within the context of export controls and sanctions, OFAC stands for:
- Organized Foreign Attempt to Control
  - Office of Foreign Assets Control
  - Organized Forgery AND Conspiracy
  - Outgoing Financial Assets and Currencies
17. OFAC is under the:
- Department of State
  - Department of Commerce

- c. Department of Treasury
  - d. Office of Management and Budget
18. U.S. persons are required to comply with sanctions imposed by OFAC. U.S. persons means:
- a. U.S. citizens
  - b. U.S. citizens and permanent residents (green card holders)
  - c. All individuals and entities within the U.S.
  - d. All individuals and entities within the U.S., and U.S. citizens and permanent residents, regardless of where they reside
19. Which of the following is NOT a comprehensively sanctioned country (as of 2026)?
- a. Iran
  - b. Cuba
  - c. China
  - d. North Korea
20. Charles Lieber, a prominent Harvard chemist, was sentenced to years in prison. He was paid by the Chinese government to bring his knowledge to China and train young scientists as part of China's Thousand Talent Program. Dr. Lieber did not disclose this information when receiving U.S. federal grants from the NIH or DoD. The primary issue here is:
- a. Export controls
  - b. Sanctions against China
  - c. Money laundering
  - d. China's cruelty toward Uyghur people
21. An American professor receives a contract from the U.S. Air Force to conduct research and development for plasma actuators to control the flight of military drones. The research is sophisticated and under export control. Two Chinese students work on the project and have access to all the entire information about the plasma actuators. The access of these students to data \_\_\_\_ violate export control laws because they are \_\_\_\_\_.
- a. Does not, trainees.

- b. Does not, in the United States.
- c. Does not, under the supervision of an American professor.
- d. Does, foreign nationals.

## 15.7. Answers to Practice Questions

1. **D** Export controls cover both the physical shipment of controlled items and the transfer of controlled technical data or technology. Physical exports go to foreign countries (goods, hardware, and software shipments). Deemed exports occur when controlled technical information is disclosed to a foreign national **inside** the U.S. (for example, a foreign postdoc in a lab). In addition, transfers to foreign persons located outside the U.S. (including electronic transfers, cloud access, or meetings) are treated as exports.
2. **C** Some categories of information are explicitly exempt from export licensing (for example, truly public domain material, educational information, and the Fundamental Research Exclusion). [Controlled Unclassified Information](#) (CUI) is a government designation for sensitive but unclassified material (e.g., law-enforcement data, some research results under contract, and certain procurement or security-related material). CUI is not public domain and may be subject to access controls, handling requirements, or contractual restrictions
3. **A** [FOUO](#) stands for **For Official Use** Only and is an administrative marking used by some U.S. government agencies to indicate information that is sensitive for internal use but not classified (i.e., Not Confidential/Secret/Top Secret). It signals restricted handling and distribution, and while FOUO itself is not an export control label, it indicates information that may have sharing limits. Note that agency practices vary and some have moved from “FOUO” to the CUI framework.
4. **B** A “deemed export” is the release (whether visual, oral, written, electronic, or by access to equipment or labs) of controlled technology or technical data to a foreign national located within the United States. The law treats that release as if it were an export to the foreign national’s country of nationality. Deemed exports can occur through one-on-one discussions, sharing of blueprints, allowing hands-on access to controlled equipment, or even certain software access.
5. **D** Under U.S. export and sanctions rules, a “U.S. person” generally includes U.S. citizens, lawful permanent residents (green card holders), refugees and asylees, and U.S.-incorporated organizations (and their U.S. branches). This classification matters

because many controls differentiate between U.S. persons (who typically have broader access rights) and foreign persons (who may require licensing).

6. B [International Traffic in Arms Regulations \(ITAR\)](#) is the regulatory guide governing defense articles, defense services, and related technical data. The statute and implementing regulations control who may receive defense-related items and information. (Note: “Traffick” is the spelling used in many training materials and the regulation title — it reflects historical spelling.)
7. A [ITAR](#)'s scope is defense- and military-related: weapons, military vehicles, defense electronics, certain satellites and space systems, and defense-related technical data. Items with clear military or intelligence applications are typically listed on the [U.S. Munitions List \(USML\)](#). Commercial or purely civil items are more likely to fall under EAR, unless they have significant military utility and are listed on the USML.
8. C [The Directorate of Defense Trade Controls \(DDTC\)](#), an office within the U.S. Department of State, administers ITAR. DDTC issues licenses for transfers of USML items, registers U.S. exporters of defense articles, and enforces compliance with ITAR. Exporters working with defense-related goods or technical data must register with DDTC and follow its licensing rules.
9. B The [U.S. Munitions List \(USML\)](#) is the authoritative catalog of articles, services, and related technical data that are subject to ITAR controls. If an item appears on the USML, ITAR rules and State Department licensing apply. Determining whether an item belongs on the USML can be a complex classification exercise and sometimes requires a formal commodity jurisdiction (CJ) request.
10. C [Export Administration Regulations \(EAR\)](#) is the U.S. Department of Commerce's regulatory framework for controlling exports of dual-use items (commercial items with possible military applications), certain advanced technologies, and some less-sensitive military items. EAR covers a broad mix of hardware, software, and technical data not on the USML.
11. B [The Bureau of Industry and Security \(BIS\)](#) within the U.S. Department of Commerce administers EAR. BIS issues export licenses for [Commerce Control List](#)

(CCL) items, enforces EAR violations, and provides guidance on classification and licensing exceptions.

12. A The [Commerce Control List \(CCL\)](#) enumerates items controlled under EAR. Each CCL entry includes an [Export Control Classification Number \(ECCN\)](#) describing the type of item and the reasons for control (e.g., national security, missile technology, encryption, etc.). Exporters classify items under the CCL to determine licensing requirements and licensing policy.
13. C Nuclear technology and certain nuclear materials are highly regulated: the [Nuclear Regulatory Commission \(NRC\)](#) and the [Department of Energy \(DOE\)](#) set rules for export and transfer of nuclear-related technologies, equipment, and materials. These entities coordinate with the U.S. Departments of State and Commerce where appropriate, but DOE and NRC have primary roles for nuclear-specific regulations and licensing.
14. A Sanctions are legal restrictions (trade bans, asset freezes, transaction prohibitions) used to further foreign policy and national security goals. They can be targeted (against individuals, entities, or sectors) or comprehensive (against an entire country). Sanctions are separate from but may interact with export controls—for example, an item might be export-eligible but blocked to a sanctioned party.
15. B [The Office of Foreign Assets Control \(OFAC\)](#), within the U.S. Department of the Treasury, administers and enforces economic and trade sanctions. OFAC maintains lists, e.g., the [Specially Designated Nationals and Blocked Persons List \(SDN\)](#) that identify parties with whom U.S. persons are generally prohibited from transacting.
16. B
17. C
18. D
19. C As of 2026 (and through most recent frameworks), Iran, Cuba, and North Korea have been subject to longstanding comprehensive sanctions (broad prohibitions on virtually all trade and many financial transactions). China faces many

targeted restrictions (on technology, certain entities, and activities) but **not** a single comprehensive country-wide sanctions regime similar to North Korea's; instead, the U.S. uses targeted export controls, entity lists, and other measures for China-related issues.

20. A The Charles Lieber case centered on failure to disclose foreign funding and participation in foreign talent programs while receiving U.S. federal research grants, and also on alleged concealment tied to controlled technology and research collaboration risks. The core problems relate to export control and grant disclosure obligations: undisclosed foreign support can create prohibited transfers of controlled technologies and violate reporting requirements tied to U.S. funding.

21. D When research is controlled (e.g., military-related plasma actuator R&D under ITAR or sensitive EAR controls), allowing foreign students to access the full technical data can constitute an unauthorized export/deemed export. Even if the work is performed in the U.S. and supervised by a U.S. professor, access by foreign nationals (non-U.S. persons) to controlled technology or technical data requires evaluation and often a license. Unless the students are U.S. persons or a license/authorization is obtained, their access violates export control laws.