

# Santa Clara University

## Overview of Export Control Laws and Regulations

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## Overview

- **A Look at the U.S. Export Control System**
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  - Deemed Exports
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- **How This Impacts SCU**
  - International Travel
- **High Risk Areas for Universities**

# A Look at the U.S. Export Control System



## What Is An Export?

- Physical shipments of
  - U.S.-origin products
  - Products made from U.S.-origin technology
  - Products containing U.S. manufactured parts/components
- Electronic transfers
- Transfers of U.S.-origin technology/technical data, to a “foreign national,” via
  - Written communications, including **email** and fax
  - On computer servers, in labs, in shared research facilities
  - Oral transfers of information
- Reexports of controlled products, technology, or technical data



## Foreign National / Foreign Person

- Anyone person who is not a citizen or lawful permanent resident of the U.S. (i.e., green card holders)
  - ▶ Note that F-1 visa holders are not permanent residents
  - ▶ Note that H1-B and S-1 visa holders are not permanent residents
- Any Foreign Government
- Any Foreign Corporation or group that is not currently incorporated in the U.S. or organized to do business in the U.S.



## “Deemed Exports”

- Transfer of technology to foreign nationals who are physically located in the U.S.
  - May be a professor, employee of the University, student, or employee of a U.S. company
  - May be a visiting customer, visiting professor, visiting student
  - May be a foreign partner, affiliate, or research partner
- Transfer “deemed” an export to the foreign national’s country of citizenship
- Must determine whether the technology is subject to the regulations and whether a license is required to “export” to the foreign national.

## When might this affect SCU?

- Global Research Projects/Cross-border Collaboration
  - Funded by corporations, research partners, JVs, governments
    - ▶ Technology/Information
    - ▶ Supplies/Equipment
- Research Projects in U.S.
  - Restrictions on staffing, both faculty and student
  - Potential restrictions if working in commercial or government facility
- Academic Exchanges
  - Students/faculty outside of the U.S..
  - Supplies or equipment needed for teaching

## Potential Penalties

- Monetary Fines Up to \$250,000 per violation for civil penalties
- Monetary Fines up to \$1 Million per violation for criminal penalties
- Potential jail time
  - Professor Reece Roth, University of Tennessee
    - ▶ Government contract, Plasma
      - Used foreign-national students in his U.S. lab
      - Collaboration outside of the United States
    - ▶ Traveled with laptop containing export-controlled information  
Convicted and serving jail time

# The Basics of Export Control



## STATE

- ITAR
- Directorate of Defense Trade Controls
- Defense Articles
  - Identified Products specifically **designed**, configured, modified, or adapted for a military application
- Defense Services
- Technical Data



## COMMERCE

- EAR
- Civil / Commercial Products
- Dual-Use Products
- Related Technology



## TREASURY

- OFAC Regulations
- Office of Foreign Assets Control
- Financial Controls
- Sanctions
- Embargoes



# The ITAR





## ITAR Basics

- Regulations group commodities and technical data into “Categories” on the U.S. Munitions List (“USML”)
- As part of the President’s Export Control Reform initiative, the USML is transitioning to focus on more positive control criteria and an item’s capabilities rather than design intent
- A license is required for any export of technical data captured under the ITAR
- The State Department takes a minimum of three months to process applications
- Covers some satellite-related items and technical data

## Technical Data

- Information, other than software required for the
  - Design, development, production, manufacture, assembly, operation, repair, testing, maintenance or modification of defense articles
- Includes:
  - Information in the form of blueprints, drawings, photographs, plans, instructions and documentation
- Does NOT include:
  - Information concerning general scientific, mathematical or engineering principles
  - Information in the public domain
  - Basic marketing information on function or purpose or general system descriptions of defense articles

## New Definition of “Specially Designed”

- Prior to Export Control Reform, the USML covered items specially designed or modified for military applications (or end-users)
- As a part of Export Control Reform, a new definition of “specially designed” was adopted to make the USML less general and make the controls based more on the capabilities of items
- The new definition of “specially designed” is applicable in all of the USML categories that have been revised as a part of Export Control Reform, but not those categories that have not yet transitioned
- The new definition employs a “catch & release” methodology

## “Specially Designed” Cont.

Catch  
(a)

As a result of development, has properties peculiarly responsible for achieving or exceeding the controlled performance levels, characteristics, or functions described in the relevant USML paragraph

is a part, component, accessory, attachment, or software for use in or with a defense article

Release  
(b)

(b)(1) Commodity Jurisdiction determination

(b)(2) Fasteners, washers, spacer, etc.

(b)(3) Dual use in production

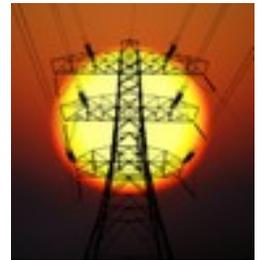
(b)(4) Design intent: dual use

(b)(5) Design intent: general purpose item

(b)(6) Design intent: use with EAR99 or AT-only controlled EAR items



# The EAR



## Export Administration Regulations (EAR)

- Applies to dual-use products, software, and technology
  - Dual-use implies a primarily commercial use with the possibility for a military one



Broad jurisdiction but specific  
licensing requirements

## What is Subject to the EAR?



- All
  - Products, software, and technology in the U.S., regardless of origin
  - U.S.-origin products, software, and technology that are located abroad
  - Products manufactured abroad that incorporate U.S.-origin parts or components
  - Products, software, or technology produced abroad that incorporate or are based on U.S.-origin technology
  - Certain activities of U.S. persons – for example those that assist in proliferation activities

## What is Not Subject to the EAR?



- All
  - Technology under the jurisdiction of another agency
  - Printed books
  - Publicly-available technology
  - Technology that has been or will be published
  - Technology that arises during or results from fundamental research
  - Educational technology
  - Technology in certain patent applications (Part 734.3)



# Sanctions and Embargoes



## Office of Foreign Assets Control

- Country-specific sanctions are administered by the Department of the Treasury's ("Treasury") Office of Foreign Assets Control ("OFAC")
- These rules restrict trade, investment, and financial transactions with certain countries by U.S. persons (wherever located), U.S. companies, including foreign branches, and, in some instances, U.S.-owned or controlled subsidiaries
- Also prohibits facilitation of prohibited transactions by non-U.S. persons and evasion of the sanctions

# Current Sanctioned Countries

- Subject to Total Embargo

- Cuba, Iran, Sudan (not South Sudan), and Syria
  - ▶ Iran Nuclear deal does not affect humanitarian sanctions
  - ▶ Sanctions on Cuba have loosened but still in place
- Crimea Region of the Ukraine



- Subject to Severe Restrictions

- North Korea
  - ▶ Import restrictions
  - ▶ Total export ban
  - ▶ Special restrictions on Government officials and Workers' Party members
- Burma
  - ▶ Import restrictions on jades, rubies, and certain jewelry



## Prohibited Destinations and Sanctioned Countries

- Embargoed and Terrorist Supporting Countries
  - **Cuba, Iran, North Korea, Sudan, and Syria**
- Special sanctions against:
  - **The Crimean Region of the Ukraine**
- Any entity or individual on a restricted list
  - **Entity List (BIS)**
  - **List of Specially Designated Nationals (OFAC)**
  - **Denied Persons List (BIS)**
  - **Debarred Parties (DDTC)**



# **Good News: Exemptions and Exceptions that Benefit Universities**

## Relevant Exceptions – Export Administration Regulations

- Fundamental Research
- Published information and Software, i.e.
  - Published in magazines, books, or electronic media
  - Released at an open conference, meeting, seminar, trade show
  - Papers submitted for publication to domestic or foreign editors, journal reviewers, or organizers of open conferences
- Information in certain patent applications
- Educational instruction
  - No license needed for classroom/lab teaching of foreign nationals in US universities, as long as the information being taught is in the public domain

## Relevant Exceptions – Export Administration Regulations (continued)

- No exceptions for:
  - Encryption commodities, software, or source code
  - Anything used in development of a weapon of mass destruction, including:
    - ▶ Proliferation of nuclear explosive devices
    - ▶ Chemical or biological weapons or missile technology
  - Government funded research that includes specific national security controls (may include prepublication review)

# Fundamental Research

- 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.
  - Conducted by scientists, engineers, or students at an accredited institution of higher learning in the United States
  - The techniques used during the research are normally publically available or are part of the published information.
  - Example: University based research on vectors for salmonella typhi which is published broadly
- No restriction on publication of research
  - Other than limited prepublication reviews to prevent inadvertent divulging of proprietary information
- Excludes from export controls the disclosure to foreign nationals of information resulting from fundamental research

## Not Fundamental Research

- Restrictions placed on the outcome of the research or restrictions on methods used during the research.
  - Proprietary research, industrial development, design, production, and product utilization the results of which are restricted and government funded research that specifically restricts the outcome for national security reasons are not considered fundamental research.
  - Example: University based research on bacillus anthracis that has restrictions on publication of resulting scientific and technical information
  - Example: A university has a collaborative research agreement with a private company. The company releases its proprietary technology to the university to conduct the research with the condition that it not be released to the public. The university agrees to a non-disclosure statement as part of the collaborative agreement. Not fundamental research and may require licensing

## Relevant Exemptions – International Traffic in Arms Regulations

- Public Domain
  - In general, no license is required for the export of information in the public domain
  - Includes:
    - ▶ Information that is available:
      - At newsstands and book stores, through subscriptions, and at libraries
      - In patents that have been granted
      - For unlimited distribution at public events, such as conferences, meetings, seminars, and trade shows
    - ▶ “Fundamental Research”
      - Basic and applied research in science and engineering
      - Where information is ordinarily published and shared broadly with the scientific community
      - Occurring at accredited institutions of higher learning
      - Only applies to the transfer/disclosure of information (not to physical objects or defense services)
- Educational instruction
  - No license needed for classroom/lab teaching of information concerning general scientific, mathematical, or engineering principles commonly taught in schools, colleges, and universities, or information in the public domain, to foreign persons by U.S. universities
- Does not include:
  - Research on which the University or researchers accept other restrictions on publication
  - Government funded research, where US government has imposed access and dissemination controls as condition of funding

## Relevant Exemptions – International Traffic in Arms Regulations (continued)

- Disclosure of unclassified technical data in the U.S. by Universities to foreign persons is allowed when the:
  - Foreign person is a bona fide and full time regular employee of the University
  - Foreign person's permanent abode while employed is in the U.S.
  - University informs employee, in writing, that data may not be transferred to other foreign nationals without government approval
  - Restrictions
    - ▶ Visa restrictions may require holder to maintain foreign residence
    - ▶ Researcher may not have full-time employee status (students, some post-docs)
    - ▶ Foreign person may not be a national of a prohibited country listed in § 126.1 of the ITAR
      - Currently: Afghanistan, Burma, Belarus, China, Côte d'Ivoire, Cuba, Cyprus, Democratic Republic of the Congo, Eritrea, Haiti, Iran, Iraq, Kyrgyzstan, Lebanon, Liberia, Libya, North Korea, Russia, Somalia, Sri Lanka, Sudan, Syria, Venezuela, Vietnam, Zimbabwe, and any other country subject to the U.N. Security Council arms embargo



# Satellites



## Basic Controls on Satellites

- BIS and DDTC controlled
- ITAR “see-through” rule does not apply to parts, components, accessories, attachments, equipment, or systems in XV(e) that are integrated into and included as an integral part of an EAR item prior to export, reexport, or transfer

## Items Remaining on USML

- Satellites and spacecraft
  - Unique military and intelligence functions, including nuclear detection, intelligence collection, missile tracking, anti-satellite or space-based weapons, classified operation or equipment, and navigation
  - Certain remote sensing with military applications
- Ground control equipment
  - Performs a uniquely military function for controlled satellite
- Parts and components
- Sixteen specific technologies critical to military functions
  - Any payload that performs one of military functions listed above
  - DoD funded payloads

## Items Transferred to CCL

- Satellites
  - Commercial Communication Satellites
  - Lower-Performance Remote Sensing Satellites
- Related systems for the above
  - Ground control systems
  - Training simulators
  - Test, inspection, and production equipment
  - Some software for production, operation or maintenance
  - Some technology for development, production, installation, operation or maintenance
  - Radiation hardened microelectronics
- Parts and components of EAR-controlled items

## Order of Review

- Review USML Category XV
  - Specifically enumerated items
  - “Catch-all” controls and ITAR definition of “specially designed”
- If not on the USML, review the CCL
  - Review applicable 9x515 ECCN
- Specifically enumerated items
  - “Catch-all” controls and EAR definition of “specially designed”
  - Note: the following ECCNs supersede 9A515.x:
    - ▶ ECCNs for microelectronic circuits
    - ▶ 7A004, 7A104
    - ▶ ECCNs containing “space-qualified” as a criterion
- Review other applicable non-9x515 ECCNs



# Export Controls and Biosafety



## Relevant ECCNS

- 5 main technology ECCNs that need to be reviewed for biological research:
  - 1E001 which is technology for the “development” or “production” of controlled biological agents
  - 1E351 which is technology for the disposal of controlled biological agents
  - 2E001 which is technology for the “development” of controlled equipment
  - 2E002 which is technology for the “production” of controlled equipment
  - 2E301 which is technology for the “use” of controlled items

## Category 1 Classifications

- 1E001: covers “development” or “production” technology:
  - Fundamental research:
    - ▶ If most of the technology being shared with the foreign national on how to grow, maintain, quality check a pathogen is in the public domain and the research is going to be published, then this research is not subject to the EAR and no deemed export license is required
  - Alternatively, it may not be:
    - ▶ The researcher was working on a sensitive project involving biodefense or some other type of research that would not be allowed to be published without strict review and involved proprietary or non-standards technology regarding the pathogen (not in the scientific literature), then 1E001 might apply.
- 1E351: covers certain disposal technology:
  - Mainly for controlled chemical disposal
  - Most biological agents are destroyed through autoclave, chemicals, and other publically available techniques and therefore it is not subject to the EAR.

## Category 2 Classifications

- 2E001 and 2E002 technology controls:
  - Researcher developing 2B352 controlled biological equipment
  - Producing or developing controlled equipment
  - Could be fundamental research
    - ▶ Research will be broadly published, then it would be considered fundamental research and not subject to the EAR.
- 2E301 covers “use” of controlled biological equipment:
  - Must have all six elements of the definition of use:
    - ▶ Operating, installing, maintaining, repairing, overhauling, and refurbishing
  - Not the normal activity of researchers.
    - ▶ Typically operating, maintaining or repairing a controlled item such as a fermentor.
    - ▶ The operation of a piece of equipment is not “use” technology

## General Technology Note

- “The export of “technology” that is “required” for the “development,” “production,” or “use” of a controlled item
- *Required:*
  - As applied to “technology” and “software”, refers to only that portion of “technology” or “software” which is peculiarly responsible for achieving or exceeding controlled performance levels, characteristics or functions
  - Note on “required” technology:
    - ▶ If the information is not in the public domain, therefore subject to the EAR, and does not enable achieving or exceeding the controlled parameters of the end item, then the technology is likely EAR99

## General Technology Note (Continued)

- *Development*: All stages prior to serial production, such as:
  - design, design research, design analyses, design concepts, assembly and testing of prototypes, pilot production schemes, design data, process of transforming design data into a product, configuration design, integration design, layouts
- *Production*: All production stages, such as:
  - ▶ product engineering, manufacture, integration, assembly (mounting), inspection, testing, quality assurance.
- *Use*: Operation, installation (including on-site installation), maintenance (checking), repair, overhaul and refurbishing
  - Thumb Rule on “use” technology: if the technology does not enable improvement of equipment design (i.e., “development” technology) or replication of the item (i.e., “production” technology) then the information, if subject to the EAR (i.e., not in the public domain) is likely EAR99



# Encryption



## Classifying Encryption Items

- “Encryption items” include:
  - All encryption commodities, software, and technology that contain encryption features
  - Controls apply even if the product uses a publically available encryption key
- Includes any item designed to perform an encryption function
  - Even if it does not include encryption code
  - Even if encryption is performed by the operating system, an external library, a third-party product, or a cryptographic processor

## Classifying Encryption Items (cont'd)

- BIS evaluates the item based on the encryption functionality it uses:
  - Even if the code that performs the encryption is NOT included with the item
  - Even if the encryption is actually performed by the operating system, an external library, a third-party product, or a cryptographic processor
- BIS also evaluates an item based on encryption functionality included even if it is not used or enabled
  - Often referred to as “dormant” encryption

## Options Under the EAR

- Types of Encryption
  - Self-classified without an Encryption Registration Number (“ERN”)
    - ▶ Limited encryption (i.e. authentication only)
    - ▶ Low-level encryption
  - Self-classified with an ERN
    - ▶ Encryption used for more than a limited purpose
    - ▶ Must be included in annual self-classification report
  - Requires classification request prior to export
    - ▶ Network infrastructure item
    - ▶ Source code
    - ▶ Encryption components (including SDKs, libraries, chips)

## Options Under the EAR (cont'd)

- Notification
- Classification Request
  - License Exception ENC
    - ▶ Restricted
    - ▶ Unrestricted
  - “Mass market status”
- TSU Notification
  - Publicly available encryption source code (Open Source encryption)
  - File a notification with a copy of the code or the on-line location where it is available

## Necessary Filings With BIS Even When Self-Classifying

- Unless the encryption is limited (authentication only) or low level, companies must still make certain filings to BIS
  - An **Encryption Registration Number (“ERN”)** must be obtained from BIS prior to the export of any encryption item under License Exception ENC
    - ▶ To obtain, certain company and product information must be submitted to BIS electronically
  - **Annual Self-Classification Reports:**
    - ▶ Due February 1
    - ▶ Should include each product exported during the last year that was self-classified or classified via a CCATS under Section 740.17(b)(1) or 742.15(b)(1)
    - ▶ Submitted via e-mail to BIS and NSA
  - **Semi-Annual Encryption Reports:**
    - ▶ Due February 1 and August 1
    - ▶ Covers previous 6 months of exports
    - ▶ Should include exports of “restricted” as well as certain other encryption items to all destinations other than Canada
    - ▶ Submitted via e-mail to BIS and NSA

# How This Impacts SCU



## How These Regulations Impact SCU

- If SCU research involves controlled commodities and/or technologies, SCU may be required to get U.S. Government approval, in the form of a license, before allowing:
  - Certain foreign person researchers and students in the U.S. (including those on campus) or foreign persons outside the U.S. from participating in research involving the controlled commodities or technologies
  - The sharing of research results with foreign persons, inside or outside of the United States
  - Collaborating with foreign institutions and companies
  - Providing training and other services to foreign persons
  - Sending equipment or software outside the U.S.

## International Travel

- There are restrictions that apply to taking controlled information out of the country
- There are some License Exception available
- Any information taken should be reviewed with Esther Pham prior to leaving the country

# **High Risk Areas for Universities**



## High Risk Areas for Universities

- University-funded Programs in Sensitive Areas
  - Biosafety, life sciences and medical
  - Nuclear
  - Encryption
  - Semiconductors/chips
  - Infrared technologies
- Military/Government Projects
  - Contracts may include terms and conditions restricting access by foreign nationals or have pre-publication review
  - Disclosure of information related to U.S. Government funded research that includes specific national security controls (including prepublication review) may be prohibited
  - Government may provide controlled data that cannot be shared with foreign national students or professors
- Joint Development Programs with Entities Overseas

## High Risk Areas for Universities (cont'd)

- Funding or other agreements with private corporations
  - Involve “proprietary” files or information that are subject to export controls
  - Include terms and conditions restricting access by foreign nationals or removing research from fundamental research exclusion
  - Involve the export of equipment
  - Provide for training or collaboration with foreign nationals
  - Include contractual terms that prohibit publication
- Exports of research equipment/information abroad
- Holding/attending conferences or meetings
  - Potential travel to restricted countries
  - Release of potentially export-controlled data

## Why are these unique challenges for universities?

- High number of foreign national professors
- High number of foreign national students
- Necessity to obtain grants for research may make the research less academic and more practical (i.e., may not qualify as “fundamental research”)
- University mindset of collaboration and sharing runs counter to compliance with export controls

## Thank You!

- Any questions?
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