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Hillary Hess, Director
Regulatory Policy Division
Bureau of Industry and Security, Room 2099B
U.S. Department of Commerce
Washington, D.C. 20230
Subject: RIN 0694-AG32

Dear Director Hess:

Thank you for allowing us the opportunity to comment on the Commerce Bureau of Industry and Security ("BIS") and the State Department Directorate of Defense Trade Controls ("DDTC") sets of proposed revisions intended to harmonize definitions in the Export Administration Regulations ("EAR") and International Traffic in Arms Regulations ("ITAR"). We greatly appreciate the opportunity to comment on these proposed revisions, as they impact the conduct of research and collaboration at the heart of our educational mission.

Harvard University takes very seriously its responsibilities under the export control laws. The University has a policy concerning compliance with these rules; has an export council comprised of individuals across the University's thirteen schools and chaired by myself as the Chief Compliance Officer; and has used written materials, general training sessions, and targeted training to remind faculty, researchers, and administrators of applicable existing and emerging export control requirements. The release of the proposed amendments, while intended "to reduce unnecessary regulatory burdens," has raised a number of concerns within the academic scientific community. Institutions of higher education play a vital role in our economic and physical security. We trust that the government is committed to working with the academic and research community to ensure that our nation's export control policies do not undermine the openness and strength of universities like Harvard.

Although we agree with the comments proffered by COGR, AAU and APLU, we write separately to emphasize three areas of particular concern in response to the issues on which BIS and DDTC have requested specific comments and urge BIS to revise the definitions further to address these concerns:

1. The scope of the fundamental research exclusion;
2. The scope of the educational exclusion; and
3. The proposed removal of the Q & As from the Federal Register.

We discuss each of these in turn below.

1. Fundamental Research.

We appreciate the clarification that technology that either "arises during" or "results from" fundamental research and is "intended to be published" is not subject to EAR. We are concerned, however, that you have inadvertently narrowed the scope of the fundamental research exclusion, while simultaneously proposed eliminating essential guidance in the the Q&As found in Supplement No. 1. Official government policy on the transfer of scientific and technical information as reflected in National Security Decision Directive (NSDD) 189 states that "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." Conduct of fundamental research may draw upon a wide range of information and other inputs. In drawing a sharp distinction between the conduct and results of fundamental research, BIS appears to be arbitrarily restricting NSDD-189 without clear authority.

First, foreign researchers, who have, with government approval, secured visas to study here, might, in the conduct of their research, have access to controlled equipment and technology. There are approximately 2,000 laboratories at Harvard, disbursed throughout undergraduate and graduate programs in two cities. Equipment and technologies that appear on the controlled list would be found in a large percentage of these laboratories. In addition, Harvard has thousands of active students who are neither U.S. citizens nor U.S. permanent residents, and foreign scholars with Harvard appointments at both the University and its affiliated hospitals. These international students and scholars study, teach, and participate in open research projects and, importantly in an academic setting, interact in a free environment across our campuses.

In the past, Harvard did not apply for a deemed export license when foreign scholars had access to such technology under the EAR because our researchers did not engage in the "use" of the technology, as defined by the government. In order for technology to be considered "use," it had to include six elements: operating, installing, maintaining, repairing, overhauling, and refurbishing. In the ordinary course, researchers would operate or even repair a controlled item, but they would not generally maintain, overhaul, or refurbish the equipment. Thus, the operation of such equipment was not "use" technology as defined by the EAR.

Second, Note 1 to revised Section 734.8, in our view, is too broad. It not only sweeps in certain use technology that was previously excluded but also risks the inclusion of standard, off-the-shelf technology and software that did not arise during or result from fundamental research.

We would urge the government to make clear that access to controlled equipment, software, or technology in the conduct of open research for those properly authorized to study and work here does not trigger a licensing requirement. *Restricting the use of widely used and commercially available technology or of controlled equipment in the conduct of fundamental research would have the practical effect of restricting or limiting the research itself.*

Unlike commercial proprietary research, research in a university setting has few boundaries. Once students and scholars are permitted by the government to enter this country on valid visas, the U.S. will gain the greatest benefit from fundamental research conducted by these individuals if their research remains free and open, including for access to technology directly associated with such research. Indeed, it is this diversity and fluidity that have resulted in our greatest scientific advancements – advancements that are open for broad dissemination and scrutiny.

We note further that the ITAR changes in the note to Part 120.49(a) specifically states that access to controlled technology under fundamental research could itself be controlled. ("The inputs used to conduct fundamental research, such as information, equipment or software, are not 'technical data that arises during or results from fundamental research' except to the extent that such inputs are technical data that arise during or result from earlier fundamental research.")

We fully understand the national security implications of conducting fundamental research in technologies subject to the ITAR and the importance of a careful review of access to such technologies. Nevertheless, if the State Department has determined through regulation that certain research should be eligible for fundamental research, we believe the exclusion should apply.

The addition of the note would effectively swallow the fundamental research determination as access to commercially available equipment and software controlled under the ITAR frequently would be necessary to conduct fundamental research under the ITAR. The inclusion of this note would dramatically inhibit the ability to conduct fundamental research that would otherwise qualify for Part 120.49. Quite simply, some research, which would otherwise qualify as fundamental research, would be ineligible for the exclusion because of the need to access ITAR-controlled equipment or software to conduct the research. To the extent the note is retained, we recommend removing the terms "equipment" and "software."

2. Educational Exclusion.

The new provision regarding educational information subject to the EAR imports language from ITAR regarding "general scientific, mathematical, or engineering principles" and dramatically circumscribes the scope of the educational exclusion. While we understand the need for, and desire to, harmonize language across regulatory regimes, in this instance, the effort to harmonize has resulted in a gross departure from the original scope of this provision in the EAR.

The current language in the EAR excluding educational information from the scope of the EAR states that educational information "is not subject to EAR if it is released by instruction in catalog courses and associated teaching laboratories of academic institutions." If a course is publicly advertised in a course catalog, then it is not subject to EAR. We have two concerns with the insertion of the additional requirement that the exclusion only applies to "general scientific, mathematical, or engineering principles."

First, the new language suggests that a research institution like Harvard would have to make subtle judgments about which courses would be eligible for the exclusion and which would not. This is a virtually impossible task.

Second and related, the term "general" is susceptible to wide swings in interpretation. An upper-level course in computers for a graduate student may be a general requirement for the degree. Is a basic mathematical programming course that introduces students to the fundamentals of mathematical programming a "general" course eligible for the exclusion? While it may be appropriate under ITAR to limit access to the most sensitive technologies, it is not appropriate for the EAR regulatory regime.

From the language in the proposed notice, it does not seem to be the intent of these revisions to expand the scope of the EAR. The proposed notice explicitly states that the revised language regarding what educational information is considered to be outside the purview of the EAR is "not intended to make a change to the scope of the current section." In view of this, we respectfully suggest adding: "/or" to this provision, so that it reads:

> "Concern general scientific, mathematical, or engineering principles commonly taught in schools, **and/or** released by instruction in a catalog course or associated teaching laboratory of an academic institution;"

3. The Inclusion of the Q&As in the Federal Register.

While we appreciate that Q&As are often considered illustrative, the Q&As in Supplement No. 1 convey important regulatory information that has been previously conferred considerable weight. When navigating the application of export controls requirements to university communities, which are large, diverse, and complex, the Q&As have provided clear and useful guidance not only to educational institutions but also to government agencies regarding the types and nature of activities of concern. Below are examples of questions and answers that have been useful to diverse research and educational institutions like Harvard:

Question C(1): I teach a university graduate course on design and manufacture of very high-speed integrated circuitry. Many of the students are foreigners. Do I need a license to teach this course?

Answer: No. Release of information by instruction in catalog courses and associated teaching laboratories of academic institutions is not subject to the EAR (§734.9 of this part).

Question C(2): Would it make any difference if some of the students were from countries to which export licenses are required?

Answer: No.

Question C(3): Would it make any difference if I talk about recent and as yet unpublished results from my laboratory research?

Answer: No.

Question C(4): Even if that research is funded by the Government?

Answer: Even then, but you would not be released from any separate obligations you have accepted in your grant or contract.

Question D(1): Do I need a license in order for a foreign graduate student to work in my laboratory?

Answer: Not if the research on which the foreign student is working qualifies as "fundamental research" under §734.8 of this part. In that case, the research is not subject to the EAR.

Question D(2): Our company has entered into a cooperative research arrangement with a research group at a university. One of the researchers in that group is a PRC national. We would like to share some of our proprietary information with the university research group. We have no way of guaranteeing that this information will not get into the hands of the PRC scientist. Do we need to obtain a license to protect against that possibility?

Answer: No. The EAR do not cover the disclosure of information to any scientists, engineers, or students at a U.S. university in the course of industry-university research collaboration under specific arrangements between the firm and the university, provided these arrangements do not permit the sponsor to withhold from publication any of the information that he provides to the researchers. However, if your company and the researchers have agreed to a prohibition on publication, then you must obtain a license or qualify for a License Exception before transferring the information to the university. It is important that you as the corporate sponsor and the university get together to discuss whether foreign nationals will have access to the information, so that you may obtain any necessary authorization prior to transferring the information to the research team.

Question D(3): My university will host a prominent scientist from the PRC who is an expert on research in engineered ceramics and composite materials. Do I require a license before telling our visitor about my latest, as yet unpublished, research results in those fields?

Answer: Probably not. If you performed your research at the university, and you were subject to no contract controls on release of the research, your research would qualify as "fundamental research" (§734.8(a) of this part). Information arising during or resulting from such research is not subject to the EAR (§734.3(b)(3) of this part).

You should probably assume, however, that your visitor will be debriefed later about anything of potential military value he learns from you. If you are concerned that giving such information to him, even though permitted, could jeopardize U.S. security interests, the Commerce Department can put you in touch with appropriate Government scientists who can advise you. Send written communications, via courier, to: Department of Commerce, Bureau of Industry and Security, Room 2099B, 14th Street and Pennsylvania Ave., NW., Washington, DC 20230.

Question D(4): Would it make any difference if I were proposing to talk with a PRC expert in China?

Answer: No, if the information in question arose during or resulted from the same "fundamental research."

Question D(5): Could I properly do some work with him in his research laboratory inside China?

Answer: Application abroad of personal knowledge or technical experience acquired in the United States constitutes an export of that knowledge and experience, and such an export may be subject to the EAR. If any of the knowledge or experience you export in this way requires a license under the EAR, you must obtain such a license or qualify for a License Exception.

Question D(6): I would like to correspond and share research results with an Iranian expert in my field, which deals with technology that requires a license to all destinations except Canada. Do I need a license to do so?

Answer: Not as long as we are still talking about information that arose during or resulted from research that qualifies as "fundamental" under the rules spelled out in §734.8(a) of this part.

Question D(7): Suppose the research in question were funded by a corporate sponsor and I had agreed to prepublication review of any paper arising from the research?

Answer: Whether your research would still qualify as "fundamental" would depend on the nature and purpose of the prepublication review. If the review is intended solely to ensure that your publications will neither compromise patent rights nor inadvertently divulge proprietary information that the sponsor has furnished to you, the research could still qualify as "fundamental." But if the sponsor will consider as part of its prepublication review whether it wants to hold your new research results as trade secrets or otherwise proprietary information (even if your voluntary cooperation would be needed for it to do so), your research would no longer qualify as "fundamental." As used in these regulations it is the actual and intended openness of research results that primarily determines whether the research counts as "fundamental" and so is not subject to the EAR.

Question D(8): In determining whether research is thus open and therefore counts as "fundamental," does it matter where or in what sort of institution the research is performed?

Answer: In principle, no. "Fundamental research" is performed in industry, Federal laboratories, or other types of institutions, as well as in universities. The regulations introduce some operational presumptions and procedures that can be used both by those subject to the regulations and by those who administer them to determine with some precision whether a particular research activity is

covered. Recognizing that common and predictable norms operate in different types of institutions, the regulations use the institutional locus of the research as a starting point for these presumptions and procedures. Nonetheless, it remains the type of research, and particularly the intent and freedom to publish, that identifies "fundamental research," not the institutional locus (§734.8(a) of this part).

Question D(9): I am doing research on high-powered lasers in the central basic-research laboratory of an industrial corporation. I am required to submit the results of my research for prepublication review before I can publish them or otherwise make them public. I would like to compare research results with a scientific colleague from Vietnam and discuss the results of the research with her when she visits the United States. Do I need a license to do so?

Answer: You probably do need a license (§734.8(d) of this part). However, if the only restriction on your publishing any of that information is a prepublication review solely to ensure that publication would compromise no patent rights or proprietary information provided by the company to the researcher your research may be considered "fundamental research," in which case you may be able to share information because it is not subject to the EAR. Note that the information will be subject to the EAR if the prepublication review is intended to withhold the results of the research from publication.

Question D(10): Suppose I have already cleared my company's review process and am free to publish all the information I intend to share with my colleague, though I have not yet published?

Answer: If the clearance from your company means that you are free to make all the information publicly available without restriction or delay, the information is not subject to the EAR. (§734.8(d) of this part)

Question D(11): I work as a researcher at a Government-owned, contractor-operated research center. May I share the results of my unpublished research with foreign nationals without concern for export controls under the EAR?

Answer: That is up to the sponsoring agency and the center's management. If your research is designated "fundamental research" within any appropriate system devised by them to control release of information by scientists and engineers at the center, it will be treated as such by the Commerce Department, and the research will not be subject to the EAR. Otherwise, you would need to obtain a license or qualify for a License Exception, except to publish or otherwise make the information public (§734.8(c) of this part).

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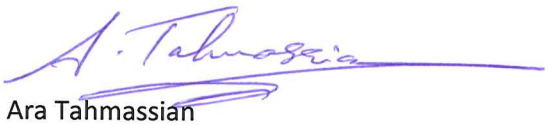
Such guidance, with the force that accompanies notice in the Federal Register including comment periods such as BIS and DDTC are undertaking for this exercise, is necessary to ensure scrupulous compliance. We, therefore, respectfully request that that the Q&As remain in the EAR.

Harvard is committed to working with the government to establish policies, rules, and regulations that both protect the nation's security and ensure scientific, technological, and economic advancements. We hope you will further clarify the appropriate scope of the fundamental research and education exclusions and include the helpful questions and answers in Supplement 1, consistent with our comments.

Sincerely,



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