UNIVERSITY of VIRGINIA
Finance Outreach and Compliance

August 3, 2015

Ms. Hillary Hess
Regulatory Policy Division
Bureau of Industry and Security
U.S. Department of Commerce
Room 2099B
14th Street and Pennsylvania Ave. NW.
Washington, DC 20230

RE: RIN 0694-AG32

Dear Ms. Hess,

I am writing on behalf of The Rector and Visitors of the University of Virginia (University or University of Virginia) to comment on the proposed Revisions to Definitions in the Export Administration Regulations (EAR) and certain corresponding changes to the International Traffic in Arms Regulations (ITAR). We believe that these revisions, if adopted as proposed, will undermine the University's ability to deliver on our core academic missions of providing high quality research, teaching and service.

Educational Information

Under the EAR "educational information" is currently defined in §734.9 and specifically excluded from the scope of the regulations in §734.3(b)(3)(iii). Both the definition and exclusion are well understood and consistently applied by the Bureau of Industry and Security (BIS) and the academic community. We are concerned that the removal of the definition of "educational information" and the limitation of the exclusion in §734.3(b)(3)(iii) to information and "software" that concern general scientific, mathematical, or engineering principles commonly taught in schools and released by instruction in a catalog course or associated teaching laboratory of an academic institution will create uncertainty and raise questions regarding the applicability of the exclusion to new University courses. The University and other institutions of higher education must be able to freely develop new courses to meet the ever changing needs of our students and expectations of prospective employers including, but not limited to, the U.S. Government without having to be concerned with whether or not the content is "general" and "commonly taught." In addition to this concern regarding newly developed courses, many advanced undergraduate and graduate level catalog courses include hands on design laboratories in which students determine their own projects, which may or may not include the production of prototypes. Will the intellectual content of these courses, which would have previously been treated as "educational information," now become subject to the EAR because they go beyond providing instruction on general theories or principles?

The University of Virginia joins with the Association of University Export Control Officers (AUECO) in recommending that the qualifier "concern general scientific, mathematical, or engineering principles commonly taught in schools" be removed and that the simpler "is released by instruction in catalog courses and associated teaching laboratories of academic institutions" be retained for §734.3(b)(3)(iii). We prefer this approach to the one proposed by COGR, AAU and APLU because while their recommendation would ameliorate concerns regarding the development of new courses, it does not address the implications created by the use of the terms "general scientific, mathematical, or engineering principles" and "commonly taught." Based on the preamble to the proposed rule, we do not believe BIS intends to alter the scope of the educational information exclusion currently available to institutions of higher

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education under the EAR and for this reason we strongly urge BIS to retain the current language for which BIS and the university community have a shared understanding.

Definition of "Fundamental Research"

The definition of "fundamental research" is of critical importance to the University of Virginia and all institutions of higher education. The proposed rule adopts a definition of "applied research" taken from the Defense Federal Acquisition Regulations Supplement (DFARS) (48 CFR part 31.205-18) with an alternate definition adopting Office of Management and Budget (OMB) Circular A-11 language.

The University of Virginia finds the proposed excerpt from DFARS' definition to be unacceptable, as it fails to clearly distinguish "applied research" from "development" activities. If the intent of the reform initiative and this proposed rule is to harmonize the EAR with the DFARS then we recommend BIS adopt the **full definition** of "applied research" found at 48 CFR part 31.205-18 which reads as follows:

> *"Applied research* means that effort which (1) normally follows basic research, but may not be severable from the related basic research, (2) attempts to determine and exploit the potential of scientific discoveries or improvements in technology, materials, processes, methods, devices, or techniques, and (3) attempts to advance the state of the art. Applied research does not include efforts whose principal aim is design, development, or test of specific items or services to be considered for sale; these efforts are within the definition of the term *development,* defined in this subsection." (48 CFR 31.205-18)

The final statement, which was excluded from the proposed definition, crucially differentiates between "applied research" falling clearly within the scope of "fundamental research" and regulated "development" activities. The overwhelming majoring of applied research conducted by institutions of higher education is intended to advance the state of the art and be published rather than to develop a product, item or service, for sale.

If the ultimate goal is to clearly capture the intent of BIS in a simplified definition, the University of Virginia suggests following AUECO's proposed revision, i.e., that ""fundamental research" means research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community, and for which the researchers have not accepted restrictions for proprietary or national security reasons".

The University of Virginia currently uses §734.8(b) to make determinations regarding fundamental research by evaluating proposed research activities against paragraphs 2-6, and treats all activities that qualify as "fundamental research" provided all applicable conditions are met. To this end the University recommends BIS retain the specific language of §734.8(b).

"Fundamental research", "technology", and "software"

The proposed language in §734.8(a) states that "'technology' that arises during, or results from, fundamental research and is 'intended to be published'" would not be subject to the EAR. This significant departure from the current language in §734.3(b)(3), under which "publicly available technology and software…[that] arise during, or result from, fundamental research" are not subject to the EAR. The exclusion of "software" from the proposed rule would significantly complicate and restrict university research and represents a substantial change in applicability of the EAR. Under the proposed rule, natural-language documents written by a researcher would be "technology" that could be freely shared as arising during fundamental research, while a computer-language document (a program in source code) written by the same researcher would be subject to deemed export restrictions. We also note that the proposed rule refers to a note (which we were unable to locate) "to clarify that software and commodities are not 'technology resulting from fundamental research'" but without this note we are unable to assess the full implications of the proposed change.

In some fields “software” is a direct product of academic research while in others “software” may be created by the researcher to conveniently accomplish a particular task. Regardless of the circumstance in which it is produced, when researchers intend to publicly disseminate such “software” and are under no sponsor imposed restrictions on dissemination, the EAR currently treats this source code as information that arose during, or resulted from, fundamental research and therefore excludes it from scope of the EAR. We contend that this interpretation is consistent with prior case law, specifically the finding of the Sixth Circuit Court of Appeals in Junger v. Daley where the court ruled that source code is protected by the First Amendment. Additional support for this position is provided by the ruling of the Ninth Circuit Court of Appeals in Bernstein v. U.S. Department of Justice where the court found that software source code was speech protected by the First Amendment and that the government's regulations (referring to the ITAR) preventing its publication were unconstitutional; the finding that dissemination of is protected expression should apply equally to the EAR.

The export definitions in §734.2(b) recognize the similarities between “software” and “technology”. We strongly urge BIS to incorporate the following modification, as recommended in the AUECO comment letter to this proposed rule, to §734.8:

> § 734.8 ‘‘Technology’’ and “software” that arises during, or results from, fundamental research.
> (a) ‘‘Technology’’ or “software” that arises during, or results from, fundamental research and is ‘intended to be published’ is not ‘‘subject to the EAR.’’
> (b) Prepublication review. ‘‘Technology’’ or “software” that arises during, or results, from fundamental research is ‘‘intended to be published’’ to the extent that the researchers are free to publish the technology and software source code without restriction or delay. ‘‘Technology’’ that arises during, or results from, fundamental research subject to prepublication review is still ‘‘intended to be published’’ when:

Adoption of this language would continue the longstanding recognition by BIS that both “technology” and “software” arising during, or resulting from, fundamental research are outside the scope of the EAR.

Questions and Answers - Technology and Software Subject to the EAR

The University of Virginia urges BIS to retain the questions and answers found in Supplement No. 1 to part 734 in the regulations. While we agree that the questions and answers are merely illustrative, their inclusion in the EAR lessens the likelihood that changes in interpretation will occur outside of the rulemaking process. These illustrative examples frequently inform export control decisions at universities and their removal result would increase uncertainty regarding the applicability of the EAR to fundamental research, publication, and educational instruction.

End to End Encryption Standard

The University of Virginia appreciates the additional clarity provided by listing activities that are not exports, reexports or transfers in §734.18. The exclusion of sending, taking or storing software and technology that is secured using end to end encryption from export activities is particularly welcome, as it will reduce the burden on faculty members and administrators traveling abroad. The flexibility provided by BIS via their proposal of a minimum standard of FIPS 140-2 or other similarly effective means is also appreciated as it provide us with the ability to use alternative means or to adopt new tools and/or techniques to enhance data protection as they become available rather than having to wait for a change in the regulations.

Effective Date of the Final Rule

Although the proposed changes do not modify the CCL, they will, if adopted as proposed, have a significant impact on regulatory burden for the University of Virginia and other institutions of higher education in the U.S. Industry sponsors, as well as many foundations supporting medical research, routinely require a limited time (typically less than 90 days) for prepublication review to ensure that sponsor-provided proprietary information is not inadvertently disclosed and to enable patent filing. U.S. universities have until now interpreted such requirements as being compatible with a fundamental research determination. If software that arises during, or results from, fundamental

research is not clearly excluded from the scope of the EAR (as is currently the case) existing research funding agreements will have to be reassessed to determine if controls will apply to software being written to enable the research or as a intended research output. These proposed changes as well as the proposed ITAR §120.49(b) Prepublication Review will require us to significantly modify our business practices associated with review, negotiation and management of sponsored research opportunities. The University of Virginia will not be able to meet the compliance obligations imposed by the addition of the prepublication review language of ITAR §120.49(b) and the reassessment of "software" arising during, or resulting from, fundamental research within 30 days of the publication date of a final rule necessitating these changes in practice; therefore, we request that BIS provide at minimum a 6 month delay in effective date, and limit applicability of the new provisions to new research funding agreements entered into on or after the effective date of the Final Rule.

The University appreciates the opportunity to provide comments on these proposed changes.

Sincerely,

Kelly Hochstetler, Ph.D.
Director, Finance Outreach and Compliance