OFFICE OF THE VICE PROVOST FOR RESEARCH

University of Massachusetts
UMASS Lowell

Cumnock Hall
One University Avenue
Lowell, MA 01854

Phone: 978-934-2226
Fax: 978-934-3075
E-mail: Julie_Chen@uml.edu

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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 University of Massachusetts Lowell (UML) concerning the proposed Revisions to Definitions in the Export Administration Regulations (EAR). UML is among the top 200 research universities in the U.S. (U.S. News & World Report), with total research and development expenditures of $65 million annually. The UMass System is also ranked 13th in the U.S. for intellectual property generated.

The proposed Revisions to Definitions in the Export Administration Regulations (EAR) and corresponding changes to the International Traffic in Arms Regulations (ITAR) will, if adopted as proposed, have significant impact on academic institutions in the U.S. We appreciate the opportunity to comment on these revised definitions.

Changes to Educational Information

The current §734.9 defines "educational information" as information released by instruction in catalog courses and associated teaching laboratories of academic institutions, and §734.3(b)(3)(iii) excludes such information from the scope of the EAR. In the proposed rule, the definition of "educational information" is removed, and §734.3(b)(3)(iii) instead excludes 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. We believe that the proposed change adds uncertainty and potentially narrows the scope of applicability of the exclusion. *A narrow interpretation of the revised §734.3(b)(3)(iii) could inhibit the ability of U.S. universities to develop new courses in emerging areas of science and engineering critical to employability of our graduates and the future competitiveness of the industrial sector*. UML recommends 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).

Definition of "Fundamental Research"

The proposed definition of "fundamental research" using the language of NSDD-189 in the EAR is consistent with U.S. academic institutions' understanding of the concept. The proposed rule adopts a definition of "applied research" taken from the DFARS (48 CFR part 31.205-18), with an alternate definition adopting OMB Circular A-11 language. The OMB Circular A-11 language reads: "applied research is defined as systematic study to gain knowledge or understanding necessary to determine the means by which a recognized and specific need may be met". This language is well understood by

universities in the context of reporting on federal expenditures to NSF, and UML supports the adoption of this commonly used definition.

BIS has also proposed an alternate definition: "fundamental research" means non-proprietary research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community. We assume that this simpler definition would not alter other wording in the proposed rule permitting prepublication review under specific circumstances within the fundamental research domain. While we generally favor the simplified definition, it would be helpful if a note were added to illustrate what is and is not non-proprietary, or alternately for the term to be defined.
UML appreciates that the proposed definition of "fundamental research" clarifies the broad applicability of the concept regardless of organization type or location. However, the removal of the specific criteria for university based research currently found in §734.8(b) creates interpretive uncertainty. U.S. universities use §734.8(b) to make determinations as to the applicability of fundamental research by evaluating proposed research activities using paragraphs 2 -6, and assume that the research qualifies as "fundamental research" if all conditions are met. *UML recommends that the specific language of §734.8(b) be retained in the EAR.*

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

Under the proposed §734.8(a), "'technology'" that arises during, or results from, fundamental research and is 'intended to be published'" would not be subject to the EAR. This is a change from the current §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 proposed rule refers to a proposed note "to clarify that software and commodities are not 'technology resulting from fundamental research'" (although we were unable to locate the note). *This change would significantly complicate and restrict university research.* While natural-language documents written by a researcher would be "technology" that could be freely shared as arising during fundamental research, a computer-language document (a program in source code) written by the same researcher would be subject to export restrictions. "Software" resulting from university research is "published" as well as "technology", as recognized in the current §734.7(b). The export definitions in §734.2(b) recognize the similarities between software and technology. *UML strongly recommends that the proposed §734.8(a) be revised as follows:*
§ 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.''

Questions and Answers- Technology and Software Subject to the EAR

UML 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 illustrative, inclusion of them in the EAR removes the uncertainty created by changes due to interpretive differences without benefit of the rulemaking process. We are concerned that removal of the questions and answers, which are widely used by industry and academia to guide export control decisions, would create increased uncertainty in our application of key concepts, including fundamental research, publication, and educational instruction.

End to End Encryption Standard

The addition of §734.18 listing activities that are not exports, re-exports, or transfers is a useful addition to the EAR. *In particular, the exclusion of sending, taking or storing software that is secured using end to end encryption from export activities is welcome to the academic research community, as it will reduce*

the faculty burden associated with external collaborations and off-site research activities. UML supports the proposed EAR illustrative standard of FIPS 140-2, supplemented in accordance with NIST guidance or other similarly effective means.

UMass Lowell appreciates the opportunity to provide comments on these proposed changes and would be happy to discuss in further detail if helpful.

Sincerely,

Julie Chen
Vice Provost for Research