Comments of the University of California
Advance Notice of Proposed Rulemaking (RIN 0694-AD29)
Revision and Clarification of Deemed Export Related Regulatory Requirements

The University of California appreciates this opportunity to provide comments on the March 28, 2005 Advance Notice of Proposed Rulemaking (ANPR). The University of California operates a system of ten campuses and manages three national laboratories (at Berkeley, Livermore, and Los Alamos, New Mexico) for the U.S. Department of Energy (DOE). The ANPR, issued by the U.S. Department of Commerce Bureau of Industry and Security (BIS), requested comments on recommendations contained in the Department of Commerce Office of Inspector General (OIG) March 2004 report on deemed export controls. Because the OIG's recommendations on the "deemed export" rule raise a number of potential issues for all of the University facilities, these comments address these issues in the campus and national laboratory context.

In submitting these comments, the University recognizes that the national laboratories, especially Los Alamos National Laboratory and Lawrence Livermore National Laboratory, operate in a different environment from the University campuses due to their national security missions. The laboratories have well-developed foreign visit and assignment programs and export control programs designed to protect export-controlled and other sensitive information in accordance with DOE directives. However, the comments outlined below are consistent with the missions of both the national laboratories and the campuses.

Background

The OIG concluded that the current application of the "deemed export" rule in the Export Administration Regulations (EAR) would provide access to foreign nationals from countries "of concern" to controlled "technology" as defined under the regulations. Among other recommendations, the OIG recommended revising the definition of "use" technology in the regulations and basing the requirement for a deemed export license on a foreign national's country of birth, rather than citizenship. In addition, the OIG recommended modifying certain regulatory guidance on the licensing of technology to foreign nationals working with government-sponsored research and research conducted in universities.

The OIG asserted that the misuse of the "deemed export" rule and certain exemptions in the EAR allows the transfer of sensitive U.S. technology to countries of concern. However, as other commenters have noted, these concerns are already being addressed by the Departments of State, Homeland Security, and other federal agencies. These agencies already perform extensive background checks on foreign nationals coming to the U.S. to perform research in academic laboratories through the Visas Mantis program. Once the United States government has approved a foreign national under a visa that permits study and research at a U.S. university, there should be only a very few and well-defined

instances in which the individual must face additional restrictions in working within the academic research community.

American universities and research laboratories should be allowed to do their part to protect national security by helping to maintain the scientific preeminence and economic health of the United States. When research is to be performed of a highly sensitive nature that could impair the security interests of the United States, such research is classified. The University well understands the need for this kind of research and has a long history of performing it for the United States at national laboratories managed for the U.S. Department of Energy. However, where the research is not classified, the academic and research community should be permitted to bolster the nation's security by attracting the best minds of the world and allowing them to perform their research. These researchers should be able to freely use advanced technology where such use does not involve a transfer of controlled technology, exchange basic research results with their colleagues, and continue to make the discoveries that have kept U.S. innovation second to none.

Control of Equipment versus Control of Technology

With respect to the regulations reviewed by the OIG, the University believes that much of the confusion referred to in the OIG report is related as much to the term "technology" as to the term "use" in the EAR. "Technology" does not refer to the controlled equipment itself but to the specific information necessary for the development, production, or use of a product. (15 CFR §772.1) We believe it is critical (1) to distinguish "equipment" from "technology;" and (2) to be clear that the deemed export rules apply only to transfer of certain "technology" (that is, specified technical information) to foreign nationals within the United States, and *not* to transfer or use of equipment. Furthermore, it is crucial to acknowledge that not all "technology" is subject to the EAR in the first place.

The EAR states that "publicly available technology" is not subject to the EAR (15 CFR §734.3(b)(3)). Publicly available technology includes:

- information that is or will be published;
- information that arises during, or results from, fundamental research; and
- educational information.

Thus, in reviewing the proposed change to the definition of "use" technology referred to in the ANPR, the University believes that it is important to note that, under the applicable regulations, the controlled "technology" at issue does not include information in any of the above-listed categories. At times, the OIG report appears to obscure the distinction between equipment and information in describing controlled "technology", and also implies that all technology must be controlled rather than recognizing that some may

qualify as publicly available. Both of these distinctions are critical to determining the applicability of the "deemed export" requirements.

The current framework of the EAR does not restrict the sale or purchase of equipment within the United States. As Undersecretary Kenneth I. Juster noted in his August 13, 2004 letter to Professor Alice P. Gast of MIT, "the actual use of equipment by a foreign national is not controlled by the EAR. Rather, the transfer of technology relating to the use of the equipment may be controlled." (Juster Letter, page 2, fn. 1 (emphasis added).) Whether such "technology" is controlled under the EAR depends on whether the technology for the use of the equipment is specifically listed on the Commerce Control List (CCL) and on whether such technology is "publicly available" as described above.

It is the University's experience that manufacturers of dual use equipment controlled under the EAR typically make freely available to all purchasers operation, or "user", manuals. These manuals are provided to the consumer along with the equipment, and are often posted on open websites of the manufacturer. (By contrast, manufacturers are likely to keep as confidential and proprietary their blueprints, engineering designs, and manufacturing techniques, for these provide a commercial advantage, unlike the "user" manuals.) Such user manuals do not require a license under the export regulations because the manuals are publicly available and manufacturers of dual-use commodities are not placing restrictive markings (such as "Export Controlled/Restricted to U.S. Citizens") on the manuals, nor are they securing an export license to transfer such manuals to the purchasers.

This understanding is based on the clear text of the export regulations, and was recently reconfirmed by BIS after the publication of the OIG report. In his letter to Professor Gast, Undersecretary Juster notes that there will be many situations in which a university would not need to seek a license to transfer "use" technology to a foreign national. He notes that the technology may be publicly available "because the technology has been published or is posted on the Internet" or the technology "may arise during or result from fundamental research." (Juster letter, page 3.)

In its report, the OIG stated that simply providing access to controlled equipment to a foreign national may result in the transfer of controlled "use" or other technology. However, BIS has carefully drawn a distinction between controlled information and information that is available to the public based on the use of the equipment itself. For example, in a December 6, 2004 advisory opinion on the subject of deemed exports, BIS discusses the sale of surplus government property to foreign nationals. The opinion was issued in response to a request for guidance that described a public sale in which a foreign national would be provided access to the purchased property and an opportunity for close examination of the equipment, perhaps even by taking the item apart. The advisory opinion states "[i]f the sale of the equipment is open to all members of the public, then any technology that might be transferred is deemed to be publicly available

under Part 734 of the EAR and, thus, not subject to these Regulations." (Citing Part 734, Supp. No. 1 (section I: Miscellaneous, Question (1).) The opinion goes on to note that where a government contractor's sales are open to all members of the public, "then the mere inspection of the equipment does not raise a deemed export issue." Thus, it is not enough to determine whether some kind of information about a piece of controlled equipment may be conveyed by its "use". The issue is whether such information is non-public controlled technology under the EAR.

Definition of "Use" Technology

The EAR places controls on "production", "development" and "use" technology for many of the items on the CCL. However, the OIG noted that definition of "use" presented particular compliance problems. "Use" is defined in section 772.1 of the EAR as "operation, installation (including on-site installation), maintenance (checking), repair, overhaul, and refurbishing", and concluded that the term encompassed too many activities to be useful for implementation and enforcement purposes. Because the OIG considered it unlikely that one individual would perform all six activities, it found that one would almost never determine that a license for the export of technical information related to "use" was required under the regulation as presently drafted. It therefore recommended that "or" be substituted for "and" in the regulation.

The University does not object to the change in the definition of "use" so long as (1) BIS does not go further and rewrite and limit the "publicly available" information exemption and fundamental research exemption; and (2) BIS does not adopt an interpretation based on what we believe is the erroneous assumption of the OIG that "use" of controlled equipment necessarily entails transfer of controlled "technology".

The University's position might best be understood by considering the following four scenarios.

1. *"Use" technology provided by the manufacturer which is publicly available*

This scenario describes the typical situation in which the manufacturer of a piece of scientific equipment that appears on the CCL also provides an owner's manual containing instructions on the operation, installation, and maintenance of the equipment. Where the manual is typically provided to every purchaser of the equipment, is publicly available, and contains no restrictions on the equipment purchaser's ability to freely distribute the manual, the University believes such technical data would qualify as "publicly available technology" under 15 CFR §734.3(b)(3) and 15 CFR §734.7. Even if a foreign national is using the equipment and reading and using the information in the manual, the University believes that no "deemed export" under the EAR has occurred.

The consequences of changing BIS's current interpretation of the "publicly available" information exemption cannot be underestimated. Not only colleges and universities but much of the U.S. industrial sector uses certain dual-use equipment in its operation. For example, one need simply consider the number of desktop computers that pervade the workplace, much less the use of high-end computers in the academic and high tech sectors. Most of the computers and software that are in use in the U.S. (and which can be purchased by any individual inside the U.S.) require a license to ship the computer or software to certain countries outside the U.S. The computer and software manufacturers make freely available their "user" manuals to the purchaser, since they want to make it as easy as possible for their customers to install and use their equipment. Further, the buyer of the computer is not interested in knowing the inner-workings of their computer; they simply want to use the computer in the performance of their job. Nonetheless, were the OIG recommendations to be interpreted overbroadly and were BIS to determine that the "publicly available" information exemption did not apply to the owner's manuals, there would be substantial disruption to the manufacturing and industrial sectors in the United States. First, manufacturers of any dual use equipment would have to secure an export license to provide the user manual to the purchaser. Second, the University (and other academic and business entities) could no longer allow foreign national employees working with valid visas to review the user manuals for their office computers without securing export licenses. The magnitude of such added responsibilities would be further compounded in the event that original place of birth was added as the criteria, as discussed below.

2. *"Use" technology provided by the manufacturer which is not publicly available*

The second scenario involves technical data (e.g. blueprints, plans, engineering designs and specifications) about an item on the CCL, which is provided by the manufacturer under some sort of non-disclosure agreement because it contains proprietary information. This information does not qualify as "publicly available" and did not "arise during, or result from, fundamental research" because it was created by the manufacturer and is not being freely disseminated. That the information might be used in fundamental research does not change the character of the information itself because it was provided under a non-disclosure agreement and cannot, therefore, be "ordinarily published and shared broadly within the scientific community". *See* 15 CFR §734.8.

We acknowledge that before such export-controlled and proprietary information provided under a non-disclosure agreement could be provided to a foreign national, the manufacturer and/or the University would be required to apply for a "deemed export" license if the information would require a license before being transferred to the home country of the foreign national. However, under University policy, the University's campuses and research laboratories are open to all researchers regardless of citizenship, residency status, or visa category. The University does not maintain research laboratories

on campus that discriminate on the basis of such categories between members of a scientific research team. Moreover, as a practical matter, even if a manufacturer or contractor wanted to provide such proprietary, export-controlled information, the open academic setting that is fundamental to the University's operations makes it infeasible to ensure that export-controlled information would be limited to those foreign nationals who could receive it without a license. Therefore, as a matter of policy and practice at the campuses, the University refuses to accept export-controlled, proprietary information that cannot be freely disseminated or published and returns any such information that it receives. That is not the case, of course, at the national laboratories. At the national laboratories, the University has implemented policies and procedures to protect export-controlled and other sensitive information that is not available to the general public.

3. *"Use" technology developed by the University that is published*

This scenario assumes that, in the course of performing the research work, a researcher develops some kind of "use" technology that was not provided by the manufacturer (whether in a publicly available owner's manual or under a non-disclosure agreement). Such technology might be obtained, for example, if the researcher had to modify a piece of scientific equipment to perform an experiment, and in making the modification learned something about operation or design of the equipment that was not previously provided. Typically, researchers in publishing their scientific results will also publish their methodology to ensure that their results are reproducible by other scientists. Such published information would have arisen during the performance of fundamental research (15 CFR §734.8) and, as published material would also qualify under the published information exemption in 15 CFR §734.7.

It is important to be clear that the fundamental research exemption includes the right of researchers to generate new information about how to use and modify controlled equipment they may be using in the conduct of their fundamental research at U.S. university campuses. An interpretation to the contrary would severely constrain the ability of universities to conduct fundamental research in the open academic environment that has been so critical to the success of this nation's academic research enterprise.

4. *"Use" technology developed by the University that is not published*

The final scenario assumes that the information developed at the University is not published. Under the export regulations, whether such information would require a deemed export license would depend on how the information is treated by the University and the researcher. If, for example, the researcher shared the information broadly within the scientific community, whether by sharing it with departmental colleagues, discussing it at open conferences, or by sharing it with researchers at non-University institutions, it would still qualify as having arisen during, and resulted from, basic and applied research that would qualify as fundamental research under 15 CFR §734.8. If, however, the

researcher or the University did not share the information freely and did not publish or disseminate it broadly within the scientific community, the information would no longer qualify as fundamental research.

To summarize, the University does not object to substituting "or" for "and" in the definition of "use" contained in 15 CFR §772.1 because, under current BIS regulations and interpretations, the University believes that the change would not result in "deemed export" licenses being required to perform fundamental research, except in the limited circumstances described above. However, it appears that the OIG does not interpret the EAR and the regulatory exemptions and definitions the same way BIS does. The OIG, for example, criticized a laboratory operated by the National Institute of Standards and Technology (NIST) because NIST did not secure the operations manual for a piece of controlled equipment (OIG report, page 28.), and no mention was made as to whether the operations manual was publicly available or had been provided confidentially by the manufacturer to NIST.

If, in implementing the OIG recommendation on the "use" definition revision, BIS were to also revise the regulatory exemptions or interpretation, such a change would have a significant and negative effect on the industrial base of the United States and its workforce, both for the manufacturer of dual-use equipment and for any company that uses such equipment in its operation, as well as on the University's ability to perform its research mission. The University therefore urges BIS, in the event that it does make the change to "use", to also make clear that the actual use of the equipment itself is not being controlled by such a change, that manufacturers may continue to make their user manuals publicly available, and that the change simply affects the section of the regulations governing technical data about controlled equipment, when such technical data is held as confidential or proprietary. In particular, we urge BIS to make clear that technology that arises during use of equipment in fundamental research (described in scenarios 3 and 4 above) is, itself, within the scope of the fundamental research exemption, as long as the technology is published or otherwise freely disseminated in the scientific research community.

Use of Country of Birth as Criterion for Deemed Export License Requirement

As stated above, under its export compliance plan, the University operates within the regulatory exemptions (including the "fundamental research" exemption) applicable to controlled technology that is publicly available. Therefore, it believes that it is not required under the regulations as drafted to obtain "deemed export" licenses before publicly available technology is provided to foreign nationals. However, should BIS change its interpretation of these exemptions and should the University be required to obtain "deemed export" permits, the change advocated by the OIG would place a substantial burden and cost on the University.

The initial cost would be placed upon any manufacturer or contractor providing formerly exempt material to the University, because they would be making the initial transfer of export-controlled technology. They presumably would have to verify the country of origin of each of the University faculty, staff or students to whom they were delivering the technology (as well as to all other purchasers of the commodity). An additional cost would then be incurred by the University because the University would have to determine which of its 350,000 employees and students were foreign nationals and manually review and verify the records of the foreign nationals to determine the country of origin for each foreign national. As a practical matter, University employees would be placed in a position of determining the veracity of birth-related documents from all manner of countries and jurisdictions. Many reputable people will not have access to this information; they will be delayed in becoming employed and efficiently integrated into the University. However, disreputable people will have the incentive and perhaps ability to provide false or forged documents.

It should be noted that country of birth is not a data element that must be collected or maintained by an employer under the Immigration and Naturalization (INS) Act requirements for determining eligibility to work. Many employers have not retained copies of the INS eligibility documentation and in most cases it would require the employer to recollect and record birthplace information. At that point, the University would have to try to determine, employee by employee and student by student, which controlled technology they were likely to encounter in performing their jobs and studies and which restrictions under the CCL would apply to each affected individual. In the University's open academic environment, information typically is freely and broadly shared in scholarly exchanges, classroom settings, and academic lectures, making it difficult to limit the burden by narrowing the documentation review to just a few individuals.

Beyond the very real record-keeping and verification burden and cost to the University, we believe that such a requirement would exacerbate the increasing problem faced by our campuses and national laboratories and other U.S. research institutions in attracting the very brightest faculty, students, researchers, and scholars from around the world. At a time when we want to nurture international exchanges and collaborations to enhance the effectiveness of academic research, we should be wary of bureaucratic procedures likely to heighten the perception that the United States is not welcoming of foreign students and scholars. Foreign-born students and scholars have contributed significantly to U.S. research and development, and discouraging them from coming here may damage immeasurably the vitality of our nation's research enterprise. A person who has spent several decades as a permanent resident of one country, and who has already met the State Department's entry and visa rules, may well feel unwelcome when faced with a new rule that singles them out because of their country of birth (which they may well have left in childhood). We urge BIS to carefully consider these "costs" as well, and to reject the OIG's recommendation to use country of birth as a licensing criterion.

Finally, the OIG report notes approvingly that the State Department's Directorate of Defense Trade Controls uses a country of origin approach in its administration of the International Traffic in Arms Regulations (ITAR). The OIG asserts that, because this approach is already being used by the State Department, it would be consistent and practical for BIS to use the same approach. The University believes that the ITAR's exemption for information in the "public domain" allows it to share information with a foreign national that would otherwise be controlled without obtaining an export license. 22 CFR §120.11. More importantly, it must also be noted that the items covered on the ITAR's U.S. Munitions List is far narrower than all of the "dual use" items that appear on the CCL. Therefore, the University does not support the use of the State Department's approach to country of origin by BIS.

Clarification of Supplemental Guidance – Answer to Question A(4)

The University agrees that the answer to Question A(4) in Supplement No. 1 to Part 734 of the EAR needs to be clarified. However, the correct answer would appear to depend on the reason for the prepublication clearance imposed by the Department of Energy (DOE) in the question. If DOE were to impose a prepublication clearance to protect patent rights, a temporary delay for such purpose would not violate the fundamental research exemption. 15 CFR §734.8(b)(3). However, if DOE imposed the clearance requirement for national security reasons, the release of such information under the EAR would be governed by 15 CFR §734.11. We have included our proposed text of the clarification in Attachment 1.

Clarification of Supplemental Guidance – Answer to Question D(1)

The University believes that the answer to Question D(1) is correct as stated, although it may be viewed as incomplete. Consistent with the discussion above, the University believes that the answer could be clarified to note that while a license is not required for a foreign student working in a laboratory as long as the research on which the student is working qualifies as "fundamental research," an export license would be required where, in working with a controlled piece of equipment, the student needed to receive controlled technology of a confidential or proprietary nature. Again, we have included proposed text for the clarification in Attachment 1.

Attachment 1
Supplement No. 1 to Part 734
Questions and Answers—Technology and Software Subject to the EAR

Question A(4): The research on which I will be reporting in my paper is supported by a grant from the Department of Energy (DOE). The grant requires prepublication clearance by DOE. Does that make any difference under the Export Administration Regulations?

Answer: It would depend upon the nature of the prepublication clearance to be conducted by the DOE. If the prepublication review is for the purpose of identifying patentable inventions or proprietary data provided by another and the review causes no more than a temporary delay in publication, then the activity would still qualify as fundamental research (§734.8(b)(2) and (3) of this part). However, if the prepublication review is for the purpose of controlling dissemination of the research results and the DOE reserves the right to withhold permission for publication, then the activity would be considered government research covered by contract controls (§734.11 of this part) and would be subject to the EAR. Once the federal sponsor approved the publication, and the contractual obligation has been met, then the publication of the results and further dissemination would no longer be subject to the EAR (see also Question and Answer E(1)).

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

Answer: No license is required for a foreign graduate student to conduct fundamental research in a laboratory. Further, no license is required for a foreign graduate student to use equipment in the laboratory. However, in cases where: (1) the equipment is listed on the Commerce Control List; (2) the manufacturer of the equipment has provided (or the researcher has created) technical information about the production, development, or use of the equipment that is not publicly available under §734(b)(3) of this part; and (3) such technical information is also specifically listed on the Commerce Control List; an export license would be required to provide the technical information (defined as "technology" in the EAR) to the foreign student in cases where the EAR required a license to send such technology to the home country of the foreign student. In sum, the foreign student may use the equipment, but they may not be able to access non-publicly available technical information about the equipment, depending on whether the EAR requires a license to send such technical information to the student's home country.