

University Committee Faculty Working Group on Classified Research

Final Report

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Executive Summary

The right to disseminate newly created information lies at the heart of the academic research enterprise. While some universities would appear to have embraced classified research as part of their portfolio, in fact they maintain separate and distinct facilities that are more accurately described as U.S. government national laboratories operated by the university as a public service.

National security is challenged today by unconventional forces (e.g., enemies who are not defined by national boundaries) and/or through nontraditional means (e.g., attack through cyberspace rather than physical insult). Thus it is appropriate to review UW-Madison's current policy on classified research at this time and make necessary recommendations for changes in policy.

Recommendation 1: In special circumstances, the best interests of society motivates the need to conduct research where the results are not openly and widely disseminated. The University recognizes the value of access to classified research opportunities for faculty, staff, and students and therefore will develop streamlined policies and processes for access to appropriately secured off-campus facilities to enable such research.

Recommendation 2: The University authorizes faculty to devote effort to classified research. As with all activities, work devoted to classified research must not interfere with the faculty member's ability to engage in essential duties assigned by the individual's department, including teaching, scholarly research (including the dissemination of knowledge), public service, and governance of the institution.

Recommendation 3: The University authorizes academic staff and students to participate in classified research if the classified research provides an opportunity to the academic staff member or student that outweighs the restrictions placed on the dissemination of the outcomes of the research.

Recommendation 4: Classified activities will not negatively influence University decisions of promotion and tenure for faculty. Substantial contributions to classified activities by academic staff will factor into promotion through recommendations by the principal investigator. Classified activities will not negatively influence PhD dissertation completion.

Recommendation 5: Any principal investigator engaged in classified research will be required to provide a notification letter to students and academic staff indicating that if they agree to participate in classified research it may result in inability to publish their work in the open literature.

Recommendation 6: The University will create administrative processes consistent with U.S. government security laws that allow classified research to be conducted by UW faculty for an outside agency or organization in separate secure facilities. The outside agency or organization will handle all contracting and other business related issues and UW participants could be payrolled directly by the agency or organization or through UW, based on a subcontract from the agency or organization as is done with current Intergovernmental Personnel Act (IPA) assignments to federal agencies.

Recommendation 7: The University will create administrative processes that allow subcontracts from outside agencies that do classified research for the purposes of supporting UW faculty, staff and student participation in unclassified components of the research. This is already possible today for unclassified research.

Introduction and Charge to Working Group

The Classified Research Working Group (WG) was charged by the Chair of the University Committee on March 24, 2014 with the task of reviewing current University of Wisconsin-Madison (UW-Madison or University) policies on classified research, reviewing current policies of selected peer institutions, making recommendations on future classified policy at UW-Madison and recommending any administrative changes that would facilitate the recommendations. This request by the University Committee is resultant to the passage of Wisconsin Senate Bill 587, which authorizes the University to conduct classified research. As the Chancellor, in consultation with the faculty, creates the process for accepting classified research contracts and conducting the research on campus as called for in Wisconsin Senate Bill 587 we encourage her to take into consideration the findings and recommendations included herein. The members of the WG are listed in Appendix A. The letter of creation of the WG and the charge to the WG are provided in Appendix B. Wisconsin Senate Bill 578 is in Appendix C.

Creation, stewardship and dissemination of knowledge are among the foundational principles of institutions of higher education. The right to disseminate newly created information lies at the heart of the academic research enterprise. Publicly funded universities such as the University of Wisconsin-Madison have a particular responsibility to ensure that the discovery and knowledge generated at that institution are shared broadly with the citizenry of the state, nation and world. Indeed, one of the hallmarks of this university - the Wisconsin Idea - urges that the insights gained by those on campus be disseminated widely for the benefit of the broader community. Nothing in this report is intended to suggest a retreat from these principles. However, we also recognize the value, on selected occasions, of members of the University community having access to facilities that can house classified research. The separation of open and restricted research has been maintained on university campuses, wherein classified or industrial research is relegated to special laboratory facilities or institutes that were in fact separate from the academic university, with separate location, separate administrative structures and separate contracting mechanisms. Appendix D has a list of the most notable of these affiliated laboratories. Most of these separate laboratories affiliated with universities date back to World War II when the U.S. government enlisted these universities to assist in the war effort with research into specific fields such as radar. Following the end of World War II, these laboratories continued, addressing ongoing national security issues. So while some universities would appear to have embraced classified research as part of their portfolio, in fact they maintain separate and distinct facilities that are more accurately described as U.S. government national laboratories operated by the university as a public service. The research staff of these special laboratories do not substantially overlap with the conventional university researchers, though some faculty and graduate students often have a role in both the laboratory and university environments.

National security is challenged today by unconventional forces (e.g., enemies who are not defined by national boundaries) and/or through nontraditional means (e.g., attack through cyberspace rather than physical insult). Once again, the U.S. government is looking to universities to assist in understanding these threats and in performing research to find

countermeasures to defeat these threats. Clearly, U.S. research universities are an unparalleled national resource for basic research. To the degree that academic basic research is applicable to understanding and counteracting national threats, there is strong motivation among some faculty to participate in this activity.

Thus it is appropriate to review UW-Madison's current policy on classified research at this time and make necessary recommendations for changes in policy.

Recommendations on Classified Research at University of Wisconsin-Madison

Narrative:

Existing UW-Madison policy does not unconditionally prohibit classified research. Instead the policy focuses on the right to publish and classification is listed as one of several examples where restrictions are found. The relevant policy documents are in Appendix E. The UW-Madison Policy on Open Research & Free Interchange of Information, citing the importance of open research to the “sifting and winnowing by which alone the truth can be found”, states:

“As policy, the university will not undertake research with restrictions on openness or academic freedom on its campus. Examples of unacceptable restrictions include classification, required external approval of research results before publication, or exclusion of members of the University’s community from participation in research.”

This document goes on to state:

“The University recognizes that, in a very few circumstances, the best interests of society will mitigate against broad participation in research and open exchange of information. In such cases, the Vice Chancellor for Research may grant exceptions to this policy. Exceptions will be very rare and will require that the research is critically important to the University’s mission and serve a demonstrable greater good. If these conditions are not met, the University will decline or discontinue the research or, if an acceptable off-campus site is available, consider moving it to such off-campus site.”

Current policies at selected peer institutions are included in Appendix F. In summary, they are quite comparable to UW-Madison’s current policy. Of particular note is the policy at Johns Hopkins University (JHU). JHU is well known for its Applied Physics Laboratory (APL), which does \$480M per year in classified research. APL was created during World War II and still exists today. It is a U.S. government national laboratory operated by JHU, quite close to Washington, DC. The JHU policy on classified research is the following:

“As part of the commitment to its public service mission, the Johns Hopkins University endorses faculty participation in research in the national interest. At the same time, however, the University’s commitment to openness in documentation and dissemination of research results precludes the pursuit of classified research or the use of classified information with the academic enterprise. Thus no classified research will be carried out on any academic campus of Johns Hopkins nor will classified information be used to satisfy the criteria for any academic degree requirements, faculty appointments, or faculty promotions. Further Johns Hopkins will not accept other restrictions on research or research information related to non-statutory classifications. An exception to this policy is the Applied Physics Laboratory, which is not an academic division, and has a distinct mission that makes it an appropriate venue for classified research.”

In addition to the philosophical implications of classified research are the practical considerations that make its conduct on the UW-Madison campus problematic. Physical security for facilities in which classified research is conducted is extensive and cumbersome. There are

multiple concentric layers of locks and interlocks on doors. All electromagnetic signals entering and leaving the facility must be shielded from possible detection. Computer and voice signals must be encrypted. There must be armed protection either present or within range for five minute response. There must be an authentication system to allow admittance of only cleared personnel. The U.S. government establishes standards for the construction of such facilities and establishes operating procedures for their use. These are called SCIFs, Sensitive Compartmented Information Facilities. Thus, to conduct classified research UW-Madison must be compliant with all the federal standards for such facilities and operations and under regular supervision of a controlling government agency. Deliberate breach of this security and disclosure of classified information is a serious federal crime, whether done by an external agent or by a security cleared person.

The administration of classified research typically would require security clearances for all administrative personnel involved with the submission of classified proposals, administration of awarded contracts, payroll of personnel conducting the research, and all other facets of indirect involvement in the research. This administration must be done in facilities with the same security level as the research site. Obtaining a security clearance from the U.S. government can take from 6 to 18 months, once it is requested by the sponsoring agency. The current cost is about \$40,000 or more per person, depending on the complexity of the background check. The logistical and administrative costs and complexity of conducting classified research in the midst of an otherwise open environment of the UW-Madison campus are substantial.

To put into action the current UW-Madison policy that allows classified research under special circumstances, the major stumbling blocks are where to do the research and how to administer it in the absence of existing facilities and properly cleared personnel. This would call for the creation of such facilities either by UW-Madison or by an outside organization that partners with UW-Madison. As referenced later, such a facility has in fact been created in Madison by the Wisconsin Security Research Consortium.

Recommendation 1: In special circumstances, the best interests of society motivates the need to conduct research where the results are not openly and widely disseminated. The University recognizes the value of access to classified research opportunities for faculty, staff, and students and therefore will develop streamlined policies and processes for access to appropriately secured off-campus facilities to enable such research.

Recommendation 2: The University authorizes faculty to devote effort to classified research. As with all activities, work devoted to classified research must not interfere with the faculty member's ability to engage in essential duties assigned by the individual's department, including teaching, scholarly research (including the dissemination of knowledge), public service, and governance of the institution.

Recommendation 3: The University authorizes academic staff and students to participate in classified research if the classified research provides an opportunity to the academic staff member or student that outweighs the restrictions placed on the dissemination of the outcomes of the research.

Recommendations on Protection of Faculty, Academic Staff and Student Rights

Narrative:

The introduction of significant research activity that is classified and not available for peer review or administrative review opens the possibility for conflicts between the interests of the sponsor and the interests of UW-Madison and the interests of its employees and students. Traditional measures of research productivity and impact are peer reviewed publications in the open literature and patents filed with the U.S. Patent and Trademark office. Conversely, at U.S. government laboratories conducting classified research, the review process and determination of merit are done internally. These laboratories must maintain a competitive advantage over our adversaries and thus they build internal checks and balances to promote excellence in research and innovation and reward outstanding employees. Personnel in these laboratories may participate in classified conferences similar in nature to open scientific conferences but where the content of such conferences is classified. However, it remains an internal process directly connected to the mission of the laboratory.

In the case of UW-Madison, students and academic staff present a special challenge. The University owes a great “duty of care” to students, academic staff and young faculty, to ensure that they are able to advance in their careers. There is a power mismatch between students and faculty mentors and between academic staff and research PIs that could be abused in the context of classified research. If both faculty and students are directly engaged in classified research there is no opportunity for the chain of command, i.e., department chair, college dean, etc., to review their activities.

In a positive example, suppose a faculty member or academic staff member headed a large and successful classified research program off the campus that was comparable in size and reputation to successful programs on the campus. How would the “star” researcher be evaluated?

The following recommendations are in the spirit that classified research is separate from a PI’s research portfolio.

Recommendation 4: Classified activities will not negatively influence University decisions of promotion and tenure for faculty. Substantial contributions to classified activities by academic staff will factor into promotion through recommendations by the principal investigator. Classified activities will not negatively influence PhD dissertation completion.

Recommendation 5: Any principal investigator engaged in classified research will be required to provide a notification letter to students and academic staff indicating that if they agree to participate in classified research it may result in inability to publish their work in the open literature.

Recommendations on Administrative Facilitation of Classified Research

Narrative:

Several different scenarios can be constructed for the conduct of classified research. In all cases, the research itself is classified and must adhere to the security regulations of the U.S. government. However, the associated administrative processes might vary depending on circumstances.

In the least restrictive case study, research might involve the creation of computer models, algorithms, processes or physical devices such as detectors that are unclassified and the existence of them is not classified. An example is an atmospheric computer model for prediction of pollution dispersal from a concentrated source. If however this model were applied to the dispersal of radioactive ingredients from a “dirty bomb”, then the resulting calculation is classified. Another example is computer systems software that monitors and measures the performance of large computer applications software. Installed on an unclassified computer system, this software is unclassified as are the results it produces. Installed on a classified computer system, the software and its results are classified. A mathematical algorithm could be discovered for solving sets of very difficult mathematical equations used in common applications, such as fluid dynamics and turbulence. Applied to basic science such as a supernova explosion, this is unclassified. But applied to a defense system, this algorithm’s result is classified. Many such examples can be imagined and some of these exist today in the research portfolio of UW-Madison.

In the most restrictive case study, the existence of the classified research topic is itself classified. Thus the amount of effort being employed to conduct the research and all associated administrative documentation such as the proposal, reports, human resource records, etc. are classified. Such research is commonly conducted by the U.S. Department of Defense (DoD) and National Nuclear Security Administration (NNSA).

There are intermediate scenarios where the title of the research and all of its conduct are unclassified but some selective reporting to the sponsor, once it is associated with other classified information, is classified. A classified report must be created in a secure facility using secure computers and transferred over a secure network, even if it reports on otherwise unclassified research.

There currently exists at least one outside organization in the Madison area with the credentials to support faculty in classified research; the Wisconsin Security Research Consortium. The WSRC currently supports the Wisconsin Information Security Research Center devoted to cybersecurity research. The WSRC has built a SCIF located off campus, but near UW-Madison, and is ready for commissioning for federally sponsored classified research. Information about WSRC and WISC is in Appendix G. Thus, a local facility for classified research off the University campus is available today.

Recommendation 6: The University will create administrative processes consistent with U.S. government security laws that allow classified research to be conducted by UW faculty for an outside agency or organization in separate secure facilities. The outside agency or organization will handle all contracting and other business related issues and UW participants could be payrolled directly by the agency or organization or through UW, based on a subcontract from the agency or organization as is done with current Intergovernmental Personnel Act (IPA) assignments to federal agencies.

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