

An Overview of University Research Tool Box

Purpose: This document is intended to:

- Help universities identify key opportunities within the lifecycle of research to provide awareness training and reminders concerning responsibilities to protect research outputs and;
- Help federal agencies understand how academic research is both different and similar to industry research enabling development of better threat products to share with the university community.

Intended Use and Caveats: Each university has its own nuances, procedures and policies for proposal submission, agreement negotiation and acceptance of award terms and conditions. In addition, each university takes an independent stance on submission of patent applications, ownership of technology and encouragement of start-up companies.

- It is encouraged that this document be used as a tool for discussion with federal agencies, legislative and government representatives, and corporate officers on the differences between the academic environment and industry research.
- During discussions, it is intended that individuals will share experiences based on their own institutions using this guide as a base for interactions.
- Interactions are intended to be an open and working line of discussion. Exclusive reliance on this document is not recommended.
- The authors encourage all forms of engagement with government representatives by the academic community to foster understanding and furtherance of the academic mission and protection of the international research landscape.
- Nothing contained within this document is intended to serve as legal or binding advice nor the sole solution for engagement.
- The authors of this document encourage additional feedback based on experiences during the use of the document.

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Background: This product was developed by the Academic Security and Counter-exploitation (ASCE) Working Group. The working group was established to tap the expertise of universities that have demonstrated excellence in academic security and counterintelligence programs in an effort to help address the threat foreign adversaries pose to U.S. academic institutions. The group includes a variety of universities, from those that conduct only fundamental research to those that conduct classified research on behalf of the federal government.

You can receive additional information about the Academic Security & Counter Exploitation Program and request membership information by emailing ASCEP@tamus.edu

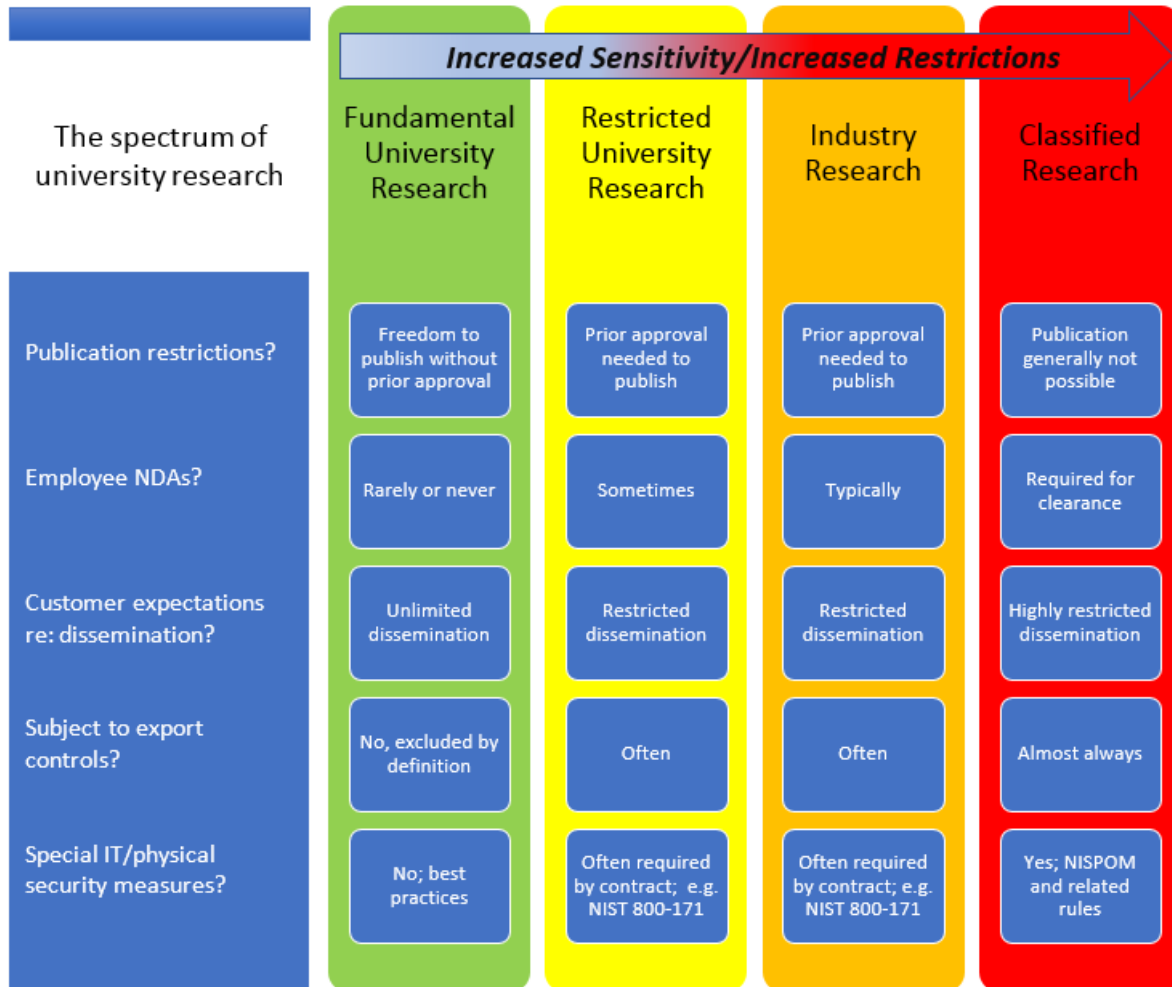
Section 1 - Varying Research Portfolios

Universities have a wide spectrum of research portfolios, varying from institutions that conduct primarily fundamental research with limited (or no) exceptions through institutions that accept restrictions broadly including classified work. It is important to understand that even universities that accept restrictions on research conduct and results rely extensively on fundamental research dollars to further their mission.

- Universities take various positions on controlled work. The key possible positions are:
 - **Purely fundamental research** – such universities will not accept contracts or grants with research dissemination or publication restrictions and therefore will work only on research that is deemed fundamental and freely publishable.
 - **Fundamental research, with exceptions approved by leadership** – such universities start from the default position that work must be unrestricted and freely publishable, but have a waiver process that involves university leadership before accepting controlled work.
 - **Controlled unclassified research allowable** – such universities may accept research dissemination and participation restrictions if the work can be done in compliance with the applicable regulations. These universities will evaluate each project to determine what regulations (typically export control and data security regulations) apply and may disapprove any projects they cannot perform in accordance with relevant requirements. They will often have a robust export control/information assurance team to review such projects and monitor those projects post-award.
 - **Classified research allowable** – such universities hold Facility Security Clearances from one or more relevant federal agencies and will typically be able to do controlled unclassified work as well as work subject to the NISPOM. They will have NISPOM required programs, such as insider threat programs, that can be leveraged for unclassified risk mitigation. They will also still have a range of controlled and fundamental research.

Section 2 – The Spectrum of University Research

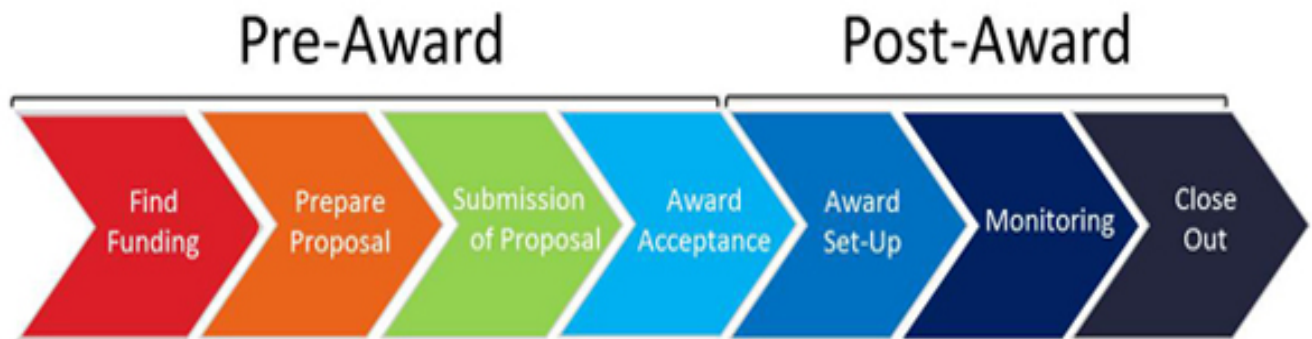
The graphic below outlines some general characteristics of the various types of research conducted at Universities, depending on their position on controlled work.



Section 3 – Differences between Research Conducted by Universities and that Conducted by Industry

CHARACTERISTICS OF ACADEMIC RESEARCH	CHARACTERISTICS OF INDUSTRY RESEARCH
Core mission is to create and disseminate knowledge broadly.	Core mission is to create research and products that maximize value for shareholders.
Directed by individual researchers with broad discretion over determining area of inquiry.	Directed by market analysis and industry leadership decisions.
Researchers are given broad autonomy to seek funding and manage research within limitations of sponsor and federal requirements.	Researchers given limited autonomy and directed to pursue specified technologies that produce maximum value to the company.
University owns potential intellectual property rights to research inventions, however agreements generally do not preclude researchers from transferring research information to another institution.	Employees are often bound by non-compete contracts and confidentiality agreements.
Universities, by nature, encourage international engagement and have varying nationalities on their campuses at all times.	Industry may have the ability to restrict full access to their facilities to U.S. citizens or permanent residents.
Researchers drive publication and dissemination decisions when no sponsor or federal restrictions apply.	Publication may be guarded strictly due to patent/IP protection.
May be subject to open records laws of their states, which can vary greatly.	Able to accept restrictions on notification of award and proprietary use of name.
University faculty generally work a 9-month contact with an option to work in the summer on research. This also allows for faculty to work on personal consulting/business ventures.	Industry researchers generally have “full-time” employment restricting outside activities in similar fields.
Universities research portfolios vary by institution.	Industry generally relies on contracts in their field to survive or they go out of business.

Section 4 – the Typical University Research Lifecycle



- **Preproposal stage. May include any or all of the following:**
 - Informal discussions with potential sponsors or collaborators
 - Preliminary, self-funded research, necessary to attract outside funding
 - Finding and reviewing funding opportunities
 - Pre-proposals or letters of intent

- **Proposal stage:**
 - Key personnel Identified, additional positions may be noted but individuals are not named
 - A formal statement of work and budget are developed
 - University departmental and central administrators review the proposal
 - Initial export control review at the proposal stage may occur
 - University submits the proposal with Institutional Official's signature
 - At most Universities, fewer than 30% of proposals submitted to funding agency are selected for funding

- **Award/negotiations stage:**
 - Award or contract is issued to Institution, not the PI
 - The Institution negotiates the terms as appropriate
 - Specific regulatory offices will be engaged when relevant contract terms warrant. Examples of such regulatory consultations may be:
 - Dissemination, publication, or participation restrictions due to citizenship/nationality
 - Specific cybersecurity requirements, such as NIST SP 800-171/DFAR 252.204-7012
 - Human subject or animal subject protocols
 - Access and physical security controls as appropriate
 - Physical and information technology security requirements addressed in the form of technology control plan if warranted
 - Acceptance and approval of award/contract or in, rare cases, decision not to pursue

- **Post-award/operational phase of a project:**
 - Research commences
 - Routine financial oversight, including ability to be audited by sponsoring agency
 - Continued monitoring of controlled research protocols including export-controlled work, human subjects and animal research
 - Research publications/presentations are developed and dissemination occurs. When necessary, approval is sought from sponsor
 - Invention discovery and disclosure may occur at any point in the operational phase
 - New funding is contemplated for additional research and may be applied for at this stage

- **Project Close-Out:**
 - Final technical report crafted by key personnel and sent to sponsor
 - Final financial reports sent to sponsor by Institution
 - Final auditing may occur

Additional notes: While the research lifecycle generally follows this pattern, each university may have a different approach to oversight and regulatory management. Designation as a private or public institution may play a factor in the approach each university takes in the organization of their research lifecycle and tolerance for accepting restricted work. In addition, varying stages of the lifecycle are occurring throughout a university at all times based on the individual researcher and subject matter. This document is merely an overview of the general university research environment and how it varies from typical industrial research and development.