Maximizing U-I Engagement with DOE National Labs

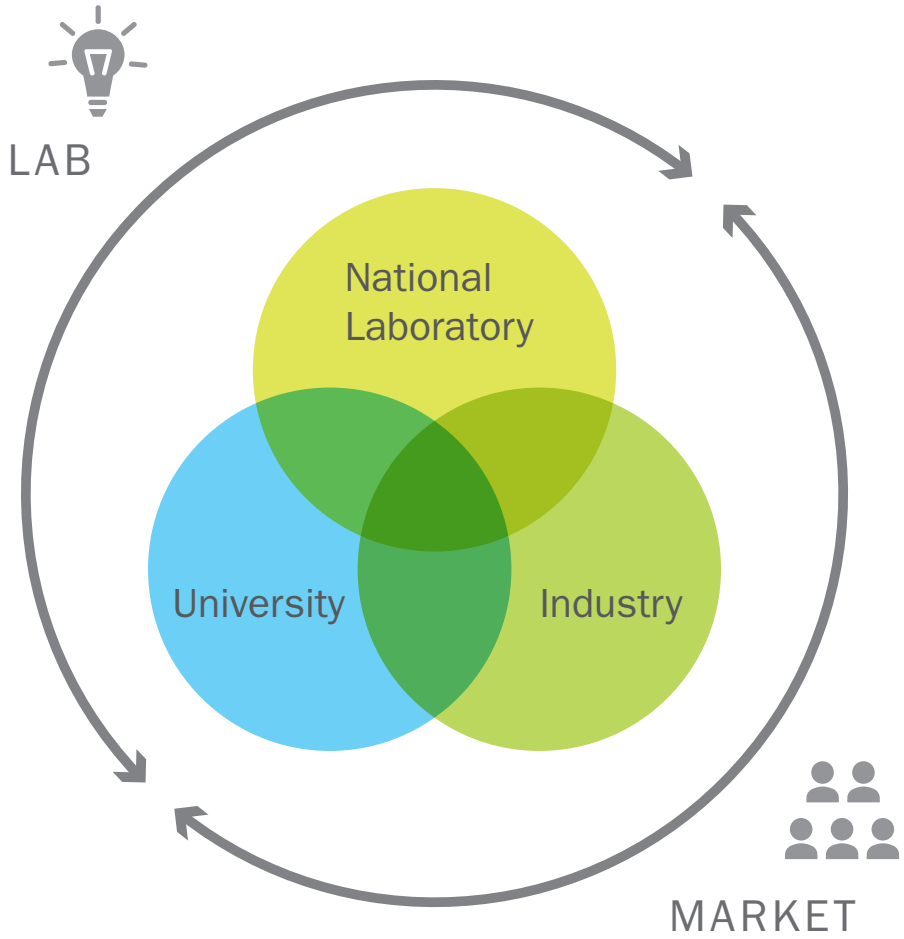
Quick Guide

UIDP

University Industry
Demonstration Partnership

Maximizing University-Industry Engagement with DOE National Laboratories

The U.S. Department of Energy (DOE) laboratories represent a significant national resource and research infrastructure, and trilateral university-industry-DOE lab partnerships present strategically valuable opportunities for each party. Increasingly, the federal government is developing programs that provide high-value opportunities for universities, industry and DOE labs to collaborate. In the longer term, these partnerships will play a critical role in the global economy.



The University Industry Demonstration Partnership (UIDP – uidp.org) undertakes projects to help its academic and corporate members advance their interests through greater collaboration and partnerships between sectors. Many UIDP members are seeking more strategic and beneficial ways to engage DOE labs. This Quick Guide was developed to provide greater illumination on DOE Labs, and to illustrate how UIDP members can engage these labs to advance their mission. As a first step, the UIDP* has created this Quick Guide that summarizes the issues that may need to be addressed in maximizing collaborative efforts related to trilateral university-industry-DOE lab partnerships. **Please share this document with those representatives within your organization who are, or may be involved, in engaging DOE national laboratories.** As is consistent with UIDP tradition and practice, we welcome the input and feedback from member institutions in developing additional deliverables under this project.

We wish to give special thanks to the project co-chairs, Elizabeth Adams (Northwestern University) and Anthony Radspieler (Samsung), and project manager, Pat Denny for their initiative and leadership in the development of this Quick Guide.

DOE LABORATORY ORGANIZATION

Department of Energy Management. There are 17 separate laboratories in the Department of Energy, each with distinctive missions and technical strengths. The labs are dispersed geographically over 14 states. Administratively, ten labs fall under the purview of the Office of Science, three labs under the National Nuclear Security Administration, and one lab each under the Offices of Energy Efficiency and Renewable Energy; Environmental Management; Fossil Energy; and Nuclear Energy. While operating under general DOE regulation and guidance, these six offices are responsible for establishing policy for labs under their purview.

Contractor Management. Sixteen of these national laboratories are "Government-Owned, Contractor-Operated" (GOCO) laboratories, managed under a unique legal relationship by a Management and Operating (M&O) contractor. Under this management model, national laboratories are owned by the federal government and operated by universities, non-profits or industrial contractors. The GOCO/M&O model aims to permit contractors to bring the best private sector personnel and research management practices to the national laboratories, and provide the laboratories with the flexibility necessary to broadly engage academia and the private sector. One lab, the National Energy Technology Laboratory, is Government-Owned and Government-Operated (GOGO) by the DOE.

Differences Among Labs. This document attempts to provide general information on working with the DOE labs, keeping in mind that each DOE lab is a unique entity, in part due to management structure and culture.

"Technology Transfer". Within the DOE (as well as within the broader federal laboratory structure), "technology transfer" is a very broad term referring to any process by which knowledge, intellectual property or capabilities developed at a government laboratory are transferred to any other entity.

Establishing Contact. Frequently, collaboration develops via a pre-existing relationship with a researcher or engineer at the DOE lab. Indeed, every researcher or engineer at a DOE lab is formally responsible for technology transfer. Additionally, DOE labs typically have a Technology Transfer ("T2") Office, which functions as a facilitator to support most collaborative efforts. A lab's T2 Office may be contacted very early in a partnership to ascertain or validate the appropriate collaboration mechanism. The DOE Technology Transfer Working Group has provided a guide[1] for partnering that includes contact information for all of its labs' and facilities' Technology Transfer Websites, as well as the licensing, CRADA, and Work-for-Others contacts.

** This document was developed solely by the UIDP, and is for UIDP members ONLY.*

COLLABORATION OPPORTUNITIES AND MECHANISMS

DOE laboratories are multifaceted organizations. There are thus many opportunities for partnership with them. The following collaboration mechanisms represent distinct technical capabilities as well as strategic approaches of the labs. The below agreements may be used to varying degrees at the DOE laboratories. The T2 Office within each lab may help determine the collaboration mechanism best suited to the interests of the parties on a given project, and then support the negotiation and management of that agreement. The T2 Office may also coordinate with the lab's management, R&D, legal, and procurement offices during negotiations. While each lab has significant waiver authority, variances from "mandatory" DOE policy requires DOE approval, and will slow down the process. As appropriate, a technology commercialization plan for each party should be developed. In general, DOE labs use one of the following programs[2] to collaborate.

- **Cooperative Research and Development Agreement (CRADA)[3].** A CRADA is an umbrella vehicle which can be tailored to accommodate many types of research partnerships. It allows for collaborative work and either cost-sharing or in-kind funds to be provided by the collaborating partner, as well as for sharing of intellectual property and data.
- **Sponsored Research/"Work for Others" (WFO).** WFO Agreements permit DOE laboratories and facilities to conduct work for other federal agencies (such as NIH, NSF or NIST) and non-federal entities on a reimbursable basis. The work must pertain to the mission of the laboratory or facility, may not conflict or interfere with DOE Programs, and cannot directly compete with capabilities that are available in the private sector. Intellectual property rights generally belong to the sponsor. Although the majority of DOE's WFO services are provided in support of other federal agencies, DOE also performs work for the private sector, academia, and state, local and foreign governments.
- **Agreement for Commercializing Technology[4] (ACT).** ACT is a pilot program under which businesses may partner with participating DOE laboratories for research and development that commercializes technology. ACT is being piloted to address concerns about difficulties in partnering with the DOE laboratories that were raised in public responses to a DOE Request for Information on improving technology transfer. These concerns include requirements for advance payments, indemnification, and government use rights in intellectual property.
- **Designated User Facilities[5].** Some national labs have been designated by DOE as User Facilities. These laboratories make parts of their facilities and equipment available to non-federal parties to conduct research and development activities. The non-federal user of the facility pays the full cost of conducting proprietary research at the Lab and may maintain intellectual property and data rights. Users who conduct non-proprietary research and agree to publish the research results may not be required to cover the entire cost of the use of the facility.
- **Technical Assistance Agreements.** DOE and lab personnel can respond to inquiries from others seeking to further knowledge, solve a specific problem, or improve a process or product and provide some limited assistance.
- **License Agreements.** Laboratories' technologies are made available for licensing in addition to other commercialization-focused arrangements that can be used and combined to further a technology in collaboration with an industry or university partner.

In addition to the above, which are U-I initiated collaborations, U-I partners may collaborate with laboratories in response to DOE-initiated funding opportunities, such as grants, contracts, or a Basic Ordering Agreement (BOA). A BOA operates to some degree as a "master agreement" between the laboratory and the collaborating partner, establishing terms for subsequently agreed-upon projects. Individual task or purchase orders are issued under a fully-executed BOA, setting forth project specifics (scope of work, budget, terms particular to the project). Additionally, the DOE has a set of funding opportunities available specifically to its laboratories. Information on funding opportunities,

including program contacts and general program announcements, may be found on the DOE Office of Science program offices' funding opportunities web pages.[6]

The Federal Laboratory Consortium for Technology Transfer (FLC) identifies a cross-section of "technology transfer" mechanisms used by federal agencies, including DOE. The matrix[7] identifies a wide variety of mechanisms, the agencies that use them, and Internet links to agency websites where information about each agency's use of the mechanism and sample formats of mechanisms can be found.

AGREEMENT ELEMENTS

Individual elements will vary dependent on the type of agreement. The elements presented below generally refer to a Cooperative Research and Development Agreement (CRADA) agreement. DOE has developed a modular CRADA[8] to promote consistency across its labs. The modular CRADA presents DOE-approved language, approved optional language, and guidance for each article. DOE has also developed a manual which provides detailed requirements, standard terms and conditions, and a process check-list for non-DOE "Work for Others" (WFO) agreements.[9]

- **Proposal.** Formats will vary based on type of collaboration mechanism being pursued. Each DOE laboratory is delegated the authority and responsibility for negotiating the agreement and joint work statement but approval authority may be retained at the DOE Agency level.
- **Project Management.** Each Party shall assign and identify, in writing, a project manager. Either Party may change its project manager by providing written notification to the other Party. Each project manager shall be responsible for coordinating all matters relating to the agreement, any Statement of Work hereunder, and all other related matters between the Parties.
- **Intellectual Property.** The right to intellectual property requires discussion among all parties. U-I entities should identify background IP prior to negotiations, patent to protect as necessary, and reveal and document during negotiations. It is important to negotiate and incorporate into any agreement the foreground IP option terms, to include licensing. The U.S. Code and statutes provide guidelines for the treatment of IP within a CRADA and these are addressed in the DOE modular CRADA. The DOE facility user agreement can be nonproprietary or proprietary and establishes the general terms and conditions, including disposition of intellectual property, for work at the user facilities.
- **Confidentiality.** Confidentiality provisions in the agreement address how each participant's identifiable proprietary information will be handled, managed, and disseminated. The research proposal should outline strategies to maintain confidentiality of all parties' identifiable data, including controls on storage, handling, and sharing of data.
- **Liability/Indemnification.** In general, if the results of the research covered by the agreement are restricted in any way for the purpose of commercialization (such as through patents, copyrights, or Protected CRADA Information), or if there is a specific, identifiable laboratory technology being transferred, there must be a provision that indemnifies the lab contractor and the Government from all costs related to personal injury and property damage that may result from the participant's commercialization and use of a product, process, or service. Exceptions to this can be negotiated with government approval at the lab director level.
- **Compliance.** The DOE field program manager will review the joint agreement for compliance with Federal and agency regulations and guidelines. In general, a force majeure clause stating that neither party will be liable for unforeseeable events beyond its reasonable control must be included in the agreement, including but not limited to the following: Acts of God, acts or omissions of any government or agency thereof, compliance with requirements, rules, regulations, or orders of any governmental authority or any office, department, agency, or instrumentality thereof, fire,

storm, flood, earthquake, accident, acts of the public enemy, war, rebellion, insurrection, riot, sabotage, invasion, quarantine, restriction, transportation embargoes, or failures or delays in transportation.

- **Financial Considerations.** CRADAs in particular must include a statement of funding, showing the estimated contributions of the parties. Do not expect any actual monetary funding by the DOE lab; their contribution will be in the form of labor hours, facility usage, etc. The funding statement may indicate that the participant's contributions are also subject to availability of funds and should include provisions that describe the obligations of the parties relative to exceeding the estimated costs. DOE generally is unconcerned if the funds for the potential partner's share of a specific CRADA come ultimately from some other Federal program, so long as the decision process for obtaining those funds precedes the final CRADA negotiation and the obtaining of those funds complies with the rules of that process. Current DOE policy states participants' in-kind funds are due 90 days in advance but this can be negotiated. An annual signed financial report of the Participant's in-kind contributions to the project is required. Typically, financial data developed outside the agreement, but provided as part of agreement, is to be considered Proprietary Information and will be treated accordingly. Proprietary user agreements typically require full payment up front and no work may begin until user's advance payment is received.
- **U.S. Competitiveness.** DOE, in its policy on U.S. competitiveness, distinguishes among products, which are manufactured, and processes and services, which are practiced or implemented. In the context of a multi-national firm, it may be advantageous to the U.S. economy and to the competitive position of the firm for a process or service to be implemented worldwide as quickly as possible. When there are multiple partnering opportunities in a common technical or technology area, and limitations on resources for partnering, preference will be given to partnerships that accept the requirement for substantial U.S. manufacturing. The CRADA must include an article which sets forth the parties' agreement with respect to benefits to accrue to the U.S. economy as a result of the CRADA. The preferred benefit is that any products embodying any Intellectual Property resulting from the performance of the CRADA shall be manufactured substantially in the United States. This will be the laboratories' opening negotiating position for all CRADAs.
- **Security, Foreign Entity, Export Control.** Foreign ownership, control, or influence (FOCI) review is required as part of the security review of CRADA when participant access to classified information, access to special nuclear materials, or unescorted access to security areas within Departmental facilities is required. DOE must receive the prospective partner's response to eleven FOCI questions, including required additional information and the certification, prior to approval of the associated Joint Work Statement. These questions delve deeply into foreign ownership percentages, foreign involvement by the partner, and ITAR. Material and information resulting from the joint effort may be subject to Export Control laws and each party is responsible for its own compliance with such laws.
- **International Partnerships.** The DOE Office of International Affairs supports the Secretary of Energy and other Departmental elements with a range of expertise on international energy activities international cooperation in science and technology. This office maintains on expert listing of assigned international desk officers[10] for nearly every country in the world. This desk officer may be able to provide a constructive service when negotiating international agreements or US-International business research partnerships, to include technical and non-technical barriers to technology commercialization and deployment.
- **Conflict of Interest.** Each DOE lab is bound by a variety of conflict-of-interest (COI) policies, some of which emanate from DOE and some of which are founded on University policies, State law, and federal regulations. These policies pertain to a broad range of employee activities, including compensated outside business and professional activities, hiring procedures, sponsored research, human subjects' research, licensing, and technology transfer. While negotiating agreements, it is important to be familiar with local COI policies.

- **Logistics / Resources.** Identify the financial and non-financial resources required for a successful partnership. Identify the physical space, testing, IT, and access (email accounts, building access cards, library, equipment, computers, internet, etc.) requirements at the DOE federal lab.
- **Personnel Assignments.** Each Party may assign personnel to the other Party's facility to participate in or observe the research to be performed under the agreement. Such personnel shall not, during the period of such assignments, be considered employees of the receiving Party for any purpose.
- **Relationship with Ongoing Projects.** The roles, responsibilities, and authorities of visiting researchers with regard to other ongoing projects at the DOE or U-I institution should be addressed. Project work, especially proprietary efforts, must be compartmentalized physically and through information security.
- **Termination.** A termination clause exists in most agreements. Termination may be initiated by either party and the "causes" should be addressed in the clause. Potential reasons for early termination include: actual costs will substantially exceed estimated costs; failure of the participant to provide the necessary advance funding; any party's failure to promptly pay invoices, or departure from U.S. competitiveness commitments. Termination does not void non-disclosure or proprietary information agreements.

IDENTIFYING, ASSESSING, AND LICENSING TECHNOLOGIES

The DOE provides an Innovation Portal[11] to search for patents, patent applications, and available technologies. The Portal also permits browsing of the technologies available for licensing. The technologies listed within the Portal comprise those developed by U.S. Department of Energy laboratories as well as collaborating research institutions. The DOE Licensing Guide and Sample License[12] provides a general understanding of typical license agreement terms and provisions to help reduce both time and cost to license intellectual property (IP) from DOE's Laboratories.

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1 http://www.lbl.gov/Tech-Transfer/industry/Doing%20Business_lr.pdf

2 http://technologytransfer.energy.gov/arrangements

3 http://energy.gov/sites/prod/files/gcprod/documents/m4831-1.pdf

4 http://energy.gov/articles/eight-national-labs-offer-streamlined-partnership-agreements-help-industry-bring-new

5 http://technologytransfer.energy.gov/docs/designateduserfacilities.html

6 http://science.energy.gov/funding-opportunities/find-funding/

7 http://www.federallabs.org/flc/education/t2-mechanisms/matrix-agency/

8 http://techtransfer.energy.gov/TemplateCRADAagreement.pdf

9 http://energy.gov/sites/prod/files/gcprod/documents/m4811-1a.pdf

10 http://energy.gov/sites/prod/files/2014/02/f8/IA%202014%20ExpertListing%20Jan2014%20original%20copy.pdf

11 http://techportal.eere.energy.gov/

12 http://technologytransfer.energy.gov/arrangements#licensing

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