Fermilab

Managed by Fermi Research Alliance, LLC for the U.S. Department of Energy Office of Science

Working with DOE's National Laboratories

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Accelerator Stewardship Test Facility Pilot Program

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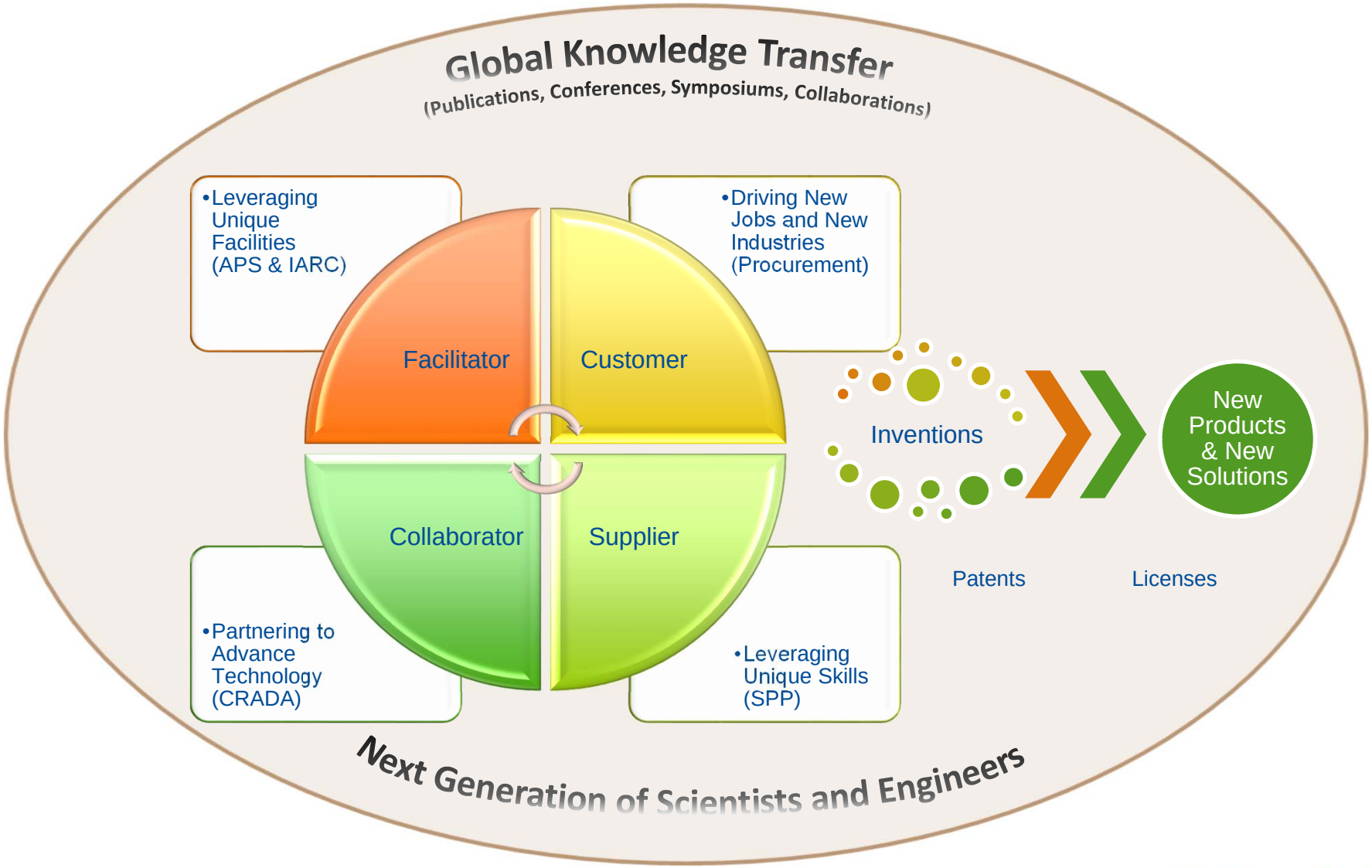
Overview

- National Laboratories as Engines of Innovation
- Several Partnership Mechanisms
- A Few Rules of Engagement
- Getting Started

National Laboratories as Engines of Innovation



Partnership Mechanisms

- User Facilities
- Licensing of Intellectual Property
- Sponsored Research
  - Cost-shared R&D with a Partner (CRADA)
  - Reimbursable R&D for a Partner (SPP)
  - Short-term technical assistance (TSA)

User Facilities

- Federally sponsored research facility available for external use to advance scientific or technical knowledge
- Open to all without regard to nationality or institutional affiliation
- Allocation of facility resources determined by merit review
- User fees are not charged for non-proprietary work; results must be published
- Full cost recovery (private funds) required for proprietary work (IP and data)
- Facility provides resources sufficient to conduct work safely and efficiently
- Facility supports a formal user organization
- Facility capability does not compete with an available private sector capability

User Facilities in Illinois

- Argonne is home to six national user facilities with 5000 users
  - Advanced Photon Source (APS)
  - Argonne Leadership Computing Facility
  - Argonne Tandem Linear Accelerator System
  - Center for Nanoscale Materials
  - Electron Microscopy Center
  - Transportation Research and Analysis Computing Center

Advanced Photon Source--- Most brilliant source of X-rays in the Western Hemisphere

- Fermilab is home to one very large national user facility with 2000 users
  - 6800 acre site
  - 16 km of accelerators & beam lines
  - Seven accelerators
  - Two primary proton beams
  - Secondary beams of pions, kaons, muons and neutrinos

Fermilab Accelerator Complex – Will produce the highest-intensity neutrino beam in the world

Licensing

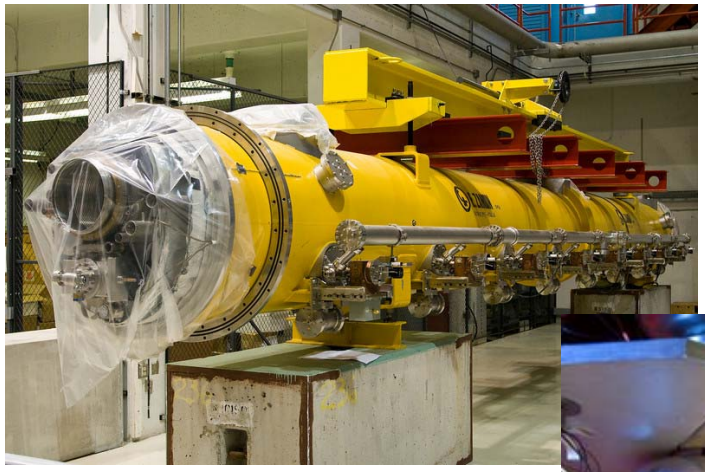
- Ability to access laboratory technology (patents and copyrights) for commercial application

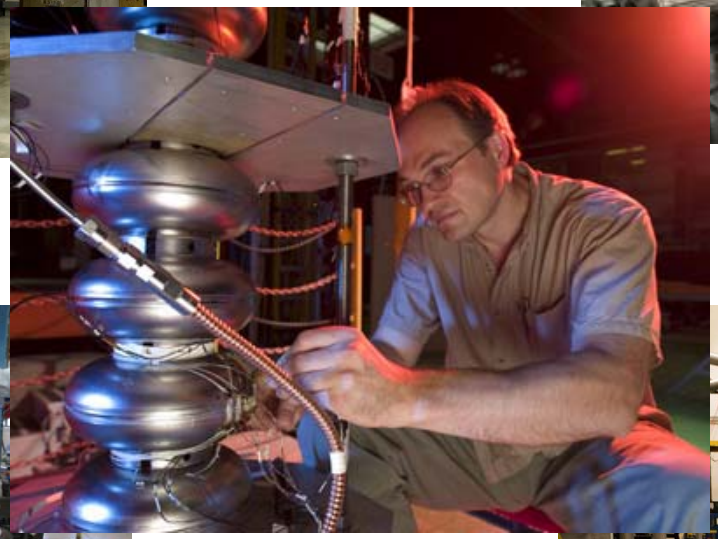
- Terms: Typical of industrial licensing
  - ✓ Exclusive, partially exclusive, and non-exclusive
  - ✓ Field of use and/or territory
  - ✓ License Fee and/or royalties based on sales
  - ✓ Diligence requirements

- Intellectual Property
  - ✓ Background inventions are available
  - ✓ Government retains specific rights

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

Accelerator Technology Development and Testing Facilities





Cooperative Research and Development Agreement (CRADA)

- Collaborative research for the mutual benefit of both parties

- Flexible Funding Mechanism
  - ✓ Each party bears their own cost ("in-kind" contributions)
  - ✓ Partner may fund all or part of laboratory costs ("funds-in") using private or public funds
  - ✓ No funds may flow from lab to Partner through the CRADA

- Intellectual Property (Subject Inventions)
  - ✓ Each party typically owns the IP they create separately
  - ✓ Parties usually share "jointly" in IP they create together
  - ✓ Allocation of rights is negotiable
  - ✓ Partner may obtain exclusive rights to lab IP

- Confidentiality
  - ✓ Subject inventions and data may be protected as proprietary for up to five years

- U.S. Competitiveness
  - Requires substantial U.S. manufacture of resulting products or other demonstrated economic benefit to the U.S. economy

Strategic Partnership Project (SPP)
(formerly known as Work for Others or WFO)

- Research is performed by the lab for the Partner (Sponsor)

- Funding
  - ✓ Costs are reimbursed by the Partner (full cost recovery)
  - ✓ Advance payment is required

- Intellectual Property (Subject Inventions)
  - ✓ Partner may elect title in Subject Inventions

- Confidentiality
  - ✓ Research results may be kept proprietary with limited exceptions

- U.S. Competitiveness
  - ✓ Partner agrees not to exclusively license a party to use or sell an invention in the U.S. unless it is substantially manufactured in the U.S.

Technical Services Agreement (TSA)
(simplified agreement based on SPP Framework)

- Short term technical assistance that leverages the unique capabilities and expertise of a laboratory (e.g. testing services)

- Funding
  - ✓ Costs are reimbursed by the Partner (full cost recovery)
  - ✓ Typically limited in scope and cost
  - ✓ Advance payment is required

- Intellectual Property
  - ✓ No rights are created or transferred (no R&D)

- Confidentiality
  - ✓ Results may be kept proprietary with limited exceptions

- U.S. Competitiveness
  - ✓ Partner agrees not to exclusively license a party to use or sell an invention in the U.S. unless it is substantially manufactured in the U.S.

Technology Transfer Mechanisms at DOE Facilities

U.S. DEPARTMENT OF ENERGY

Agreement	Use	Funding	Subject Inventions	Generated Data	U.S. Competitiveness	Cost	Highlights
Cooperative Research and Development Agreement (CRADA)	Collaborative research between DOE Labs and public and/or private entities for the mutual benefit of the parties	Private and/or Federal funds	Lab and Participant may elect their own inventions and Participant has right to negotiate exclusive license to Lab inventions	Protected for up to 5 years	Products embodying IP resulting from CRADA shall be manufactured substantially in the U.S.	Lab and Participant may share costs or Participant pays 100% funds-in	✓ Collaborative research ✓ 5 year data protection ✓ Designed for multi-party collaborative research
Strategic Partnership Project (SPP)	Work for businesses and other non-federal entities using highly specialized or unique DOE facilities, services or technical expertise	Private funds	Sponsor may elect title to Subject Inventions[1]	Protected as Sponsor's proprietary data w/limited exceptions[1,2,3]	U.S. Preference: Sponsor agrees not to grant any party exclusive right to use or sell products embodying Subject Inventions in the U.S. unless products are manufactured substantially in the U.S.	Sponsor pays full cost recovery	✓ Sponsor typically retains right to elect title to subject inventions ✓ Generated data treated as proprietary ✓Option for limited Gov. R&D license[3]
		Federal funds (e.g. grantee)	Lab may elect title to Subject Inventions of the Lab	Unlimited Gov. rights	U.S. Preference (see above)	Sponsor pays full cost recovery	✓ Access to unique facilities and expertise using federal funds
Agreements for Commercializing Technology (ACT)	Work for businesses and other non-federal entities using highly specialized or unique DOE facilities, services or technical expertise	Private funds	Initial title to the designated IP Lead. (ACT Participant or Lab Contractor)	Protected as proprietary data w/limited exceptions[1,2,3]	U.S. Preference (see above)	Participant pays full cost recovery plus additional negotiated compensation to the Contractor	✓Flexible terms for IP, indemnity, adv. payment ✓Optional performance guarantee ✓ Negotiable IP terms ✓ Option for limited Gov. R&D license[3]
Proprietary User Agreement	User may access designated facilities to conduct its own proprietary research	Private funds	User may elect title to its Subject Inventions	User may protect as proprietary	n/a	User pays approved user rate	✓Generated data treated as proprietary ✓Merit based access to unique facilities
Non-Proprietary User Agreement	Non-proprietary research at designated facilities	n/a	Lab and User may elect their own Subject Inventions	Unlimited Gov. Rights	U.S. Preference (see above)	Each party covers own cost	✓Merit based access to unique facilities

Certification: *The Lab provided this DOE technology transfer matrix and explained all the options available including the availability of WFO agreements and CRADAs. The Lab has also disclosed in writing the relative cost differential between performing the proposed scope of work under ACT, a non-federal WFO agreement, and a CRADA (including any additional compensation to the Contractor under ACT).*

By: _____ (Sponsor/Participant/User Name)

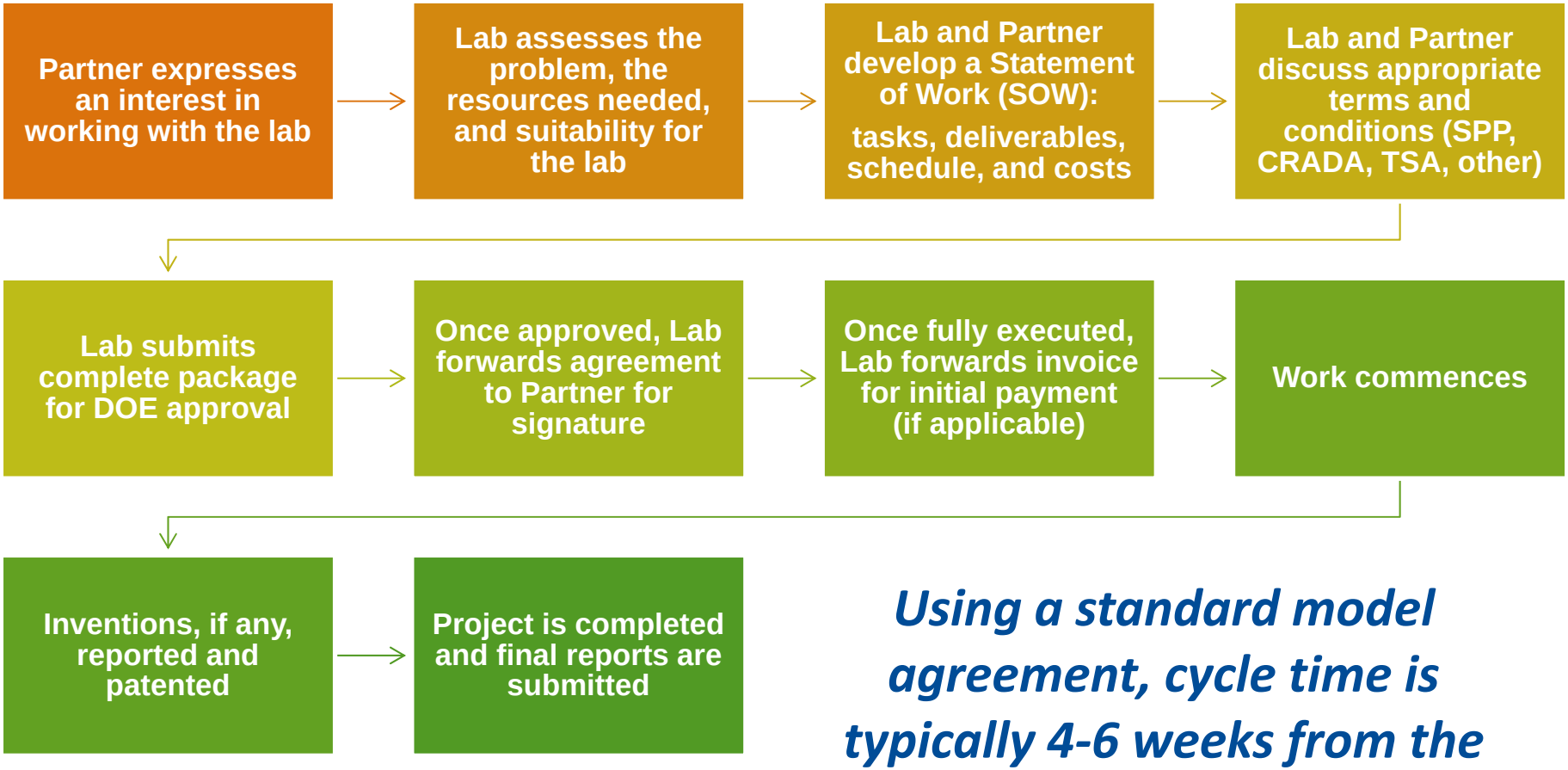
Signature: _____ Date: _____

[1] Certain exceptions or restrictions may apply (e.g. foreign SPP Sponsors may be granted the right to elect title to inventions and receive proprietary data protection but only after the approval of DOE field patent counsel and concurrence from the cognizant DOE program office).[2] Proprietary data protection may not be available at all facilities. [3] If the limited Gov. R&D license is utilized, data protection will be limited to 5 years.

A Few Rules of Engagement

- Projects need to be clearly defined and scheduled in advance
- Projects should be consistent with or complement the mission of the laboratory and the Department of Energy (DOE)
- Projects cannot conflict or interfere with regular ongoing programs at the laboratory
- Labs may not directly compete with the domestic private sector
- Labs may not take on work that creates a future “burden” for DOE
- The DOE and the labs do not provide product endorsements

Typical Process



Using a standard model agreement, cycle time is typically 4-6 weeks from the time the SOW is drafted.

Thank you for your interest!