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Thomas Mulkern
Collaborative Mechanisms
U.S. Army Research Laboratory

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The Nation's Premier Laboratory for Land Forces



Incubation Center That Revolves Around Govt Labs, Academia, Small Business, and Industry Collaboration

- Partners Include (foreign and domestic):
 - Academia
 - Industry, Small Business
 - Government, Military
- Research Efforts Align with Partner Research Interests and ARL S&T Campaigns



Benefit to Partners: Open Campus Provides **ACCESS to ARL Staff, ARL Facilities and Army Challenges**



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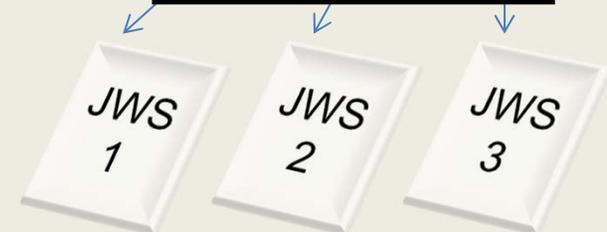
Cooperative R&D Agreement



Master CRADA

- Multiple projects possible under single CRADA
 - Projects defined in Joint Work Statements (JWS)
- IP protected
- Share Data, Facilities, Equipment
- Multiple campuses / divisions
 - Reduced staffing time

CRADA between U.S. ARMY RESEARCH LABORATORY and (COLLABORATOR) ARL CRADA# (XX-XX)		
ACRONYM	COLLABORATOR	US ARMY RESEARCH LABORATORY
LEGAL POC:	Name Title/Office Phone Email	Name Title/Office Phone Email
PROGRAM MANAGER:	Name Title/Office Phone Email	Name Title/Office Phone Email
SIGNATORY:	Name Title Organization Phone Email	Name Title Organization Phone Email
MAILING ADDRESS:	Organization Division Address City, State ZIP	Organization Division Address City, State ZIP



Supports the Open Campus Ecosystem
Enables Robust Exchange of Personnel



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Mechanisms for Collaboration



ARL with Academia, Small Business and Industry:

- CRADA
- Patent License Agreement (PLA)
 - Joint Ownership Agreement (JOA)
- Educational Partnership Agreement (EPA)
 - Outreach
 - Staff Rotations
 - Science Technology Engineering Math (STEM)

ARL with US Military / US Government:

- Memorandum of Agreement (MOA)
- Memorandum of Understanding (MOU)

ARL with Foreign Military / Foreign Government:

- MOA, MOU
- Data Exchange Annex (DEA)
- Project Agreement (PA)
- Engineer and Scientist Exchange Program (ESEP)

Exchange Staff

Government
Industry
Faculty
Post Docs

Leverage Facilities

In-House Labs
Enhanced Use Lease
Equipment

Share Data

Reports
Joint Pubs

Intellectual Property

Protect IP
License IP



CRADA Projects (Cumulative)



125 Active CRADA Projects
Over 75 in Staffing
Over \$30M of Leveraged In-Kind Contributions



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Partnership Intermediary Agreement

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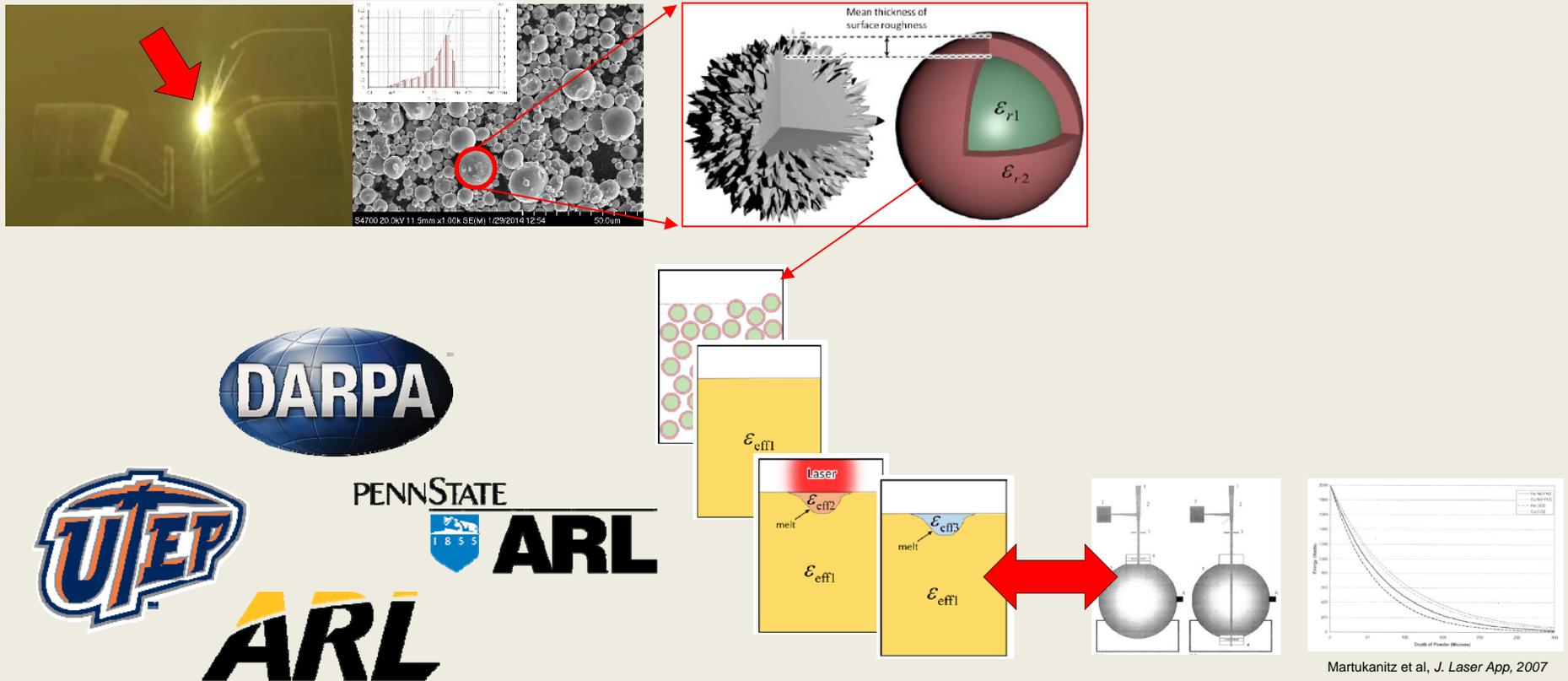
ARL Open Campus - Pilot Program

- Partnership Intermediary Agreement (PIA)
 - Commercialization
 - Incubator Space / Partnering
 - Outreach
 - Training
 - Metrics





Characterization and Modeling of Energy Scatter in a Metallic Powder Bed





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Li-ion Battery Collaboration

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Manufacturing Technology



Purpose:

- Produce high energy density safe Li-ion batteries
- Develop the manufacturing process for the 5V materials
- Prototyping Li-ion batteries that are tolerant to abuse and of higher energy density than currently available

Payoff:

- Improved performance across all platforms
- Safer operation of Li-ion batteries under abuse conditions

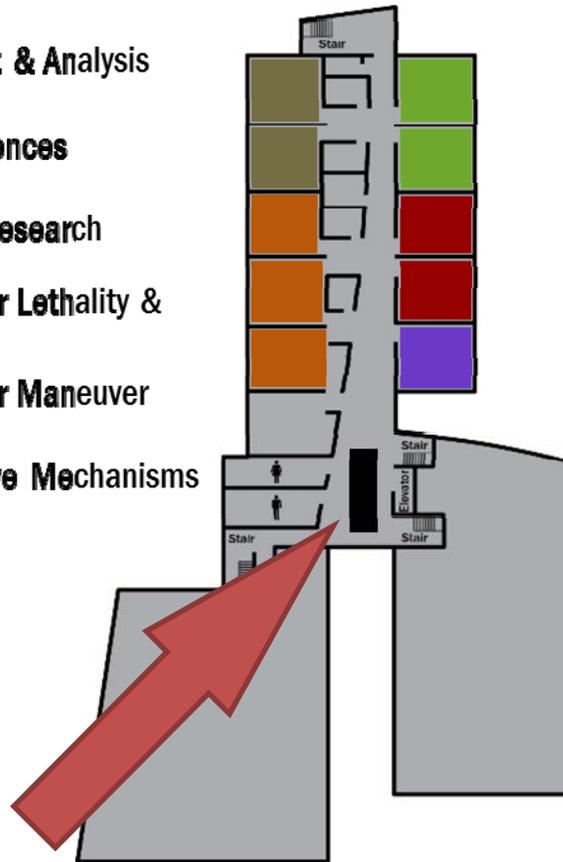




Mallette Center Second Floor

Poster Locations

-  Assessment & Analysis
-  Human Sciences
-  Materials Research
-  Sciences for Lethality & Protection
-  Sciences for Maneuver
-  Collaborative Mechanisms



- CRADAs
- PLAs
- MOUs / MOAs
- International Programs
- Post Doc Opportunities
- Personnel Exchanges
- PIAs
- Enhanced Use Lease
- Collaborative Space
- Outreach to Academia
- STEM K-12