



# PHM COE Management by Sandia's Intelligent Systems & Robotics Center



*Mobile Systems Range*

Leveraging \$150 Million DOE investment  
In Facilities, Equipment, & Tech Base



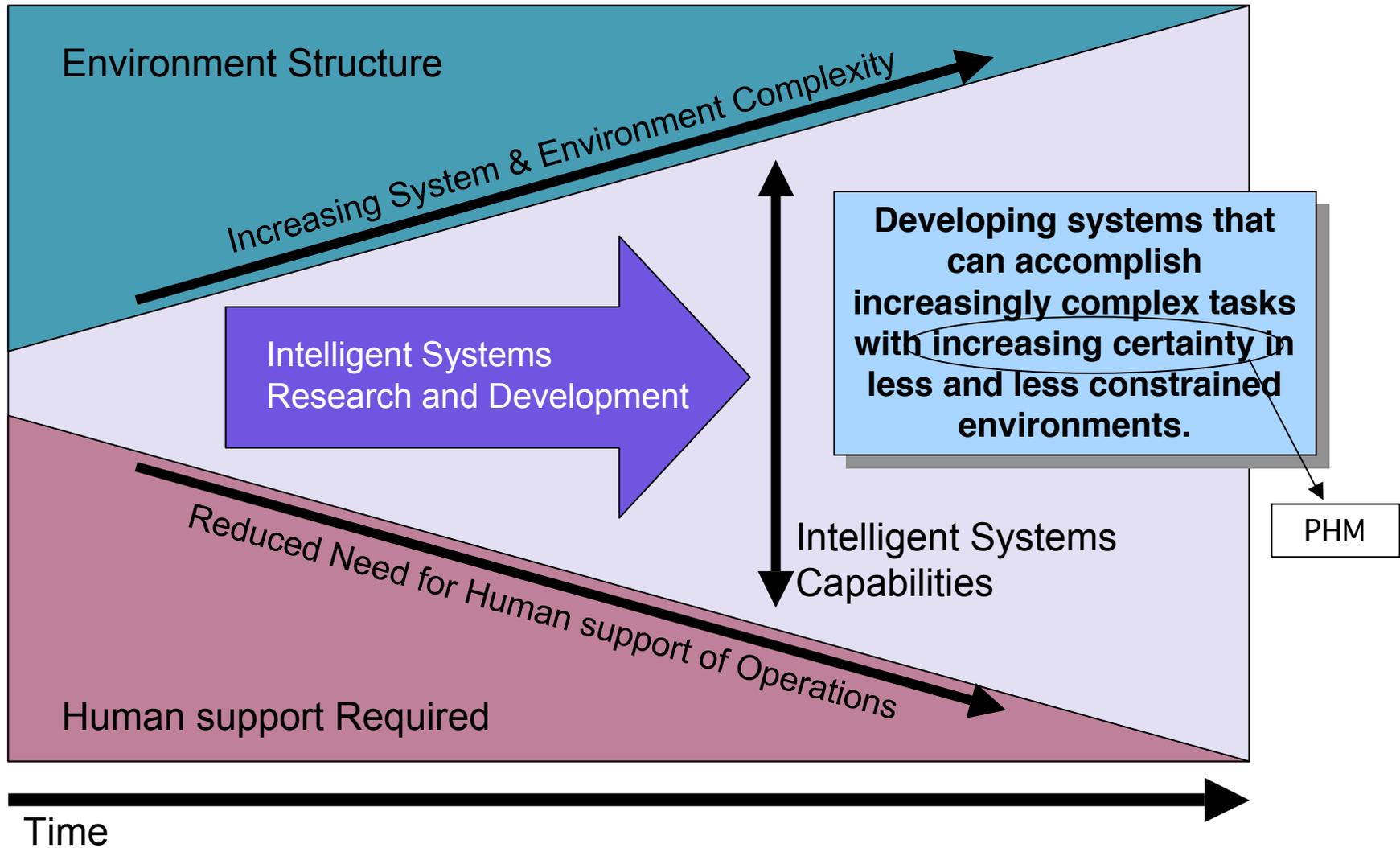
*Robotic Manufacturing Science & Engineering Laboratory*

Current funding level: ~\$40M	Heavy labs: 12
Technical Professionals: ~115	Light labs: 32
Number of Active Patents: 32	Total labs: 44

*Stephen Roehrig, Director*



# Our Focus is US National Security





# Our Tech Transfer Principles

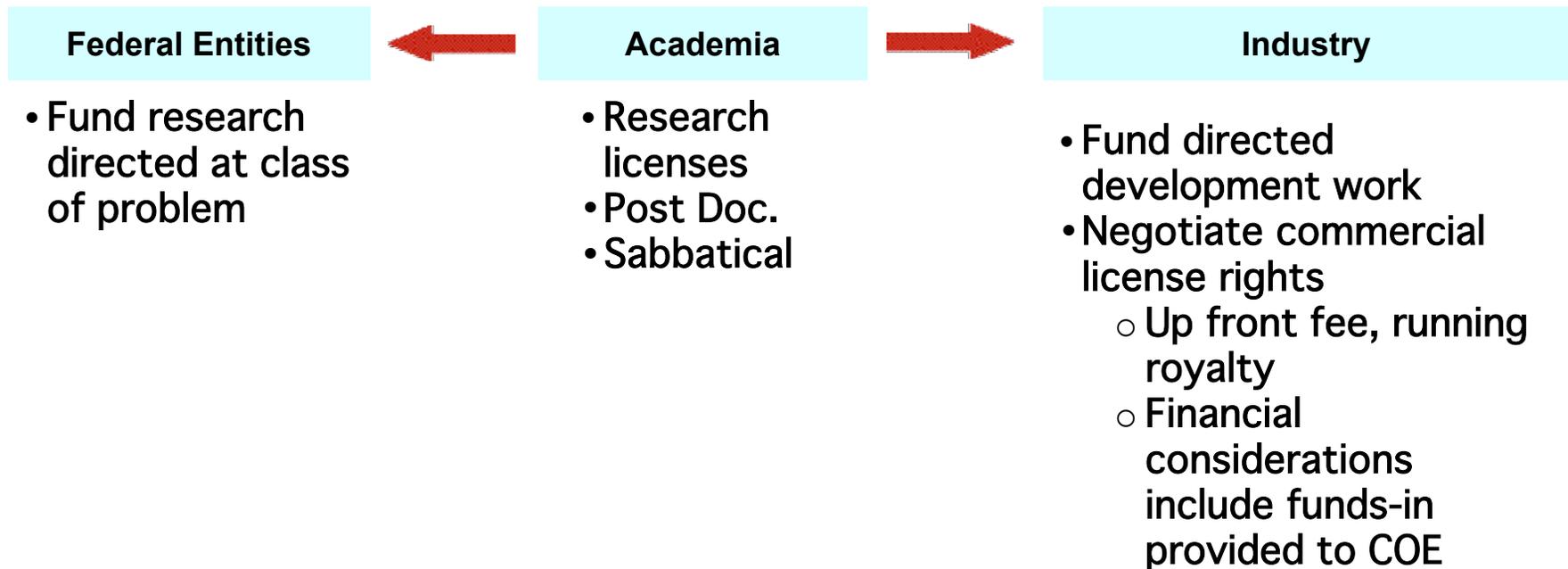
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- **Be the first integrator of technologies developed by SNL S&T Centers**
- **Strategic engagement with US private industry consistent with desires of SNL federal sponsors**
  - Documented importance of project to partner
  - Up-front negotiation of license and funds-in agreements
  - Formal project planning as first deliverable
- **Ongoing interactions with universities and FFRDCs**
- **Enhance skill set needed internally for national security mission**
- **Ideal results include deployment in non-federal markets**



# COE Approach: It's time to explain the pictures!

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# Partnerships and Agreements with Industry and Associations



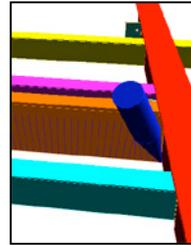
CRADA: Cooperative R&D Agreement

Numotech



Design and manufacture cushion that mitigates pressure sores

Spatial Corp. Atlantec Corp.



Automatic generation of weld path trajectories



FIA: Funds-In Agreement

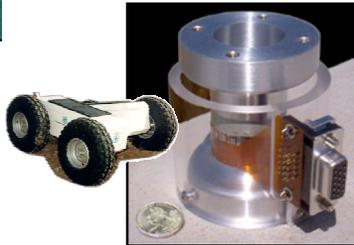
Technical Assistance

License: Research, Test & Eval., In-House Use, Govt. Use, Commercial

UF: User Facilities Agreement



ETI



Established products for manufacture and distribution

Remotec



IED Robotics control and manipulators





# Who wins?

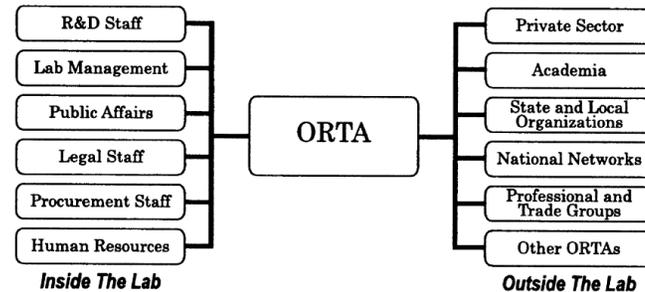
## US Industry

Input from COE participants will influence Sandia's federally funded R&D work.

COE participants can fund proprietary research tailored to their precise needs.

## Sandia

- Under the Stevenson-Wydler Act, Sandia is encouraged to engage in Tech Transfer with the US private sector to support economic development.

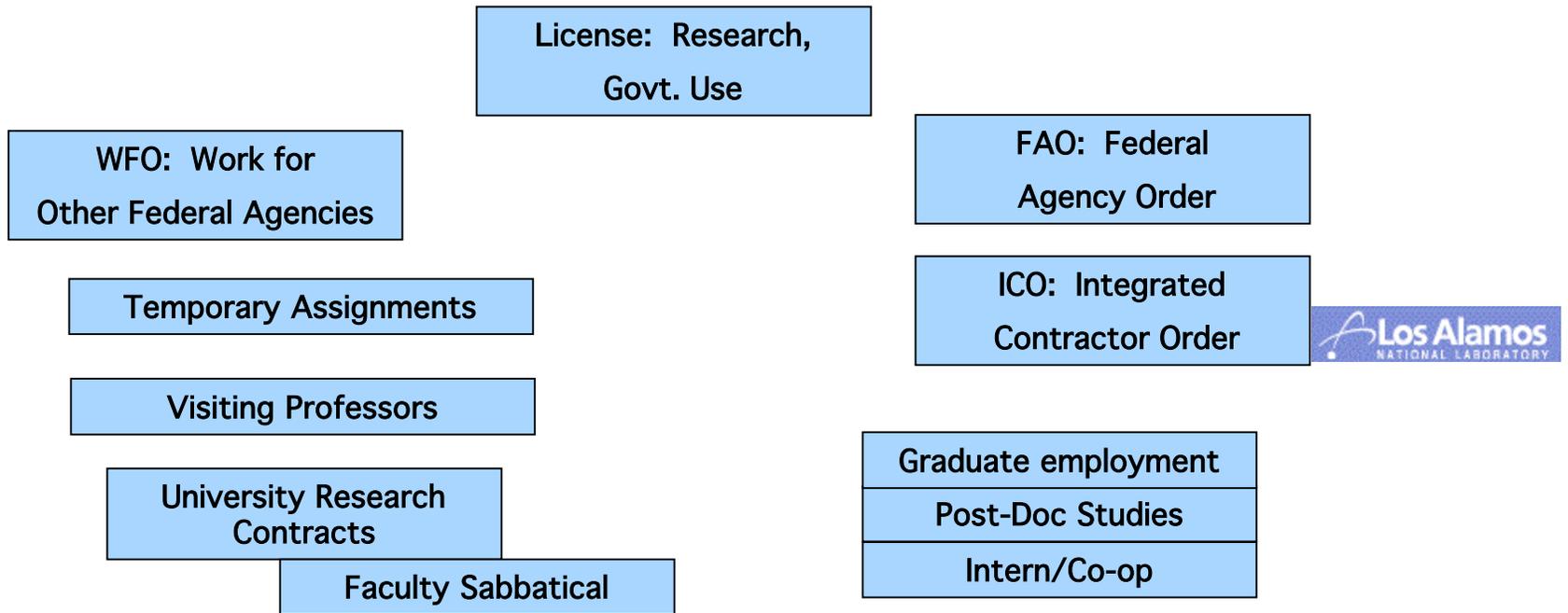


Source: Federal Laboratory Consortium for Tech Transfer Desk Reference April 2004



# Partnerships with Universities and Federal Agencies

There is a bi-directional valve for people and \$.



**Carnegie Mellon**



**AIR FORCE INSTITUTE OF TECHNOLOGY**  
*Civilian Institution Programs*  
 Education With Industry Program and  
 Industrial Development Education in Acquisition Program





# Who wins?

## **Federal Agencies**

**Leveraging DOE investments is a multiplier for your funding.**

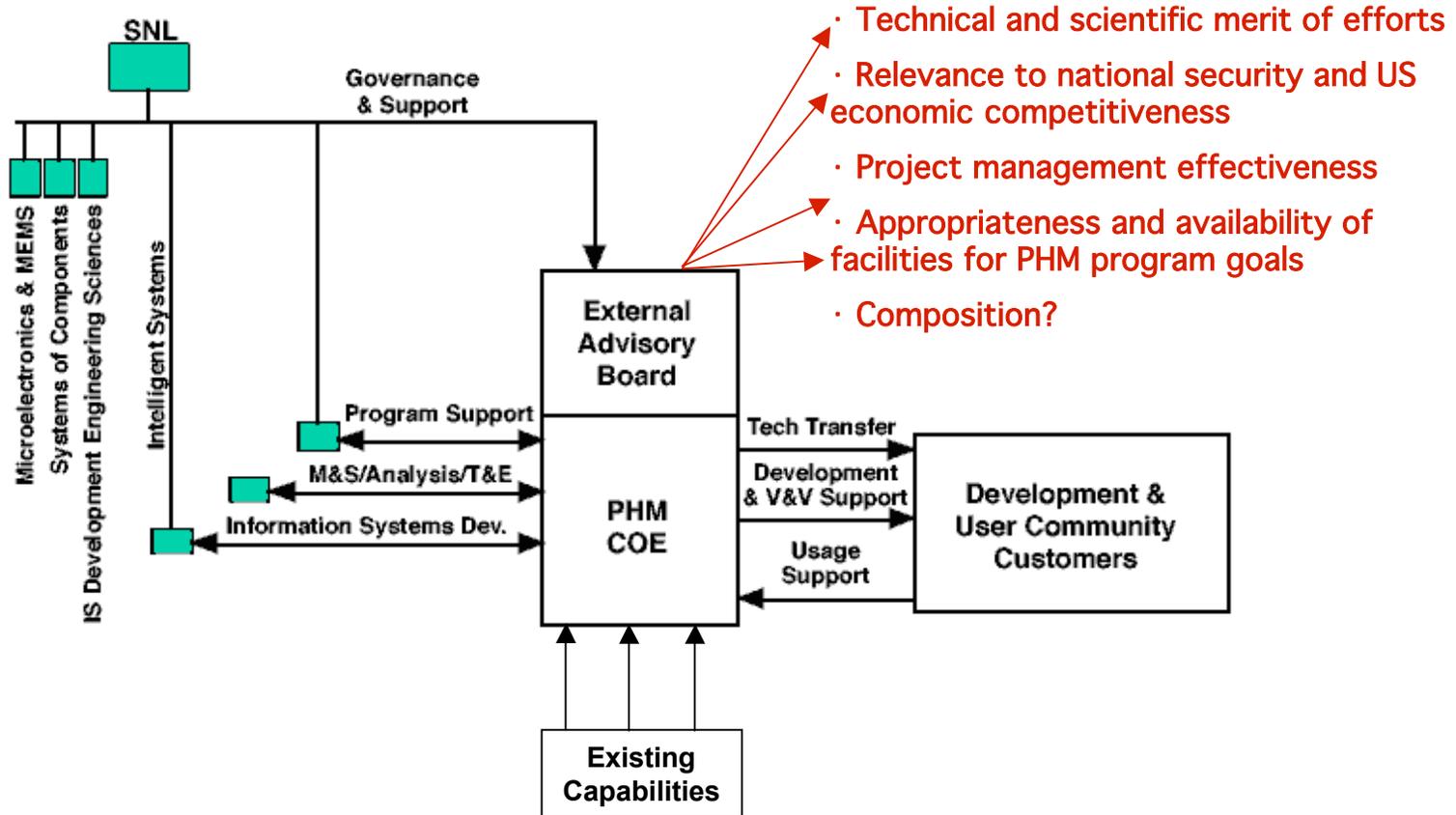
**Lifecycle emphasis on industry partnerships decreases lead time for field availability, and reduces cost of production.**

## **Sandia/DOE**

**Application of our tools to security problems of non-DOE agencies lets us verify the efficacy of improvements made to the nuclear weapons stockpile, without direct testing.**



# Role of Advisory Board



An External Advisory Board review of a program identifies improvements to that program and helps program participants obtain their desired objectives.



# Questions for Breakout Groups

## Industry

- Which PHM topics have high potential for multi-company cooperation?
- Does your industry association collect funds for sponsored research?
- Which PHM topics will probably require proprietary solutions?
  - Do you have data regarding the impact of these PHM topics within your company?
  - Does your company have a specific program or plan to address these topics?
- What IP would your company be willing to have assessed by Sandia for potential use by COE participants?
- Next steps for your company and Sandia?

## US Government

- Which PHM topics have been identified in writing as impediments to the success of your organization?
- Do you have data regarding the impact of PHM topics in your organization?
- Which offices sponsor PHM research of relevance to you?
- Does your laboratory, agency or command support the concept of joint work proposals with Sandia?
- Are there other groups that Sandia should work with because they are already addressing a portion of your PHM need?
- Next steps for your organization and Sandia?