

Industry University Cooperative Research Center

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Planning Grant Meeting

- To plan the joint **Industry** and **University** research agenda
- To determine the **feasibility** and **viability** of developing a center

I/UCRC: Mission and Vision

Mission:

- To contribute to the nation's research infrastructure base by **developing long-term partnerships** among industry, academe and government
- To **leverage NSF funds with industry** to support graduate students performing industrially relevant research

Vision:

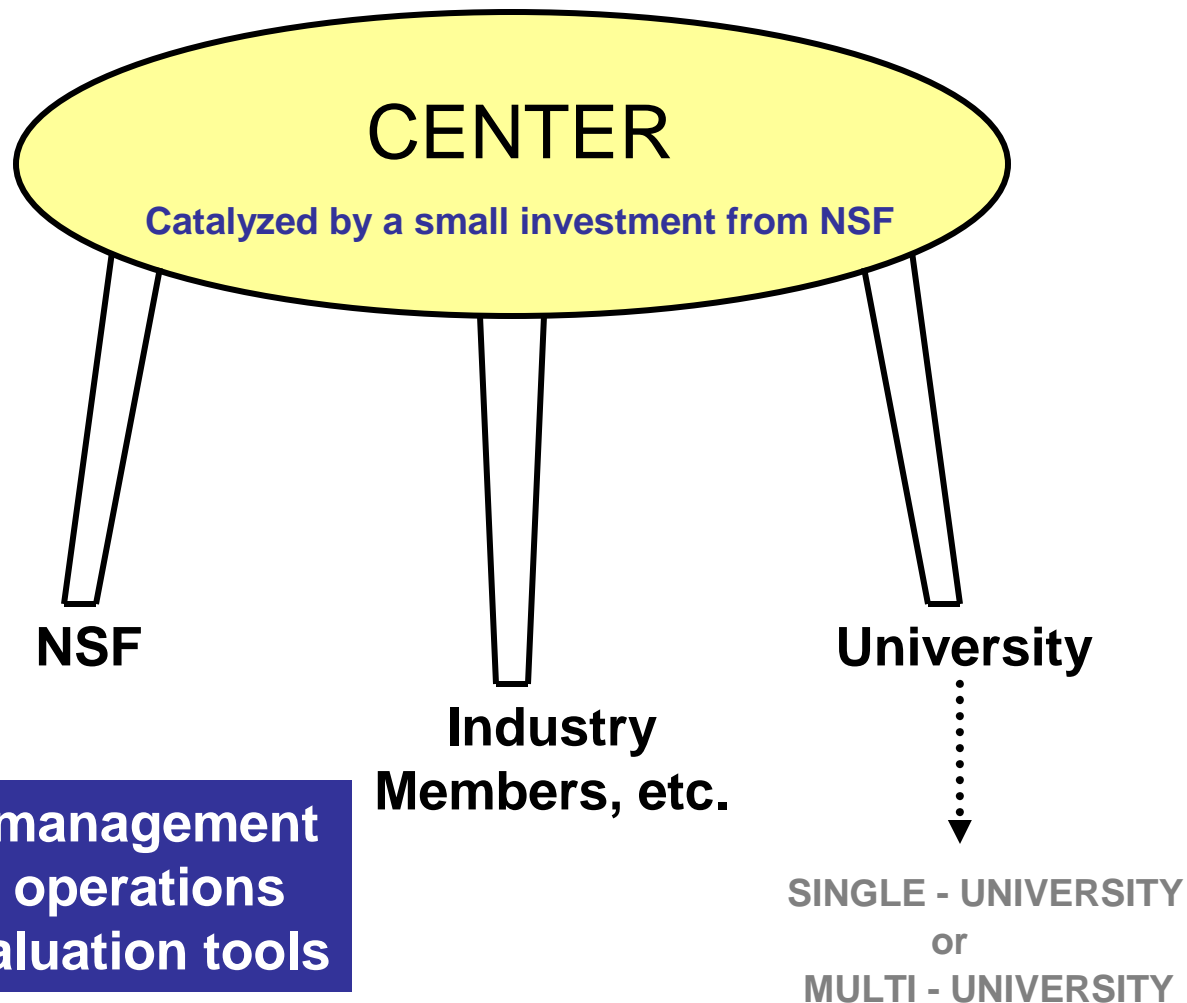
- To **expand the innovation capacity** of our nation's competitive workforce through **partnerships** between industries and universities

I/UCRC History

- Began as part of the Experimental R&D Incentives Program (ERDIP)
- The I/UCRC program began in earnest around 1978 (Alex Schwarzkopf)
- Legislative reforms passed in the 80s: Stevenson-Wydler Innovation Act, Bayh-Dole Act, Anti Trust Guide, and SBIR
- Evolution of Centers:
 - Started with single sites¹
 - Have now evolved into multi-site centers
 - I/UCRC program has grown to about 40 centers and over 75 universities

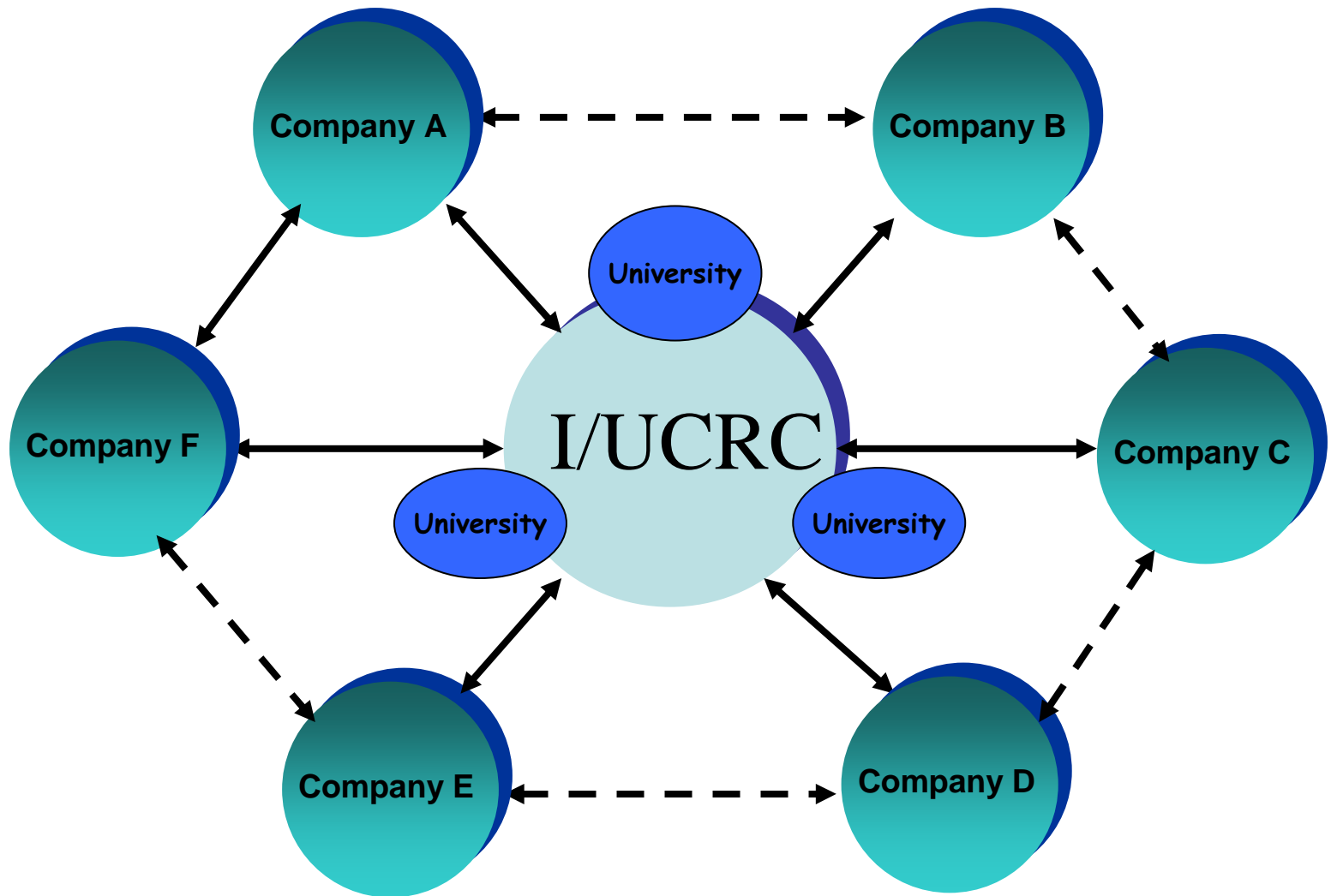
¹Site = a single University

NSF I/UCRC Can Be Envisioned as a 3-Legged Stool



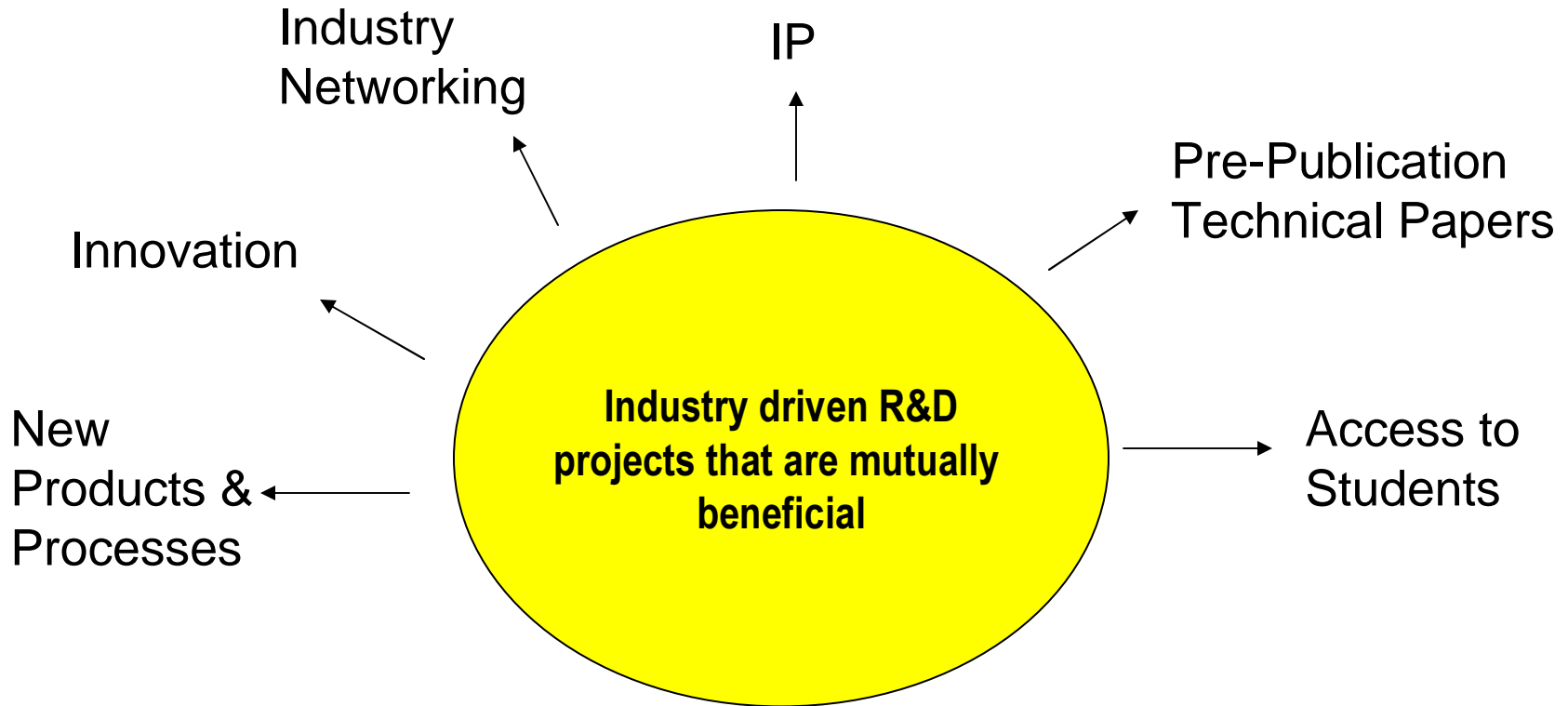
Like a research management “franchise” with operations protocol and evaluation tools

The I/UCRC Model



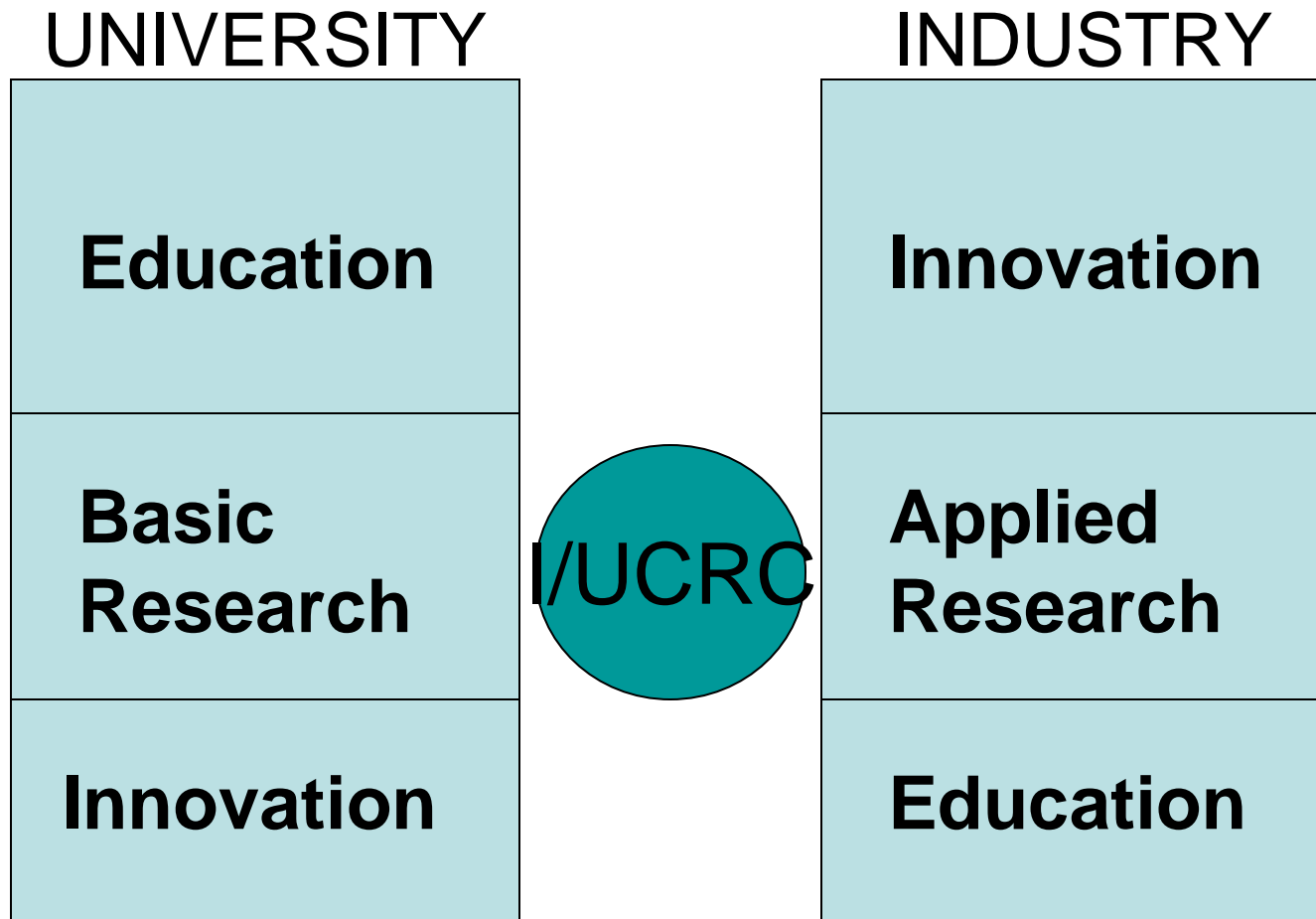
- Multi-university increases the research base
- Multiple companies provide interaction capabilities

What does an I/UCRC offer?



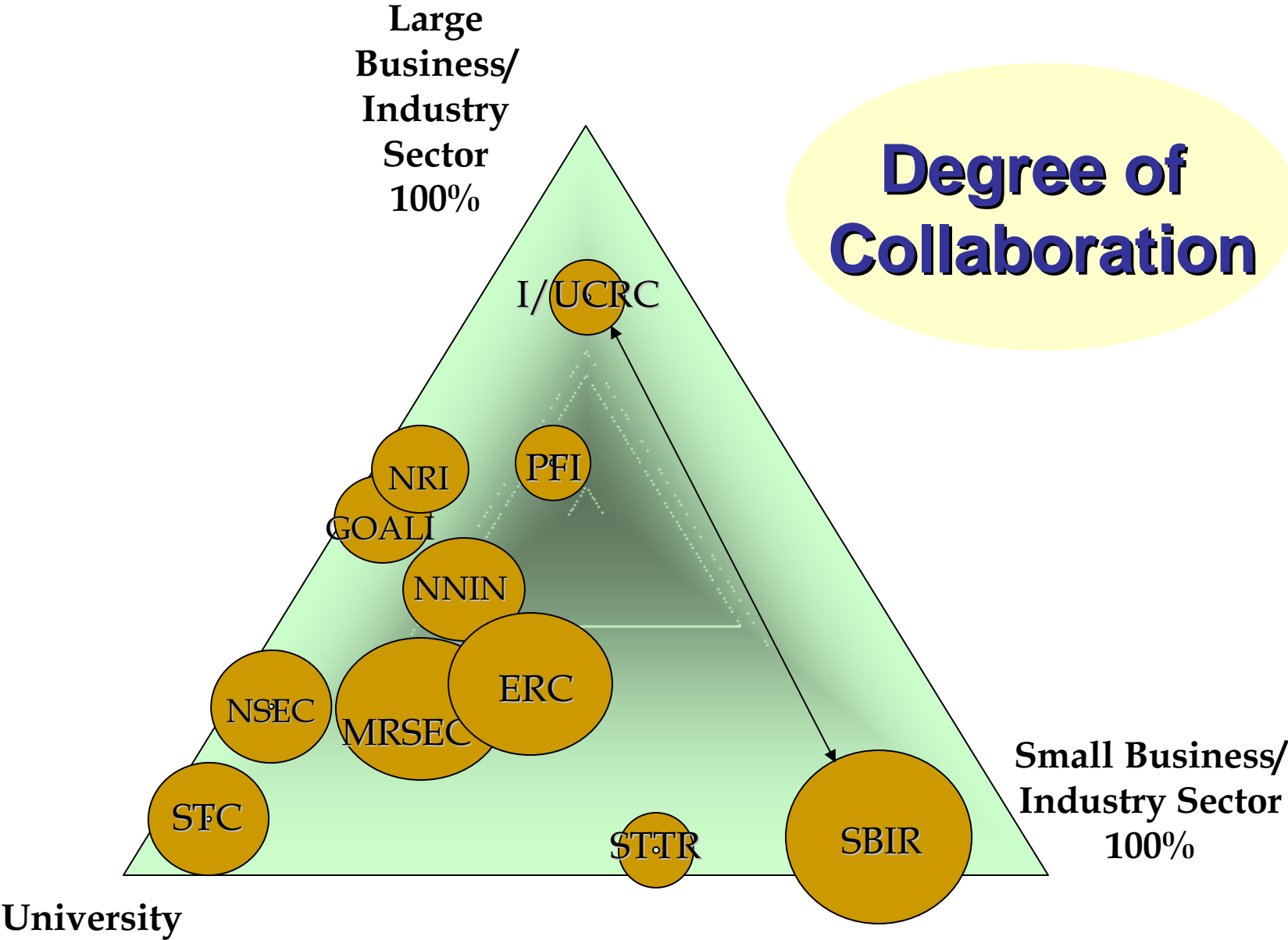
Primarily funded by industry members, with NSF taking a supporting role

University – Industry Priorities



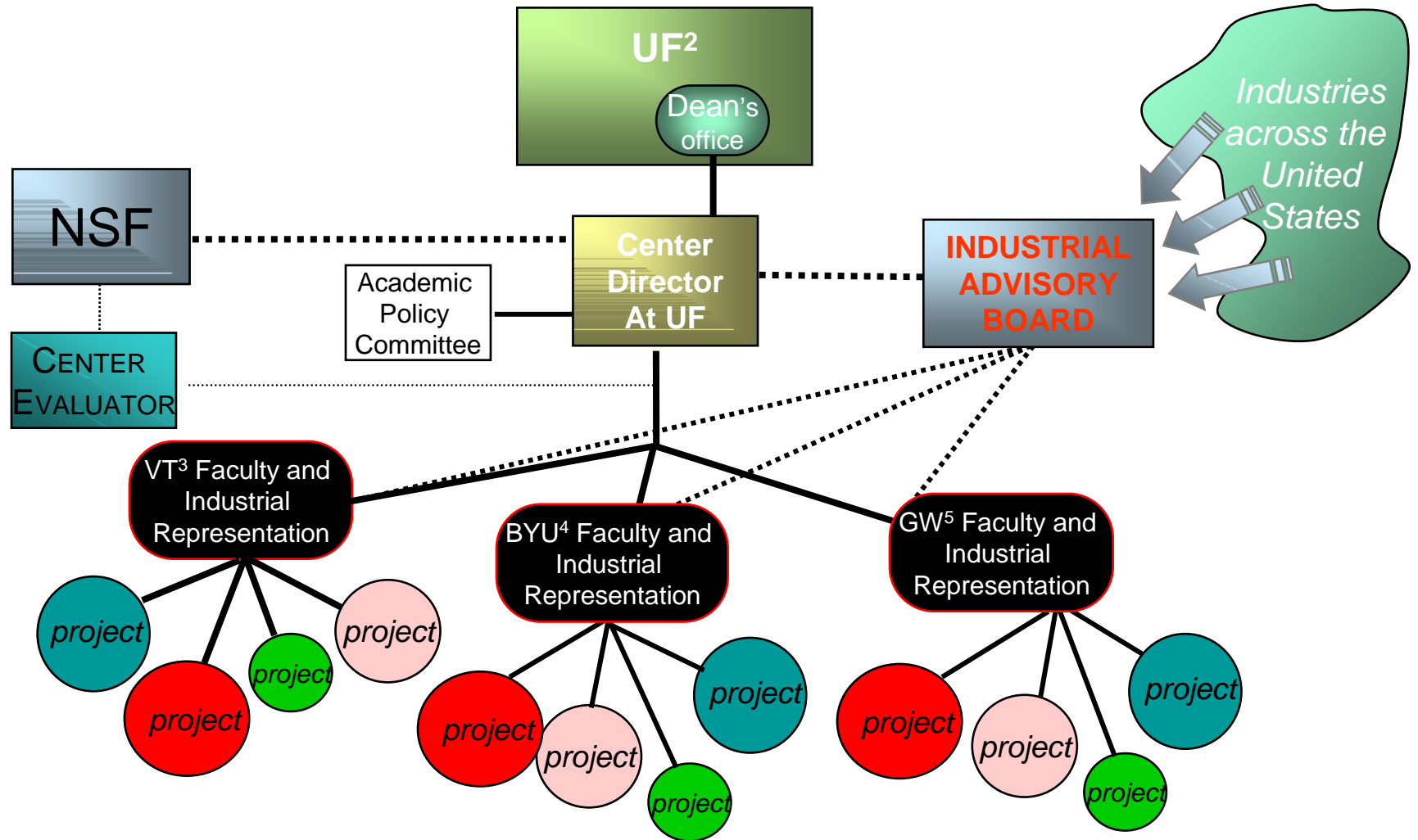
- Mutually beneficial research projects
- Give and take/back and forth
- Long term partnerships!!!

Degree of Collaboration



I/UCRC-SBIR Partnership!

Typical Management Organization¹ Chart



¹Existing Center

²University of Florida, ³Virginia Tech, ⁴Brigham Young, ⁵George Washington

I/UCRC Technologies

- Advanced Electronics
- Advanced Manufacturing
- Advanced Materials
- Biotechnology
- Civil Infrastructure Systems
- Information, Communication, and Computing
- Energy and Environment
- Fabrication and Processing Technology
- Health and Safety
- System Design and Simulation

Industry/University Cooperative Research Centers

as of July 2008

ENG Multi-University Centers

1. Advanced Cutting Tools
2. Advanced Forestry
3. Ceramic and Composite Materials
4. Computational Materials Design
5. Dielectrics
6. Friction STIR Processing
7. Fuel Cells
8. Laser and Plasma for Adv. Mfg.
9. Logistics and Distribution
10. Membranes
11. Minimally Invasive Diagnostics
12. Precision Forming
13. Repair of Building and Bridges
14. Sensors and Actuators
15. Smart Vehicles
16. Water Quality
17. Silicon Solar
18. Particulate and Surfactants
19. Health Organization Transformation
20. Sustainable Iron & Steel
21. Small Satellite Technology
22. Bioenergy

CISE Multi-University Centers

1. Cyber Protection
2. e-Design
3. Experimental Computer Systems
4. Identification
5. Intelligent Maintenance
6. Reconfigurable Computers
7. Search & Rescue Robots
8. Wireless Internet
9. Telecommunications
10. Autonomic Computing

**CISE supports research in all areas of computer
and information science and engineering**

Industry/University Cooperative Research Centers

as of July 2008

Single University Centers

- 1. Advanced Vehicle Electronics**
- 2. Bio-catalysis and Bio-processing of Macromolecules**
- 3. Biomolecular Interaction**
- 4. Electronic Micro-Cooling**
- 5. Child Injury Studies**
- 6. Precision Metrology**
- 7. Advanced Knowledge Enablement (CISE)**

I/UCRC Sites

Industry/University Cooperative Research Center Sites (Sept 2008)



Membership Summary

	Count	Percent
Total memberships	623	100%
Industry: large firms (500 + employees)	405	65%
Industry: small firms (< 500 employees)	111	18%
US Government: Federal	78	12.5%
US Government: State or local	17	2.5%
Non-Profit	10	1.7%
Other	2	.3%

Center Members are in Good Company

3M Corporation	Certain Teed Corporation	General Electric Company	Merck & Co.	Rolls Royce/Allison	U.S. Dept. State
Air Products & Chemicals, Inc.	Champion International	General Motors	Microsoft	Samsung	U.S. Federal Aviation Administration
Alcoa Inc.	Chevron PTC	Gerber Products Co.	Missouri Department of Transportation	Seagate Technologies	U.S. General Services Administration
Allegheny Power	Cisco Systems, Inc.	Gillette Company	MITRE Corporation	Sharp HealthCare	U.S. Jet Propulsion Lab
Amana Refrigeration	Coca-Cola	Gintic	Mitsubishi	Siemens	U.S. Los Alamos National Laboratory
AMD	Consolidated Edison	Goodyear Tire and Rubber Company	Monsanto	Westinghouse Power Corporation	NASA
American Concrete Institute	Corning Cable, Inc	Guardian Industries	Motorola, Inc.	Sperry Rail Service	U.S. National Security Agency
American Electric Power	Critchfield Mechanical	Hewlett-Packard	NAPP Systems	Sprint Corp	U.S. Naval Surface Warfare Center
Amway Corporation	Cummins Engine	Honda	National Semiconductor	Sun Chemicals	U.S. Navy
Analog Devices	Daimler Chrysler Corp.	Honeywell, Inc.	NEC USA, Inc.	TDK Corporation	U.S. Oak Ridge National Laboratory
Arizona Department of Environmental Quality	DePuy, Inc	IBM Corporation	Nokia Corporation	Tecumesh Products Company	U.S. Sandia National Laboratories
Armstrong World Industries	Dow Chemical	Intel Corporation	Nortel, Inc.	Tektronix	U.S. Veterans Administration
AT&T	Dow Corning	Intellisenese Corporation	Northrup Grumman	Tennessee Valley Authority	Union Carbide Corporation
Bayer Corporation	Du Pont	International Concrete Repair Institute	Owens Corning	Teradyne	United Parcel Service
Bell South	Eastman Kodak Co.	International Facility Management Assn	Panasonic Technologies	Texas Instruments	United Technologies
Boeing	Electric Power Research Institute	International Paper Co	Payless Shoesource	Thermo King Corporation	US Borax Company
Bose Corporation	Eli Lilly & Co.	John Deere	Peerless of America	Toshiba Corp.	Verizon Wireless
BP	Estee Lauder Companies	Johnson Controls Inc.	Pfizer	Turtle Wax Company	Westinghouse Corp.
Bristol-Myers Squibb	ExxonMobile Chemical Company	Kraft Foods	Pharmacia & Upjohn	Tyco Electronics	Westvaco
British Telecom	Exempla Healthcare	Lennox International	Phillip Morris Company	U.S. Air Force	Weyerhaeuser Company
California Department of General Services	Fisher Price/Mattel	Libbey Glass Company	Phillips Petroleum	U.S. Army	Whirlpool Corporation
Canon Information Systems	Florida Power & Light	Lockheed Martin Corp.	Pratt & Whitney	U.S. Bureau of Reclamation	Xerox Corporation
Carrier Corporation	Ford Foundation	Lucent Technologies	Progress Group	U.S. DARPA	
Caterpillar, Inc	Ford Motor Company	Manhattan Associates	Qualcomm, Inc	U.S. Dept. of Agriculture	
	Frigidaire Company	Master Builders, Inc	Raytheon/Texas	U.S. Dept. of Energy	
	General Dynamics	MEMS Technology Inc.	Reynolds Metal		
			Rockwell International		



If they can, you can too!!!

Memberships and Agreements

- Membership fee structure
- University recovery of indirect costs (F&A) shall be limited to 10% on the total expenditures of industry center membership fees
- Patent rights held by university, with royalty free, non-exclusive rights to center members
- Companies wishing to exercise rights to a royalty-free license pay for the costs of patent application
- If only one company seeks a license, that COMPANY may obtain an exclusive fee-bearing license
- Government retains “march-in” rights
- Publication delay policy
- Industrial Advisory Board – one representative from each company

Funding Formula

First five years

- Universities receive \$55K-\$80K each year based upon industrial membership level (\$150K - \$300K, or more)
- Lead university receives \$10K for each additional research partner
- Lead administrative institution receives funds for an evaluator

Second five years

- Universities receive \$28K-\$40K each year depending upon industrial support (\$175K - \$350K, or more)
- Lead university receives \$10K for each additional research partner
- NSF provides funds for an evaluator

International I/UCRCs

- To support and encourage participation in global research
- US-based collaborative site will receive \$25K
- No NSF funds to be used by non-US centers

Other Funding

- TIE Projects – Between I/UCRC Centers
- Fundamental Research Supplement
Research Experience for Undergraduate Students (REU)
- Research Experience for Teachers (RET)
- Experimental Program to Stimulate Competitive Research (EPSCoR)
- Federal Government Interagency Exchange of Funds
- Other NSF Programs that Co-fund Centers
 - CBET; CMMI; ECCS; CISE; and GEO
- International Collaboration/Projects
- Supplemental Opportunity for SBIR/STTR Memberships

Feedback from Industry Members

- **Project Overview**
 - Provides scope of work, project deliverables, milestones, budget
- **Level of Interest/Feedback Evaluation**
 - Provides a simple, efficient method to assist with the selection, guidance, and direction of projects in the center

**EXECUTIVE SUMMARY
PROJECT OVERVIEW**

PROJECT NAME: _____ **PROPOSAL:** _____

PROJECT MANAGER: _____

PROGRAM NAME: _____ **NEW** _____

PROGRAM MANAGER _____ **CONT.** _____

DESCRIPTION:

EXPERIMENTAL PLAN:

RELATED WORK ELSEWHERE:

HOW OURS IS DIFFERENT:

RELATED WORK WITHIN THE CENTER:

MILESTONES:

DELIVERABLES:

BUDGET:

POTENTIAL MEMBER COMPANY BENEFITS:

Input/Feedback

The Level of Interest/Feedback Evaluation (LIFE) process is an essential component of the I/UCRC that provides a simple, efficient method to assist with the selection, guidance, and direction of projects in the center.

The LIFE process ensures quality and stimulates continued interest in the program.

LIFE Forms are distributed and collected after each technical presentation during the semi annual meetings.

- Recite comments, questions, and concerns from the transcribed LIFE forms and invite clarification and discussion from the IAB
- What makes the project so “hot?”
- How could we improve this project?
- Encourage real-time project revision

Level Of Interest Feedback Evaluation (LIFE)

To facilitate scientific and technical interaction between Center Faculty and Industrial Member Representative, each company represented is requested to rank their company's level of interest and the research relevancy of each presentation. Please mark an X below to reflect the opinion of your company.

Level of Interest:

_____	Very Interested
_____	Interested
_____	Interested with Change
_____	Not Interested
_____	Abstain

Comments:

I/UCRC Benefits

Industry

- Allows industries to interact with pre-competitive research
- An avenue to investigate a topic which may otherwise not be done
- Allows industries to utilize the resources of a university
- An excellent recruiting tool for building the future of the company
- Royalty-free non-exclusive rights to IP
- Minimal overhead on membership funds (more effective than contracts)
- Increased interaction capabilities (networking) among various members.

University

- Stable funding source for research
- Exposes the academic community to industrial problems
- Establishes a meaningful research focus – industrially relevant
- Provides support for research and students

Win - Win

Thank You