National Science Foundation
WHERE DISCOVERIES BEGIN

National Science Foundation

Industrial Innovation Partnership (IIP) Division

Industry / University Cooperative Research Centers

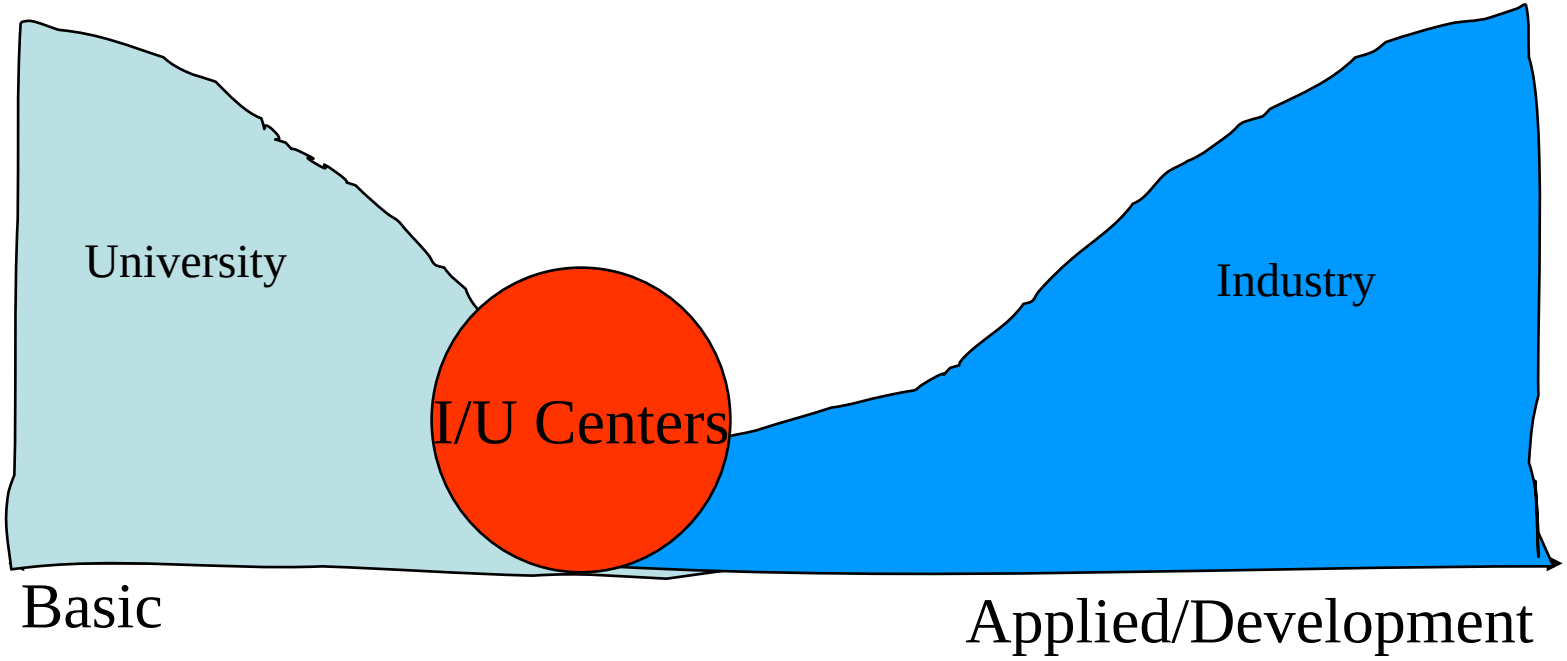
National Science Foundation
WHERE DISCOVERIES BEGIN

I/UCRC Research History in NSF

1972	Presidential Initiatives; e.g. Industrial Affiliates, Industrial R&D Incentive Program.
1976	NSF Small Business Innovation Research Program (SBIR) started.
1978	Industry/University Cooperative Research Centers program started. President's domestic policy review of industrial innovation.
1980	Stevenson-Wydler Innovation Act of 1980 Uniform Federal Patent Policy Act of 1980 Justice Department's Anti Trust Guide
1982	Small Business Innovation Development Act of 1982
1984	Engineering Research Centers program started.
1985	National Cooperative Research Act of 1985
1988	Science and Technology Centers program started.
2006	I/UCRC program has grown to about 40 centers and over 100 universities

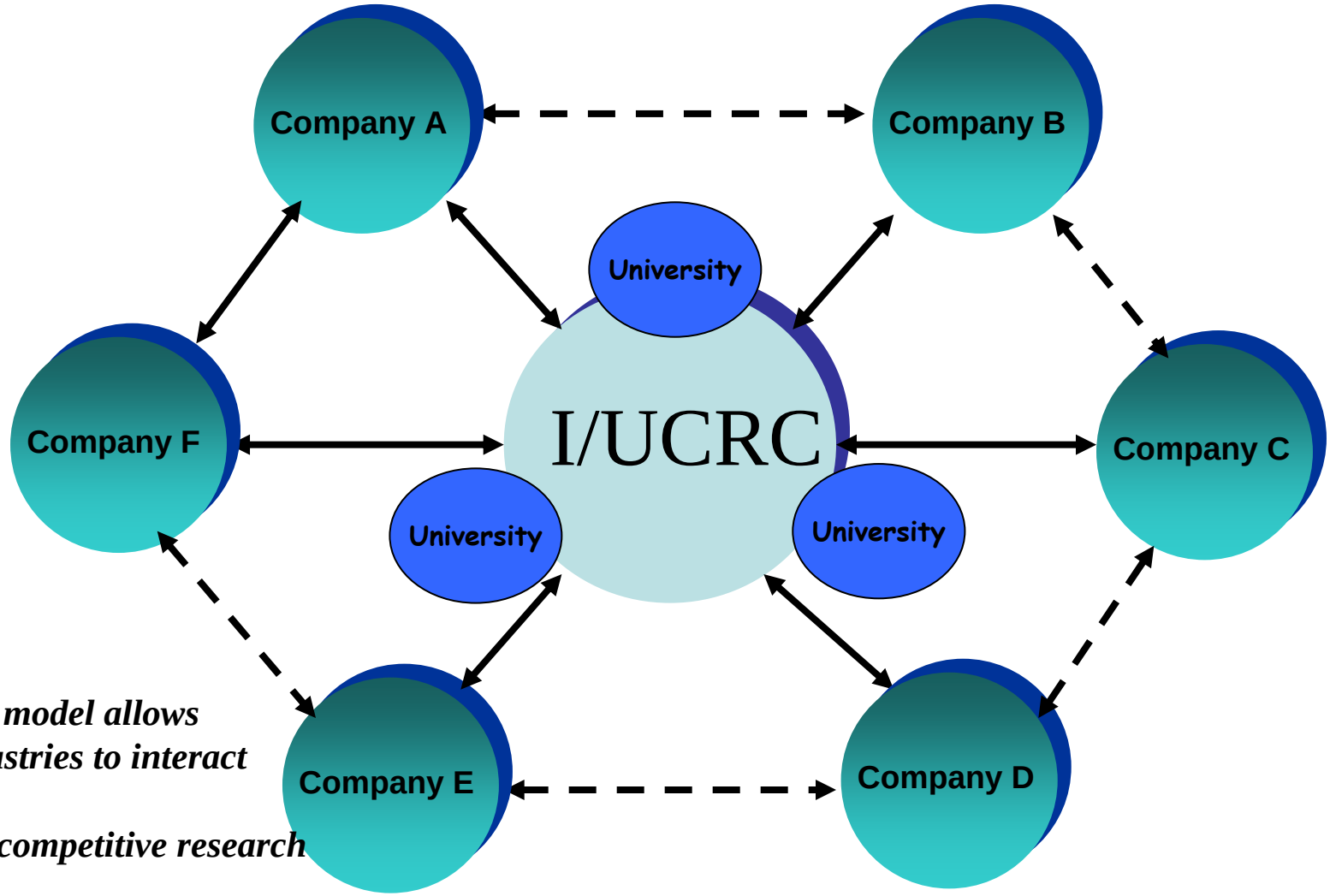
National Science Foundation
WHERE DISCOVERIES BEGIN

Research Interaction



National Science Foundation
WHERE DISCOVERIES BEGIN

The I/UCRC Model



The model allows industries to interact with pre-competitive research

Evolution of Centers

Single discipline centers

Multi-discipline centers

Some researchers from other universities

Multi-university centers

Why? The expanding research base has become necessary to be able to respond to industries broad interests and to be more competitive on a national and international basis.

National Science Foundation
WHERE DISCOVERIES BEGIN

I/UCRC CENTERS - 2007

SINGLE UNIVERSITY CENTERS:

1. Advanced Studies in Novel Surfactants
2. Nondestructive Evaluation
3. Precision Metrology
4. Advanced Vehicle Electronics
5. Bio-catalysis and Bio-processing of Macromolecules
6. Electronic Micro-Cooling
7. Child Injury Studies
8. Bio-instrumentation

Transitioning to Multi-University:

1. Biometrics/Identification
2. Fuel Cell Engineering
3. **Computer Systems****

MULTI-UNIVERSITY CENTERS:

1. Sensors and Actuators (MEMS)
2. Water Quality
3. **Intelligent Maintenance Systems****
4. Membrane Applied Science and Technology
5. Dielectrics
6. Engineering Logistics and Distribution
7. Tree Genetics
8. Telecommunication, Integrated Circuits Systems
9. Multi-phase Flow
10. **Wireless Internet****
11. Plasma Processing
12. **Search and Rescue Robotics****
13. **Cyber Protection****
14. Friction Stir Welding
15. **E-Design Manufacturing****
16. **Computational Material Design****
17. Precision Forming
18. Minimally invasive Diagnostics
19. **High Performance /Reconfigurable Computers****
20. Repair of Bridges & Buildings Composite
21. Ceramic and Composite Materials
22. **Autonomic Computing****
23. Solar Voltaics

**** CISE SUPPORTED**

Funding Formula

First five years

- lead university receives $55K-$80K+$10K for each additional university
- partnering universities receive $55K-$80K each

Second five years

- all universities receive 50%
- lead university receives $10K for each additional university
- additional funds provided for an evaluator

National Science Foundation
WHERE DISCOVERIES BEGIN

Win-Win

For the academic community:

- stable funding source for research
- exposes the academic community to the 'real world'
- establishes a meaningful research focus -- industrially-relevant fundamental
- provides support for research and students

For industry, an **I/UCRC**:

- provides an avenue to investigate a topic which may otherwise not be done
- accomplishes research at a fraction of the cost
- allows an industry to utilize the talents and resources of a university
- vehicle for changing the university culture: multidisciplinary; strategic fundamental
- provides an excellent recruiting tool for building the future of the company

Center Members are in Good Company

Partial List of I/UCRC Members as of 12/31/02

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

Memberships and Agreements

- Membership fee structure.
- Patent rights held by university, with royalty free, non-exclusive rights to center members.
- Publication delay policy.
- University cost share (universities cannot charge more than 10% overhead to members)
- March-in rights for government via PL 98-620.
- Industrial Advisory Board Established.

National Science Foundation
WHERE DISCOVERIES BEGIN

THE I/UCRC SYSTEM

A Research Management Franchise

Operations Protocol
Evaluation Tools
Experience Networking

CUSTOMER SATISFACTION

National Science Foundation
WHERE DISCOVERIES BEGIN

Statistics

- Currently funding 32 centers
- Approximately 118 universities involved
- About 400 organizations participate with over 700 memberships
- NSF support approximately $9.8 million
- Industry support approximately $24 million
- Total support approximately $65 million

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.

Level Of Interest Feedback Evaluation (LIFE)

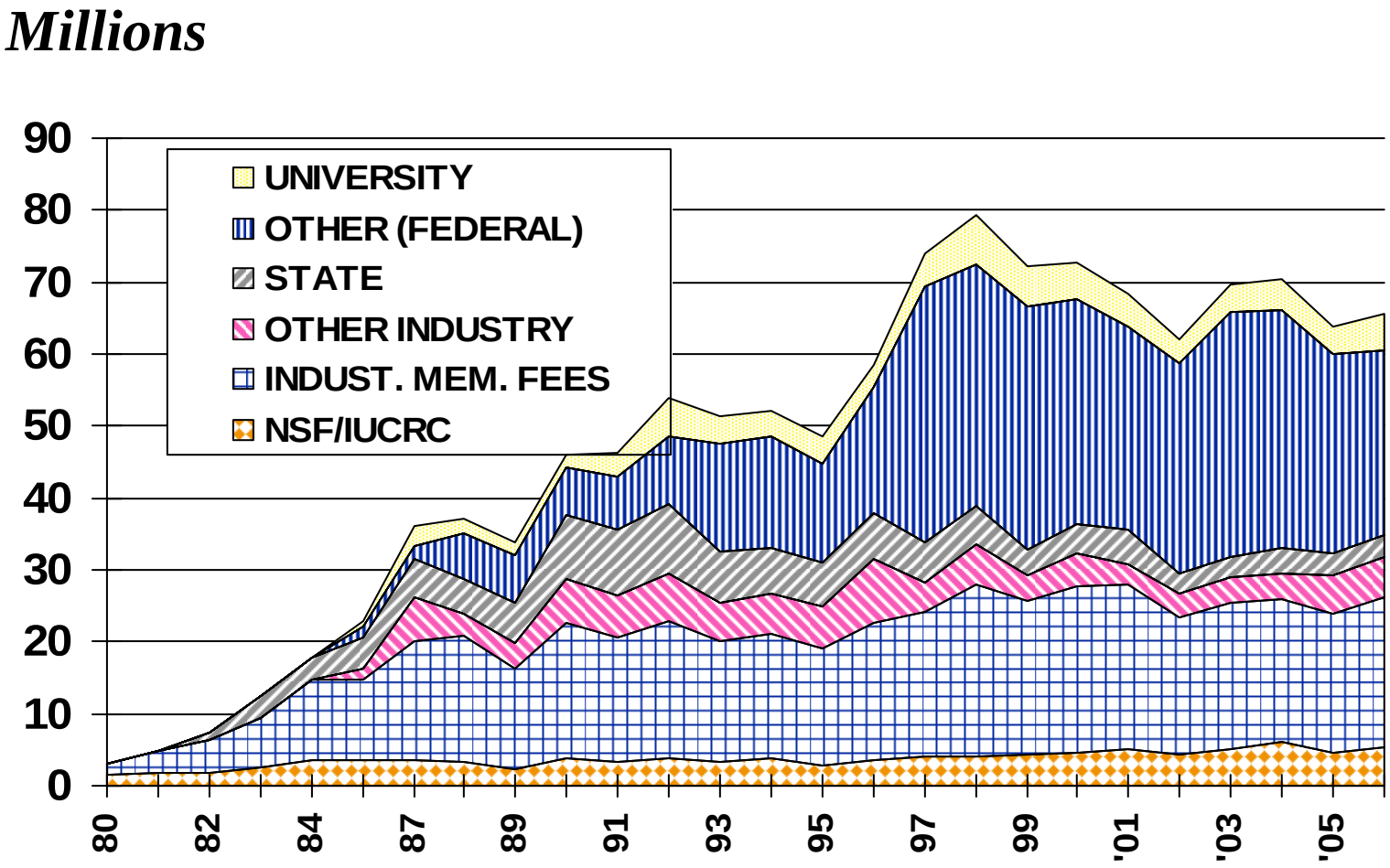
To facilitate scientific and technical interaction between Center Faculty and Industrial Member Representative, each company represented is requested to rank their company's level of interest and the research relevancy of each presentation. Please mark an X below to reflect the opinion of your company.

Level of Interest:

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

National Science Foundation
WHERE DISCOVERIES BEGIN

TOTAL FUNDING BY SOURCE BY YEAR IN DOLLARS



National Science Foundation
WHERE DISCOVERIES BEGIN

New Supplement NSF 07018 SBIR-I/UCRC

- Supplemental Opportunity for SBIR/STTR Memberships in I/UCRCs
- Active NSF SBIR/STTR Phase II/IIB
- 20 to 35 awards a year
- Award supplement equal to membership fee for the I/UCRC center the company is planning to join less $5,000
- SBIR/STTR Grantees Need Letter from I/UCRC Director
- Glenn Larsen will make available the list of eligible SBIR/STTR Phase II/IIB awardees

National Science Foundation
WHERE DISCOVERIES BEGIN

NSF – WASHINGTON STAFF

- Alex Schwarzkopf, Expert – aschwarz@nsf.gov
- Rathindra (Babu) DasGupta, Program Director – rdasgupt@nsf.gov
- Glenn Larsen, System Engineer – glarsen@nsf.gov
- Rita Rodriguez, CISE Liaison – rrodrigu@nsf.gov
- Gregory Misiorek, Program Assistant, gmisiore@nsf.gov
- Victor Hung, UCF – PhD Candidate, vhung@nsf.gov

for more information: http://www.nsf.gov
and: http://www.nsf.gov/eng//iip/iucrc