I/UCRC Annual Directors’ Meeting
January 8, 2009

Welcome to the Industry / University Cooperative Research Centers
Program Update

■ Staff

Rathindra (Babu) DasGupta, Program Director & Prime Contact for I/UCRC – rdasgupt@nsf.gov

Glenn Larsen, Program Director – glarsen@nsf.gov

Gregory Misiorek, Program Assistant, gmisiore@nsf.gov

Rita Rodriguez, Program Director (CISE) – rodrigu@nsf.gov

Alex Schwarzkopf, Contractor - aschwarz@nsf.gov

Don Senich, Senior Advisor – dsenich@nsf.gov
Program Update (cont’d)

- Revised I/UCRC Solicitation (NSF 08-591)
- Revised Fundamental Research Supplement opportunity (NSF 08-068)
- Revised SBIR Membership opportunity (NSF 08-066)
- Mentorship for Post Docs
- In progress – Compendium of Technology Breakthroughs & DVD
- In process - Dynamic Web Based Methods and Tools for Multi-University I/UCRC Management, Data Integration and Decision Support
- Proposed Studies on Economic Impact & I/UCRC Impact on Lives of Center/Site Directors and Students
- Budget impact
- Important Dates
Important Dates

- TIE project requests – by March 01, 2009
- Center Renewals under (NSF 08-591) for anticipated FY 09 start dates – by March 06, 2009
- All requirements for continuing grants funded in FY 09 must be in by June 01, 2009
- Other dates and news are sent thru the ListServe
# Industry/University Cooperative Research Centers

## ENG Multi-University Centers
1. Advanced Forestry
2. Computational Materials Design
3. Dielectrics
4. Friction STIR Processing
5. Fuel Cells
7. Logistics and Distribution
8. Membranes
9. Minimally Invasive Diagnostics
10. Precision Forming
11. Repair of Building and Bridges
12. Smart Vehicles
13. Water Quality
14. Telecommunications
15. Silicon Solar
16. Particulate and Surfactants
17. Advanced Cutting Tools
18. Health Organization & Transformation
19. Sustainable Iron & Steel
20. Small Satellite Technology
21. 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. Autonomic Computing

## 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. Advanced Knowledge Enablement (CISE)

## 36 Centers in FY 2009
Active Centers and Sites By Year

# Centers fairly steady but increasing # of sites since ‘07
Research Sites Scattered
Female Site Directors Increasing
New Sites Awarded to Join Existing IUCRCs (FY 2008)

- Membrane (U. of Colorado)
  - New Jersey Institute of Technology (Planning)

- Connection One (Arizona State)
  - U. of New Mexico (Planning)

- Smart Vehicles Concepts (Ohio State)
  - TAMU

- Wireless Internet (Polytechnic University)
  - Virginia Tech

- High Performance Reconfigurable Computing (U. of Florida)
  - BYU & Virginia Tech

- Engineering Logistics and Distribution (U. of Arkansas)
  - U. of Missouri-Columbia
  - Arizona State

- Experimental Research in Computer Systems (U. of Minnesota)
  - Ohio State U.
IUCRC Planning Grants Awarded for New Centers (FY 2008)

- Space Power & Propulsion*
  - Michigan Tech
- Composites Infrastructure*
  - WVU
- Grid-Connected Advanced Power Electronics Systems*
  - U. of Arkansas
- Sustainable Engineering Systems
  - Santa Clara U.
- Assembly Research
  - U. of Michigan
- THz Application
  - RPI
- Pharmaceutical Manufacturing & Formulation
  - Georgia Tech
- Multicore Productivity Research (CISE)
  - UMBC

*Planning Workshops Completed

Potential for 8 New Centers in the Future!!!
Full Proposals for Centers Under Consideration (FY 2009)

- Advanced Forestry Systems*
- Fuel Cell Center*
- Electromagnetic Compatibility
- Water and Environmental Technology
- Embedded Systems (CISE)
- Net Centrics Software & Systems (CISE)

*Universities Joining Existing Centers

Potential for 4 New Centers in the Future!!!
Planning Grants for Centers Under Consideration (FY 2009)

• Thermal Technologies
• Wood Composites
• Materials Resource Recovery & Recycling
• Energy Harvesting

Potential for 9

New Centers in the Future!!!

• Photovoltaics
• Biophotonic Sensors
• Vehicle Carrier-to-Carrier Energy Exchange
• Advanced Radioactive Material Processing
• Intelligent Storage Systems (CISE)
NSF Budget By Year

Other Programs Also Provide Support

Supplemental Funding
CISE
IUCRC

FISCAL YEAR

$10.2 million
Total Funding by Source by Year in Dollars

“Fed” & “Industrial Membership” $ Play a Key Role

Fiscal Year
Industrial Memberships by Year

**TOTAL NUMBER OF MEMBERSHIPS**

- Membership Holding Between 600 & 700
- ~12% Increase Since FY'07

**AVERAGE NUMBER PER CENTER**

- Average Number Increasing

Fiscal Year
Average Membership Turn Over

Beware! Beware! Potential for Membership to Drop in the Near Future!
IUCRC Evaluation Studies

- Evaluation questionnaires have been revised and shortened
  - Evaluators will attempt to document a “success story”
    - Will need your help

- Technology Breakthroughs

- New Member Recruitment Study (Gray & Rivers)
  - Tested why firms join/not join
  - Data analysis done; report due June

- Web-based LIFE (still supported at UCF)

- Study of Graduated I/UCRCs (Gray & McGowen)
  - Data collection nearing completion 55+ of 74 centers contacted

- Exit Interview Study
  - Phase I (data collection process) complete
  - Phase 2 (interviews and data analysis) underway
Glenn Larsen:

- NSF SOLICITATION
- FUNDAMENTAL RESEARCH SUPPLEMENT
- SBIR/IUCRC MEMBERSHIP
- MENTORING PLAN FOR POST-DOCS
I/UCRC Solicitation: NSF 08-591

- Used for all planning and center proposals as of September 27, 2008
- CISE – full partner
- Cost sharing – max. overhead of 10% on membership fees
- Minimum center memberships
  - Multi-university – 6 members, $300,000 in membership fees
  - Single-university – 8 members, $400,000 in membership fees
- Minimum site requirements
  - $150,000 in membership fees
  - 3 members at $25,000 or more per year
- Important Dates for 2009
  - Letter of Intent: January 2, 2009 and June 26, 2009
  - Planning and Full Proposals: March 06, 2009 and September 25, 2009
Core Funding under NSF 08-591

- **Years 1-5 centers**
  - Single University $80,000 annually
  - Multi-university
    - $80,000 annually when memberships $>= $300,000, or
    - $55,000 annually when memberships $>= $150,000

- **Years 5-10 centers**
  - Single University $40,000 annually
  - Multi-university
    - $40,000 annually when Memberships $>= $350,000, or
    - $28,000 annually when memberships $>= $175,000

- **Plus additional evaluator funding**
  - One site = $9,000; Two sites = $15,000
  - Three sites = $18,000; Four or more = $21,000
International I/UCRC Supplements

- US-based center is limited to one supplement per country
- Supplement request must include:
  - Communications plan for foreign research site interaction
  - Description of the infrastructure to enable collaboration
  - Formal agreement between collaborative sites addressing IP issues that replicate the U.S. based membership agreement
- Funding: U.S.-based site receives $25,000 that includes cost for evaluator international travel
- No NSF funds to non-U.S. Centers
Fundamental Research Supplements
Program for I/UCRCs (NSF 08-068)

- Deadline: February 4, 2009 by 5 PM
- Award amounts
  - Non collaborative & single university $75,000 max
  - Collaborative $150,000 max for 2 or more sites
  - In addition to the above, NSF will match contributions from external non-academic or non-federal government organizations up to $75,000 (List and justify the non-academic contribution on line M of the budget).
- One integrated supplement per center.
- Must be submitted as a supplement request.
2008 Fundamental Research Awards (ENG)

- Awards went to:
  - Computational Materials Design – Ga Tech & Penn State
  - Fuel Cells - U. of South Carolina.
  - Non Destructive Evaluation – Iowa State
  - High Performance Cooling Technology – Purdue University
  - Silicon Solar – NCSU & Ga Tech
  - CChIPS & CAC – Children’s Hospital of Philadelphia & U. of Florida
  - Lasers & Plasma – U. of Virginia
2008 Fundamental Research Awards (CISE)

Awards went to:

- Autonomic Computing – U. of FL, Rutgers & U. of Arizona
- Wireless Internet - U. of Virginia & Auburn U.
- Connection One – Arizona State & Ohio State
- Engineering Logistics & Distribution – Oklahoma State & U. of Louisville
- Minimally Invasive Medical Technology – U. of CN & U. of MN
SBIR/IUCRC Memberships (NSF 08-066)

- Proposal window: October 1, 2008 to May 31, 2009
- SBIR/STTRs can obtain a full I/UCRC membership
- NSF SBIR/STTRs can join multiple I/UCRCs
- Centers can accept multiple NSF SBIR/STTRs
- Endorsement letter from site director is required. SBIR projects must go if company votes all their “chips” on one project.

SBIR/STTRs apply for a supplement when:
- They have an active NSF SBIR/STTR Phase II & IIB award
- Companies may join an active or graduated I/UCRC (within 5 years of the supplement request) that remain committed to I/UCRC principles

I/UCRCs apply for a supplement when:
- The I/UCRC has a current center award, AND
- When the NSF SBIR/STTR Phase II & IIB is graduated (within 5 years of the supplement request).
SBIR/IUCRC Memberships (cont’d)

- Supplements for one or two year memberships are considered
- Memberships:
  - SBIR pays $5,000 per year for centers membership at $50,000 or less, or
  - 10 percent of the I/UCRC membership fee for centers with membership fees greater than $50,000
  - NSF funds the balance. NSF dollars cannot be use in computing center membership fee certifications.
- For eligible I/UCRCs see list at: http://www.nsf.gov/eng/iip/iucrc/directory/index.jsp
- For SBIR/STTR members (see search instructions within NSF 08-066.
- FY 2007 Funding
  - 23 SBIR/STTR memberships in
  - 17 I/UCRCs. One I/UCRC had four SBIR/STTRs, three I/UCRCs had two SBIR/STTRs.
Mentoring Plan for Post-Docs

- Required for all of NSF
- When: Effective January 5, 2009
- Proposals affected: ALL submitted proposals requesting support for postdoctoral researchers.
- Requirement: Must include, as a separate section within the project description, a description of the mentoring activities that will be provided for post-docs.
  - Mentoring activities might include career counseling;
  - training in preparation of grant proposals, publications and presentations;
  - guidance on ways to improve teaching and mentoring skills;
  - guidance on how to effectively collaborate with researchers from diverse backgrounds and disciplinary areas; and
  - training in responsible professional practices.
- Non-compliance: Proposals that do not include a separate section on mentoring activities within the Project Description will be returned without review.
Alex Schwarzkopf Presentation

Outline

- Transition
- Contractor
- Program Growth
- CISE
- We WON our Battle
CISE Involvement in I/UCRC

Rita V. Rodriguez
Program Director
NSF/CISE/CNS
rrodrigu@nsf.gov
January 09, 2009
CISE: IUCRC PI Meeting

Other Programs handled by this PD:

- **STC**: Science and Technology Centers
- **MRI**: Major Research Instrumentation
- **Some Special Projects**
- **CAREER**

Suggest you take appropriate advantages of these
IUCRC could either
- Develop from STCs or
- Move towards an STC upon completion of entitlement period
- Prepare its Junior faculty by appropriately mentoring towards a CAREER
- Envision Special Projects leading to potentially successful and prosperous marriages
CISE: IUCRC PI Meeting

- PD founded and Co-Chairs internationally at least once a year the Workshop on Spatio-Temporal Issues

- PD believes international involvement in many research areas can be advantageous for our centers

- Take advantage of REUs and RETs

- Try competing for REU and RET sites
CISE: IUCRC PI Meeting

Rita V. Rodriguez

- rrodrigu@nsf.gov
- 703-292-5188 office
- 703-319-2026 home
- 703-216-5639 cell
Important Dates

- TIE project requests – by March 01, 2009
- Center Renewals under (NSF 08-591) for anticipated FY 09 start dates – by March 06, 2009
- All requirements for continuing grants funded in FY 09 must be in by June 01, 2009
- Other dates and news are sent thru the ListServe
THANK YOU

QUESTIONS???
Average NSF IUCRC Funding per Center

Fiscal Year

Note: Based on total NSF/IUCRC Budget
Average NSF IUCRC Funding Per Site

Fiscal Year

Note: Based on total NSF/IUCRC Budget
Average Number of Researchers per Center by Year

FACULTY & POST DOC RESEARCHERS

Fiscal Year

Note: As of 2003, NSF changed the label of “non-faculty” researchers to “post doc” researchers
Average Number of Intellectual Property Events