

I/UCRC for Embedded Systems
(CES)

IAB Meeting

February 2-3, 2015

I/UCRC Program

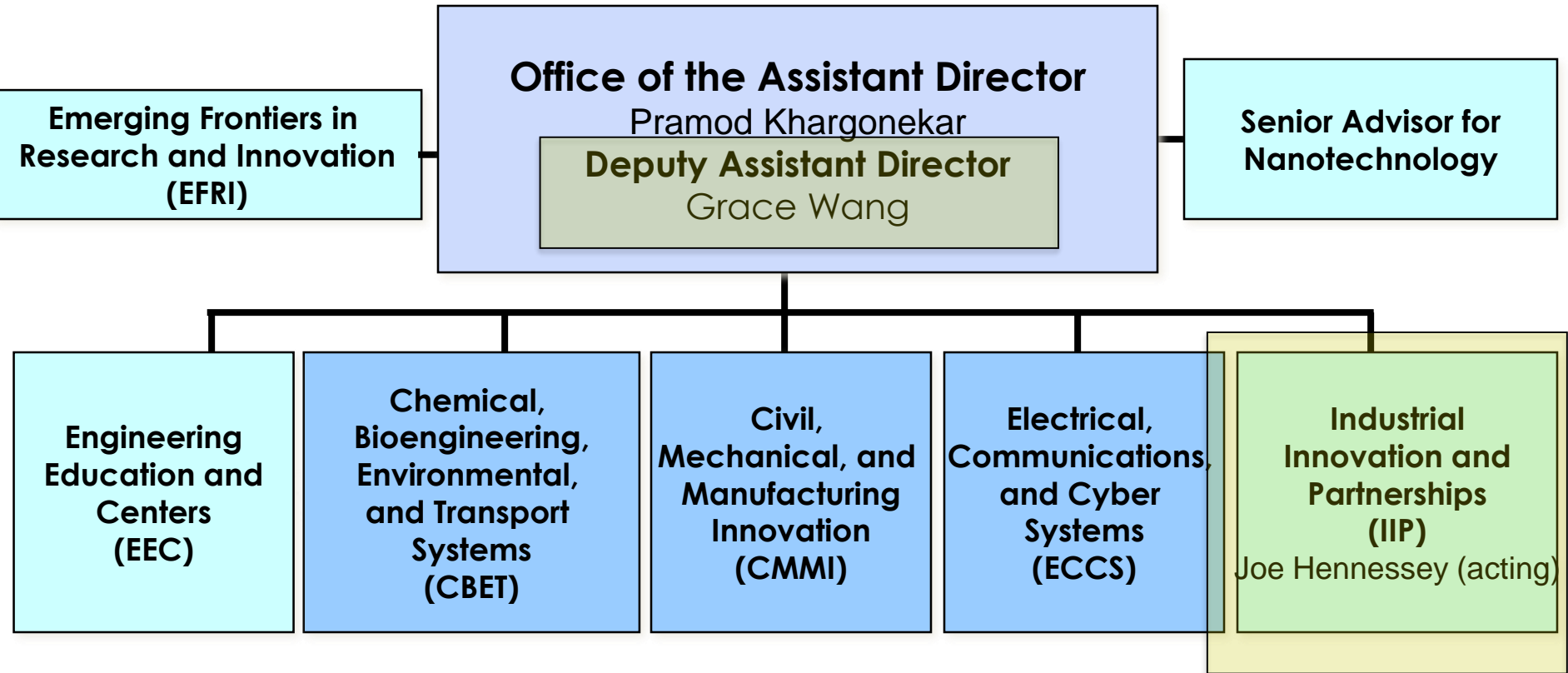
Welcome to the Industry / University
Cooperative Research Centers

The I/UCRC Program – an update





ENG Organization





Industrial Innovation and Partnerships(IIP)

Division Director
Joe Hennessey (acting)

Senior Advisor, OSDBU
Donald Senich

Academic Cluster
Babu DasGupta

Innovation Corps (I-Corps)
Babu DasGupta

Grant Opportunities for Academic Liaison with Industry (GOALI)
Donald Senich

Industry/University Cooperative Research Centers (I/UCRC)
R. Montelli S. Priya B. Johnson

Partnerships for Innovation: Accelerating Innovation Research (PFI-AIR)
Barbara Kenny

Partnerships for Innovation: Building Innovation Capacity (PFI-BIC) Sara Nerlove

Assessment, Diversity, & Program Support
Gracie Narcho

Program Support Manager
Mary Konjevoda

Operations Specialist
Greg Misiorek

Analyst
Lindsay D'Ambrosio

Program Specialist
Alexandria Hale

Program Specialist
Caroline Hayer

Program Specialist
vacant

Contract Staff

SBIR/STTR Program
Joe Hennessey

Advanced Material & Instrumentation (MI)
Ben Schrag

Advanced Material & Nanotechnology (MN)
Rajesh Mehta

Biological Technologies (BC)
Ruth Shuman

Chemical and Environmental Technologies (CT)
Prakash Balan

Education Applications and Technologies(EA)
Glenn Larsen

Electronic Hardware, Robotics and Wireless Technologies (EW)
Murali Nair

Information and Communication Technologies (IC)
Peter Atherton

Semiconductors (S) & Photonic (PH) Devices and Materials
Steven Konsek

Smart Health (SH) and Biomedical (BM) Technologies
Jesus Soriano

Experts/Special Topics
George Vermont



The Industry/University Cooperative Research Centers (I/UCRC) Program

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



40 years of fostering long-term partnerships among industry and academe based on shared value





I/UCRC Fast Facts – FY14 Snapshot

52 ENG Funded Centers 25 CISE Funded Centers



6 International Sites:
Belgium, China,
Finland, Germany,
India, Russia

Program Funding

- \$20M in Program Funding (ENG, CISE)
- 6:1 Leveraging of NSF funds

Students

- Over 2000 students engaged
- 649 graduated in 2014, nearly 30% hired by members

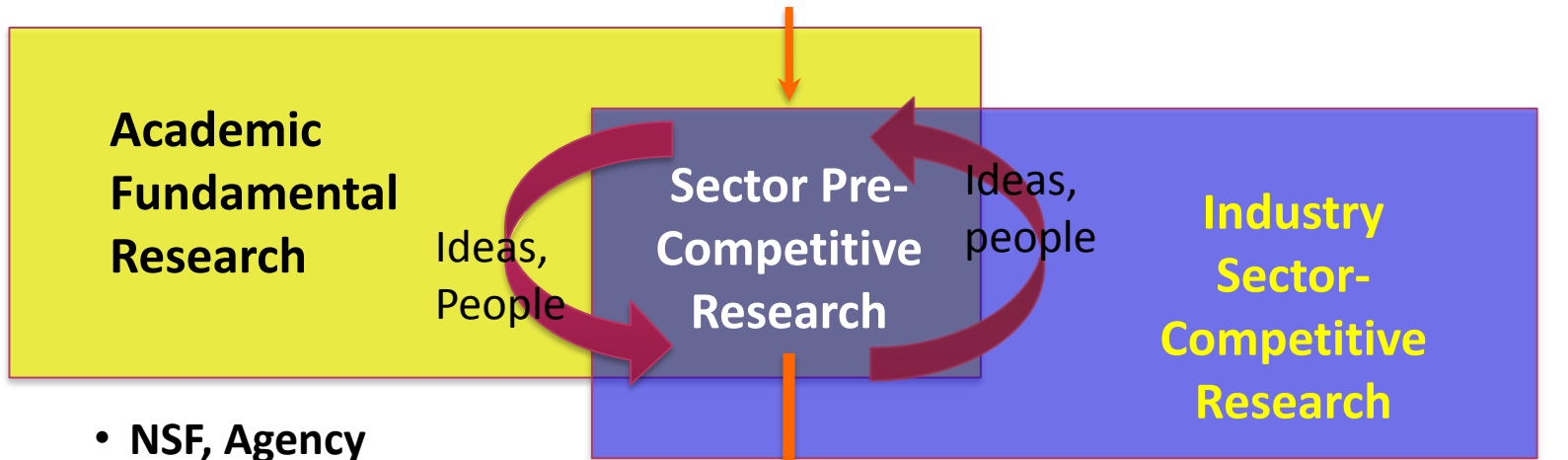
Sustainability

- Over 40 Graduated I/UCRCs remain in operation true to model



The I/UCRC Model: Linking Industry to Fundamental Research

I-U Cooperative Research Domain



- NSF, Agency Foundation, Funded

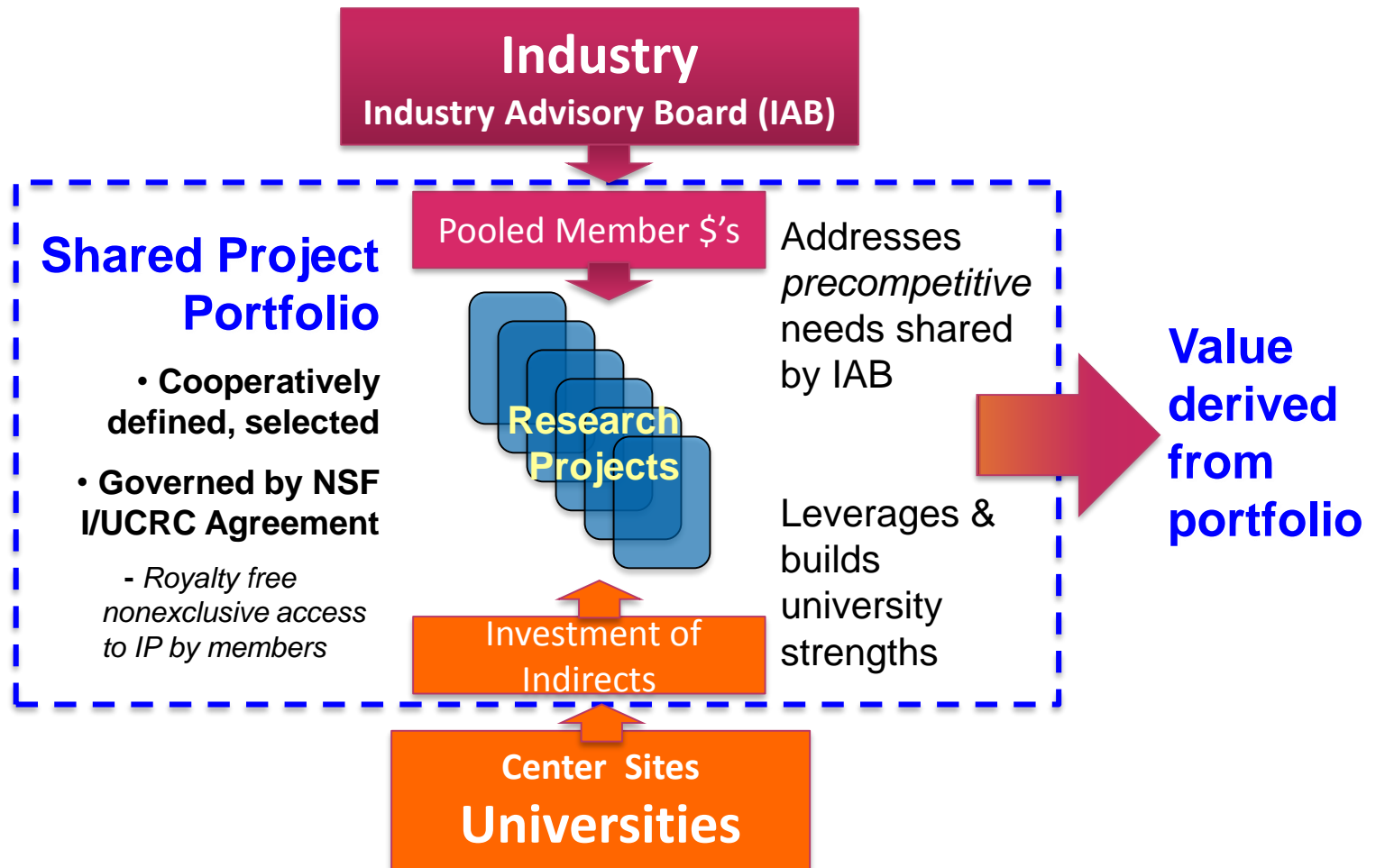
I/UCRC Domain

- User-Inspired Fundamental Research
- Jointly Funded
- Non-exclusive IP access
- Trusted relationships based on delivery of value

- Contract Research
- Master Agreements



I/UCRC Nucleus: A Cooperatively Defined, Funded & Shared Research Portfolio



Requires trust be built in the model, and between all partners in the center.

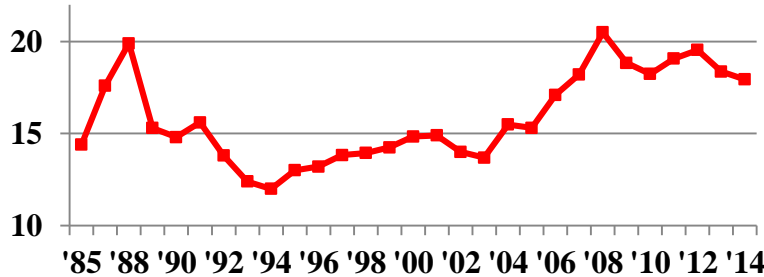


I/UCRCs Fast Facts (FY14)

Members:

18 on Average per Center

Average Number of Memberships

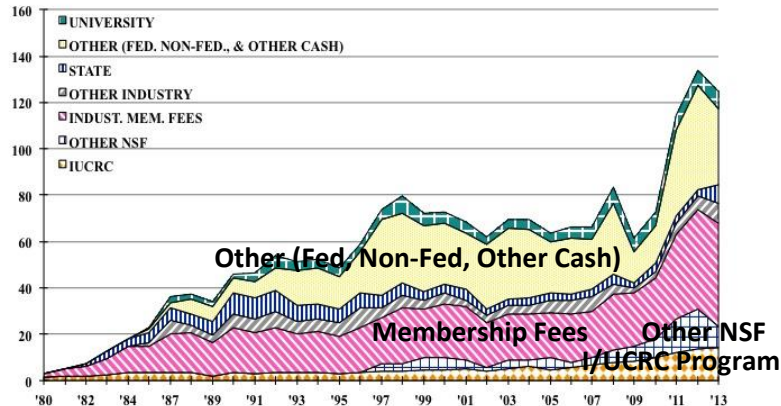


Centers Nationally:

- 77 Centers with 216 Sites
- **Over 1100 Members:** 60% Large Business, 20% SB, 10% Federal Members, ~10% (State + Others)

Total Funding:

6:1 Leveraging of Program funds
47:1 Leveraging of each membership



Average Number of faculty and researcher involved per center: 18

What is WindSTAR's strategy to get to these numbers?



Additional Funding Opportunities for I/UCRCs

National Science Foundation

WHERE DISCOVERIES BEGIN

Base Funding

Supplements

~~Collaborative Research Between I/UCRCs (CORBI)~~

I/UCRC Innovation Fellows (IIF)

Research Experience for Undergraduates (REU)

Research Experience for Teachers (RET)

Veterans Research Supplement (VRS)

Innovation Managing Director (IMD)

SBIR / STTR Phase II (memberships)

Fundamental Research Program (FRP)

Federal Government Interagency Exchange of Funds (IAA)/
Military Interdepartmental Purchase Requests (MIPR)



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I/UCRC Clusters for Grand Challenges

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New!



Dear Colleague Letter: I/UCRC Clusters for Grand Challenges

Two or more existing
I/UCRCs

leverage each other's expertise, research results, resources and existing networks and partnerships to establish a **cross-center cluster**

and **team up** with Engineering Research Centers (ERCs), Science and Technology Centers (STCs), industrial collaborators and additional academic

to tackle a **cross-disciplinary, cross-sector portfolio of research projects that hold the potential to catalyze technology breakthroughs and advance national priorities.**

The active participation of industry in the design and implementation of cluster research efforts is expected.



Dear Colleague Letter: I/UCRC Clusters for Grand Challenges

Potential precompetitive research topics that are of particular interest include but are not limited to:

- **Advanced sensing, controls, and platforms for manufacturing**
- **Visualization, informatics & digital manufacturing**
- **Advanced materials manufacturing (AMM)**

I/UCRC clusters addressing **any precompetitive research areas identified among the science and technology priorities for the nation** are welcome and will be fully considered.



Dear Colleague Letter: I/UCRC Clusters for Grand Challenges

Budget:

\$750k per year for a cluster with up to \$150k per year per I/UCRC

Any non-I/UCRC research partner(s) either will be budgeted for a subaward above and beyond the \$150,000 per year per I/UCRC or will bring their own funding to the partnership.

A minimum of one co-PI or co-advisor from an industry partner is required; however, NSF funds cannot be used by the industrial research partners.

Duration: up to two years

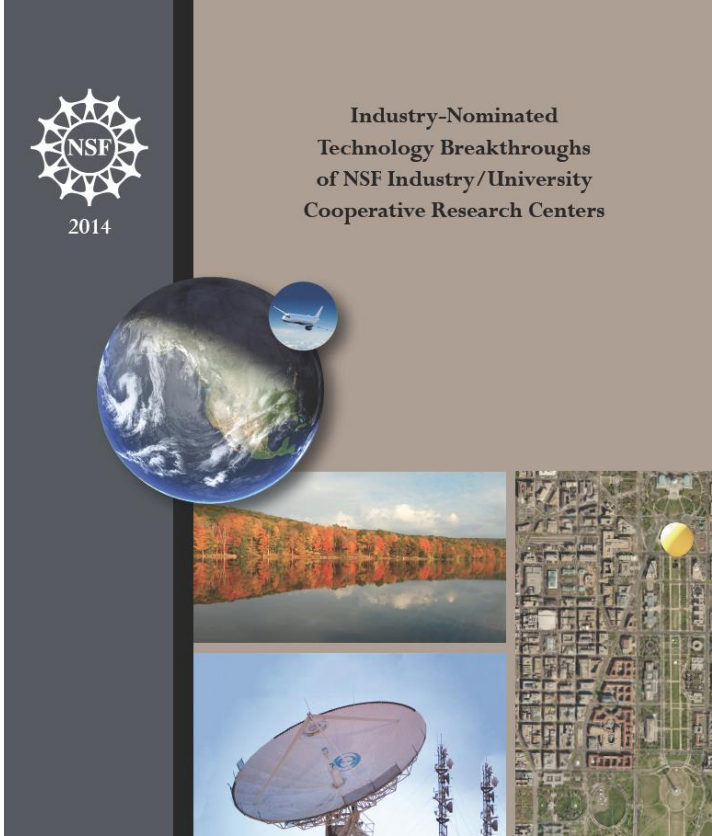
Clusters can request funding for a preparatory conference (up to 35k per cluster)

Eligibility: I/UCRCs meeting minimum membership requirements for three years in a row (and with one in kind only)

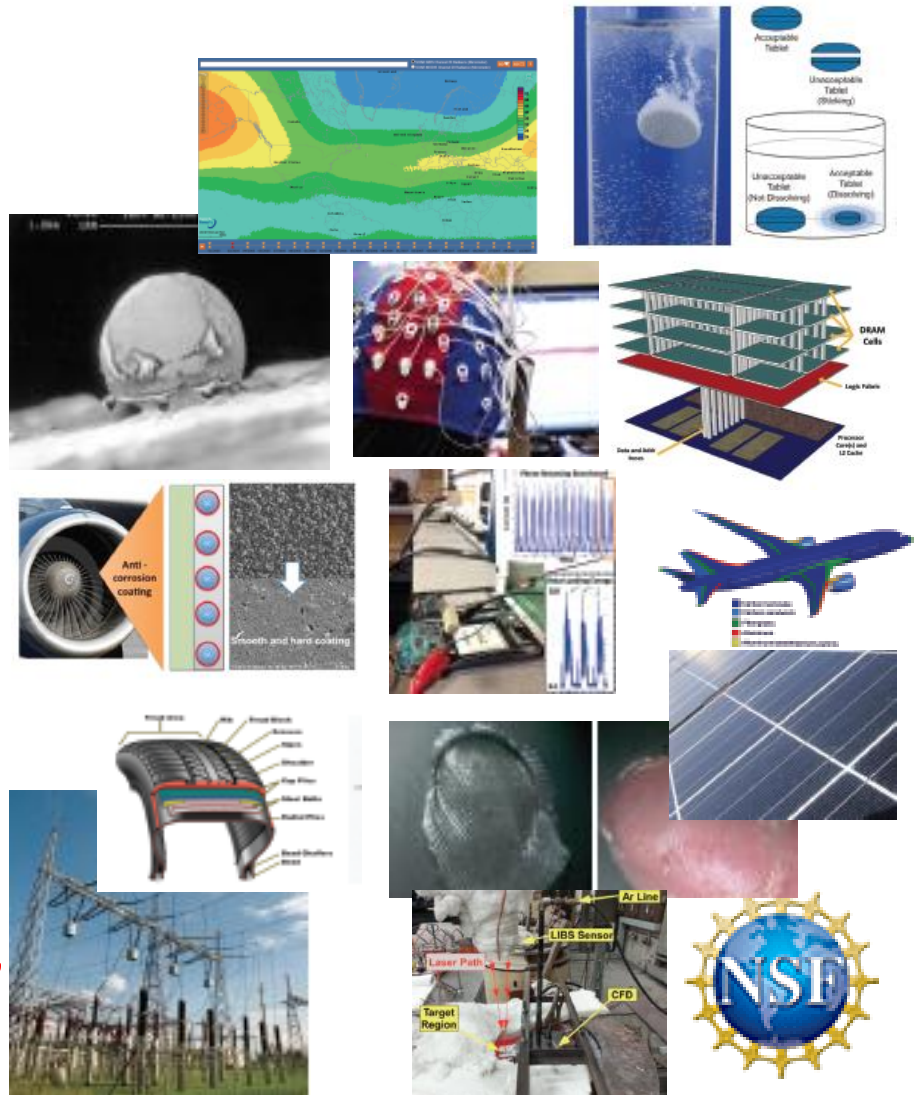


2014 Compendium of Industry-Nominated I/UCRC Technology Breakthroughs

What will be CEC's Impact Stories for 2016?



Over 1400 Publications in '13, 248 co-authored w/Members



National Science Foundation I/UCRC Contacts

Program phone: (703) 292-8383 Program email: iucrc@nsf.gov

Raffaella Montelli, Program Director, rmontell@nsf.gov

Shashank Priya, Program Director, spriya@nsf.gov (returning to home instit.

Barry Johnson, Program Director

Rita Rodriguez, CISE Program Director, rrodrigu@nsf.gov

Alex Schwarzkopf, Consultant, aschwarz@nsf.gov

Alex Hale, MIPR/IAA Program Specialist, ahale@nsf.gov

Kevin Simmons, IAB Meetings Scheduling Assistant, ksimmons@nsf.gov

Craig Scott, NSF Evaluator for CES, scottcs@u.washington.edu

IUCRC Video: http://www.nsf.gov/eng/iip/iucrc/iucrc_video.jsp

