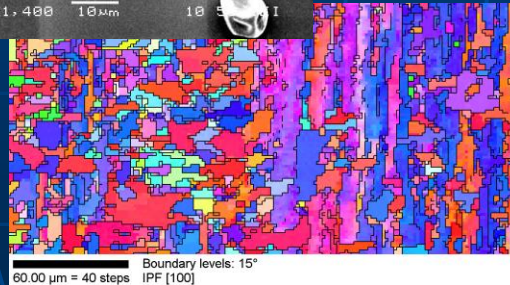
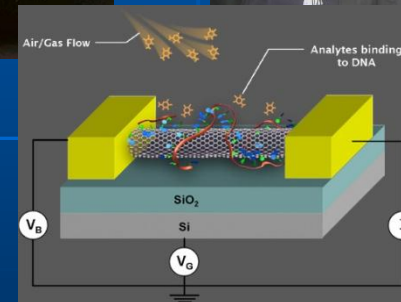
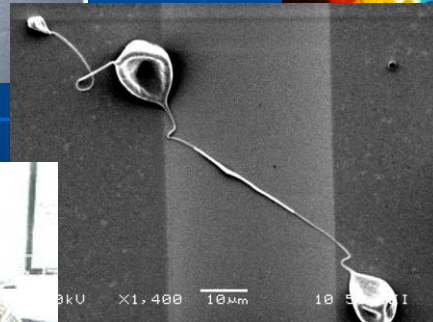
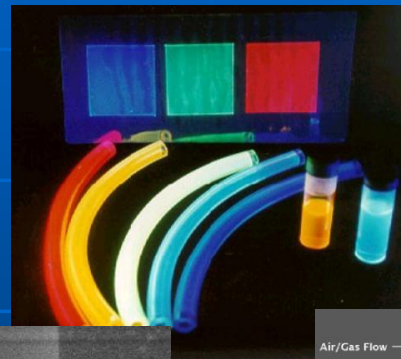




Partnership for Research and Education in Materials

PREM PI Meeting -- April 26, 2010

Sean L. Jones, Tom Rieker, and Bill Brittain (on detail to CHE)



...broaden participation in materials research and education by stimulating the development of *long-term, collaborative partnerships between minority serving institutions and DMR-supported groups, centers and facilities...*

- Competitive award to minority serving institutions
 - Interdisciplinary materials research teams at both institutions
 - Multi-level education programs to build a pipeline of students interested in materials science
 - Partnership based on intellectual connections
- Competitions in 2004, 2006, and 2009
- 14 Awards of ~ 500k/year for 5 years
 - Co-funding from CREST, EPSCoR, Office of Multidisciplinary Activities, and the Division of Mathematical Sciences

PREM Expectations

- Broaden participation in materials research
- Create new opportunities for students at minority-serving institutions (new programs, access to new mentors, and access to instrumentation)
- Integrated research and education programs (new degree programs)
- Enhance capacity and infrastructure (equipment, new labs, etc.)
- Impact both institutions (ideas and people)
- Close interactions with partner institution and NSF Program Managers

PREM Competitions

2004

- Strong response; 30 proposals
- Approximately \$11M budget
- 4 awards for 5 years ranging from \$490k to 510k/yr
 - Co-funding from the Office of Multidisciplinary Activities (OMA)

2006

- 22 proposals
 - stronger proposals
- Approximately \$15M budget
- 6 awards for 5 years ranging from \$410k to 560k/yr
 - Co-funding from OMA, EPSCoR, CREST, and DMS

2009 (NSF 09-518)

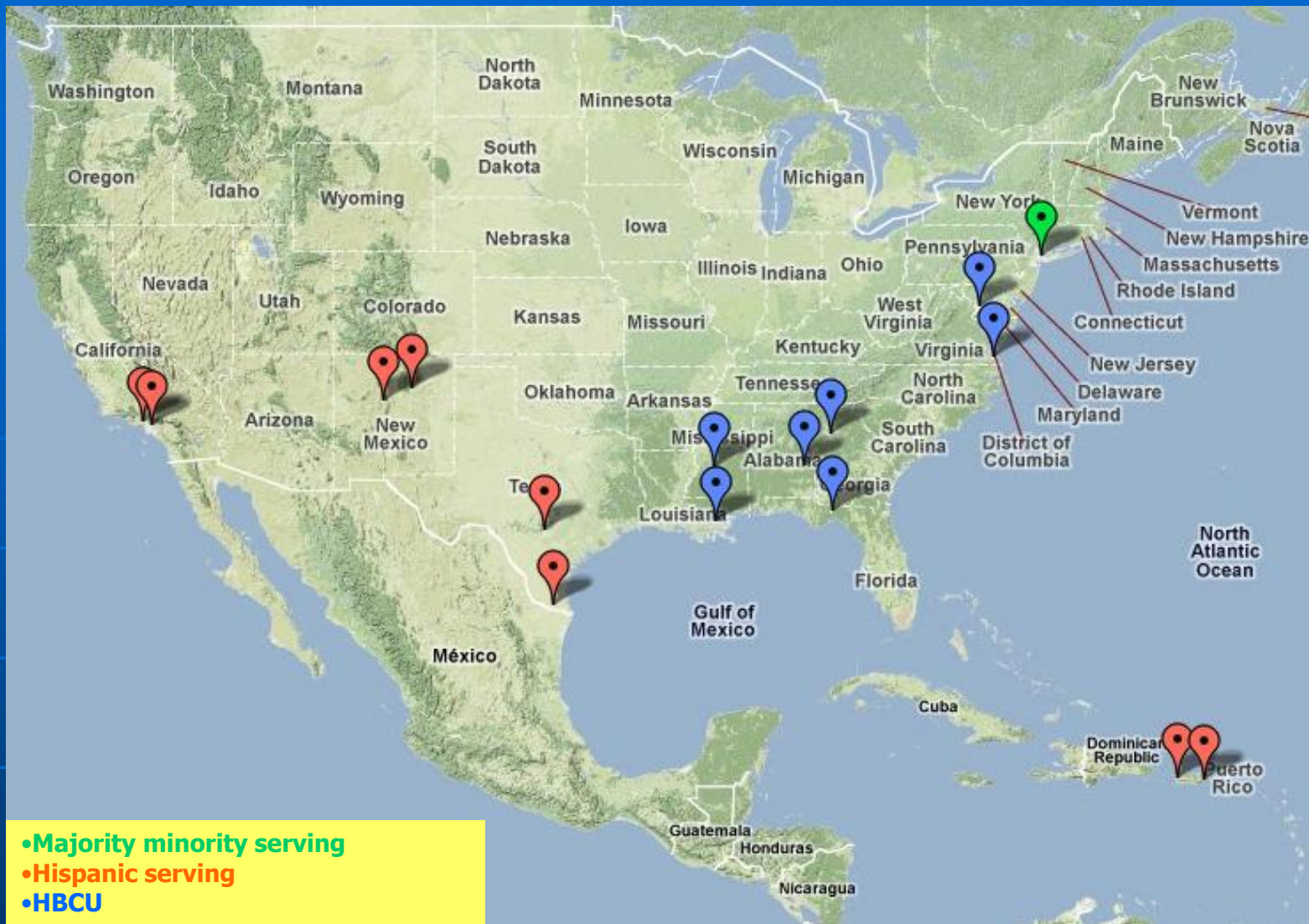
- 25 proposals
 - Very strong proposals
 - Approximately \$23.65M (\$9.6M ARRA) budget
 - 8 awards (3 ARRA) for 5 years ranging from \$ 540k to 650k/yr
 - Co-funding from OMA and CREST
- First competition with PREM re-competitions

Current PREM Sites

Institution	Partner(s)	Topic
California State University - Northridge	Princeton University MRSEC	Computational materials science
Howard University	Johns Hopkins University MRSEC, Prince Georges Community College	Transport in nanowires
Jackson State University	University of California at Santa Barbara MRSEC	Organic electronics and sensors
Norfolk State University	Cornell University MRSEC Purdue University	Metamaterials and surface plasmons
Tuskegee University	Cornell University MRSEC	Polymer nanocomposites
University of New Mexico	Harvard University MRSEC	Biomaterials
City College of New York	Chicago MRSEC	Nonequilibrium dynamics, soft materials
Clark Atlanta University	GA Tech MRSEC	Graphene
New Mexico Highlands University	U Washington STC	Biophotonics, solar cells
University of Puerto Rico - Humacao	U Penn MRSEC	Nanoelectronics, photonics, biosensors
University of Puerto Rico - Mayaguez	U Wisconsin NSEC and MRSEC	Biomaterials, soft mats, nanoporous mats for catalysis
University of Texas - Pan American	Minnesota MRSEC	Organic photovoltaics, nanoparticles for energy storage, polymers
University of Texas – San Antonio	Northwestern MRSEC	Biomaterials
Xavier University of Louisiana	NYU MRSEC	Batteries, biomaterials, organic crystals

Class of 2006

Class of 2009



- Sites where PREMs have been established.
- Good mix between Hispanic Serving Institutions and HBCUs.
- Good mix between PUI and Institutions with graduate programs.
- Tribal Colleges, Women's Colleges, and institutions serving students with disabilities are target opportunities.

Demographics

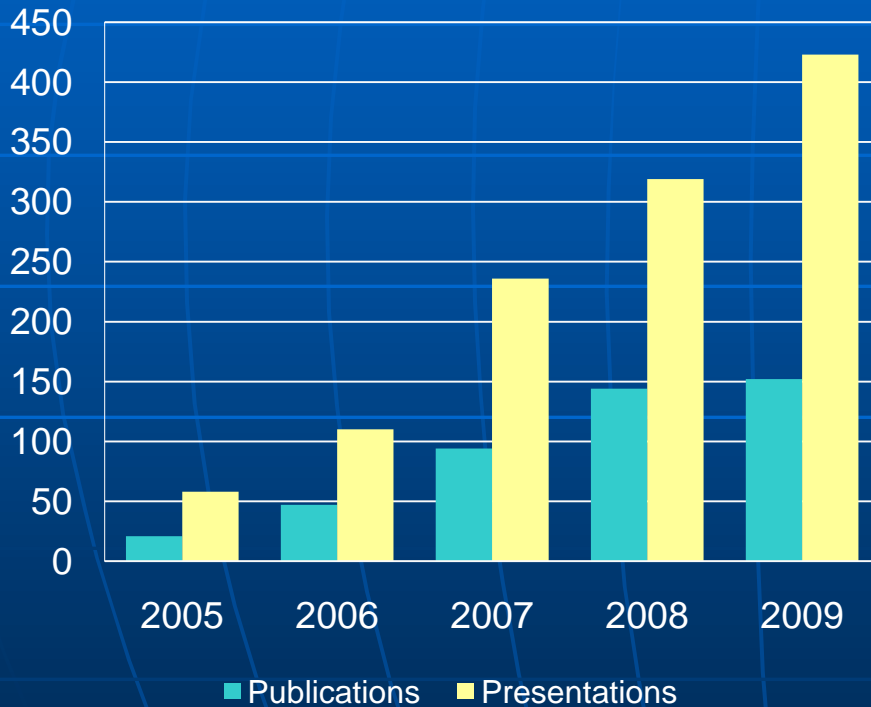
	Total (affiliated)	Women %	Under-represented minorities %
Faculty at MSI	87 (21)	34	52
Faculty at Partner Inst.	62 (56)	18	8
Post-docs	21 (1)	33	19
Graduate students	117 (16)	48	72
Undergraduates	158(27)	54	87
K-12	53 (16)	40	66

* Total = support from NSF PREM + affiliated (non-PREM support)

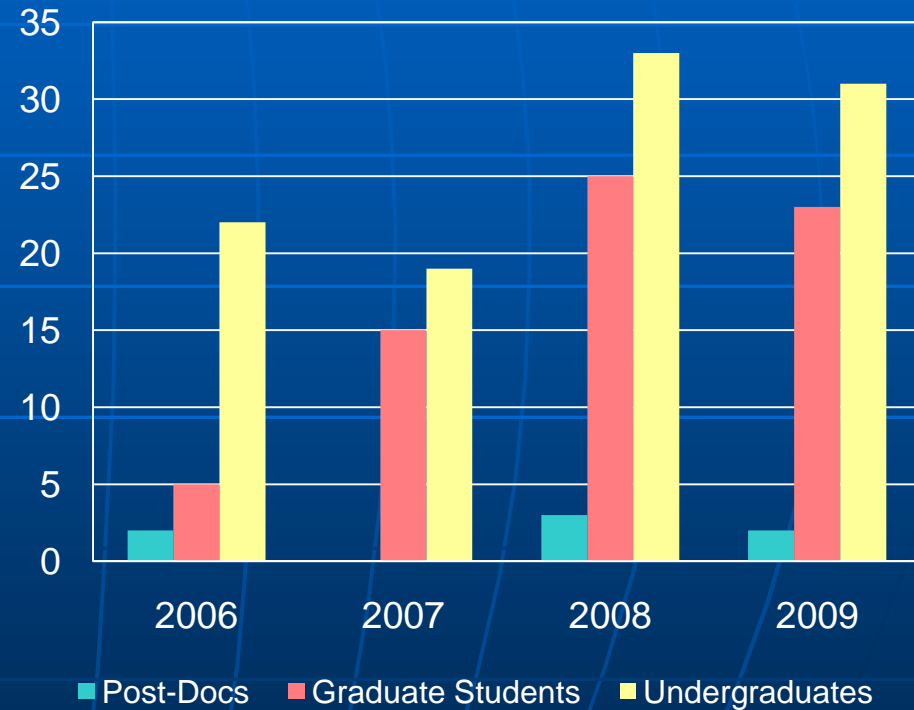
2004 & 2006 PREMs, data from 2008-2009 Annual Reports

Productivity

PREM Output per Reporting Period



Number of Graduates Per Reporting Period



2005 – 2006: 4 PREMs reporting data
2007 – 2009: 10 PREMs reporting data

Cumulative Graduates and Output

Post-docs	8	3 faculty 2 industry 3 other
Graduate Students	63	6 faculty 7 post-doc 17 grad school (Ph.D.); 27% 2 research assistant 22 industry; 35% 6 other, 3 unknown
Undergraduates	112	59 grad school; 53% 7 med school 1 research assistant 39 industry; 35% 5 other, 1 unknown
K-12	100	16 college 84 unknown
Publications	439	
Presentations	1169	

Class of 2004 & 2006 PREMs: data from 2008-2009 Annual Reports

Next Competition

- Anticipate a competition late 2011 early 2012
- Eligible Institutions
 - Minority Serving Institutions
 - Women's colleges
 - Institutions dedicated to educating majority persons with disabilities
- Eligible Partners
 - DMR Supported Centers (MRSEC, NSEC, STC)
 - DMR Supported Facilities

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5295&org=DMR&from=home

http://www.nsf.gov/mps/dmr/awards/dmr_nsec.jsp

http://www.nsf.gov/mps/dmr/awards/dmr_mrsec_stc.jsp

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5359&org=DMR&from=home

Managing a PREM Award

- Annual Reports following PREM specific Guidelines
- Site Visit (Early- Mid-term Year 2 and Year 4)
- Annual PREM PI Meetings
 - (workshops at NSF or at National Conferences)
- Regular meetings -- PREM and Partner
- Annual meetings with External Advisory Board
- Communicate major achievements with Program Managers

We promote your successes!

We will promote accomplishments of PREM within DMR and through the NSF Office of Legislative and Public Affairs.

Give us advance notice of papers accepted to high impact journals (Science, Nature, PNAS, PRL, etc.) for NSF press release or highlighting your work through an NSF media outlet. Please send us:

- a copy of the paper
- a Highlight
- a copy of your university's press release, if available

Send us Research, Education, and Outreach Highlights throughout the year.

Highlights are used to promote your work and the PREM program.

- Government Performance and Results Act (GPRA)
- NSF publications
- Annual DMR CD, DMR webpage, and talks
- MPS Advisory Committee
- DMR Committee of Visitors

Highlights

- Significant outcome
- Catchy Title
- Author List with Affiliation
- Compelling image with caption
 - Avoid plots!
- Half page of text. Not an abstract!
 - **In Plain English** provide a description of the work that answers:
What? and **So What?**
 - Terms we use everyday like quantum, polymer, and spin are a stretch for lay readers!
 - Include PREM in the text. Tell us who supported this work and include award numbers.
 - Include a reference to the paper, if appropriate.

Summary

- Program is dynamic and growing.
- Proposals are getting stronger with every competition.
- PREM community is developing and becoming established.
- Positive impact on students and the institutions.
- PREM graduates are staying in science.

We look forward to hearing your successes, concerns, suggestions, and recommendations!

THANK YOU

