National Science Foundation

MRSEC Directors' Meeting

October 26, 2011

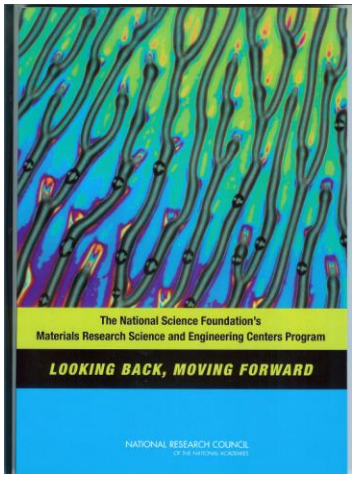
NSF Division of Materials Research

Mary Galvin, Sean Jones, Thomas Rieker, and Charles Ying

National Science Foundation

The Past Year

National Academies Study of the MRSEC Program



The community perceives great value.

Two primary concerns:

- Increasing requirements without a commensurate increase in **resources**
- An **imbalance** in center aspects, in particular with education outreach arising from the varied sizes of MRSECs

- **Recommendation**: To respond to changes in the budgetary landscape and changes in the nature of materials research in the coming decade, NSF should restructure the MRSEC program to allow more efficient use and leveraging of resources. The new program should fully invest in centers of excellence as well as in stand-alone teams of researchers.

2010-2011 Competition
NSF 10-568

- Center of Excellence for Materials Research and Innovation (CEMRI)
  - **two** to **five** IRGs in each center
  - $2M to $5M annual budget – 6 year awards
  - Encouraged to pursue a limited number of education activities
  - International collaboration becomes a requirement
- Materials Interdisciplinary Research Group (MIRT)
  - Focus on **one** major materials research problem
  - $0.5 M to $1.5M annual budget – 3 year awards
  - Elimination of center-level activities
- CEMRI and MIRT pre-proposals reviewed together

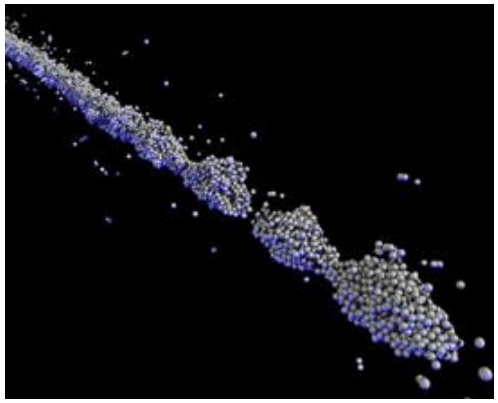
Review Process

49 CEMRI and 88 MIRT Preliminary Proposals

-8 preproposal panels

Strong scientific interest in:

- Science Beyond Moore's Law
  - multiferroics / spintronics / graphene
- Biomaterials
- Energy
- PV, batteries, fuel cells
- Nanoparticle arrays / composites
- Metamaterials
- Active Materials



Granular Streams –
U. Chicago MRSEC

NSF invited 19 CEMRI and 24 MIRT Full Proposals

- 6 CEMRI preproposals invited as MIRT

Mail Review

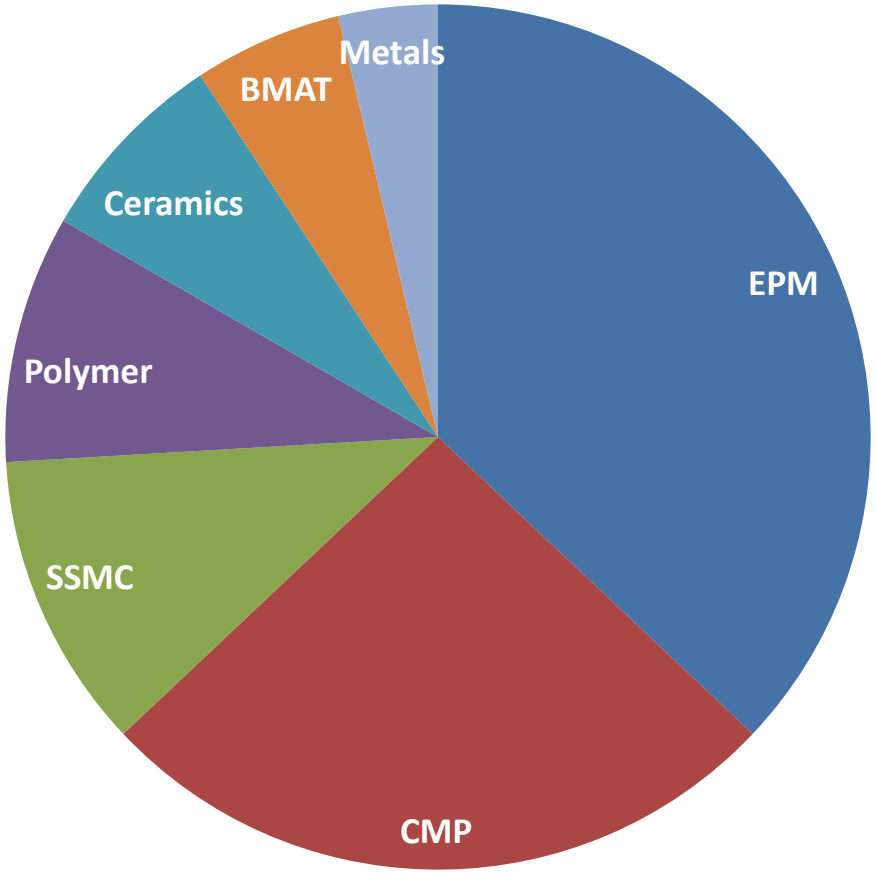
- 14 CEMRI proposals invited for a Reverse Site Visit
- 3 MIRT awards

4 Reverse Site Visit panels, 14 proposals

- 9 Center awards

2011 Materials Research Centers and Teams Awards

9 Centers and 3 MIRTs with a total of 27 IRGs



Reviewer Demographics

Phase	total number of reviewers	Industry %	Women %	Minorities %	National Labs %	EPSCoR %
Preproposal	103	6.8%	22.3%	12.6%	8.7%	11.7%
Mail review	170	5.3%	21.8%	12.9%	8.8%	12.9%
RSV	43	9.3%	25.6%	11.6%	7.0%	9.3%
Overall - unique	256	5.9%	20.7%	12.5%	9.4%	11.3%

- 191 reviewers participated in one of the three phases of the competition
- 56 reviewers participated in two phases
- 9 reviewers participated in all three phases of the competition

MRSEC Class of 2011

Institution	IRGs	Institution	IRGs
UC Santa Barbara	3	U Pennsylvania	4
Cornell U	3	U Wisconsin	3
Duke U - **New**	2	U. Utah - **New**	2
U. Michigan - **New**	2	Yale U.	2
Northwestern U	3		

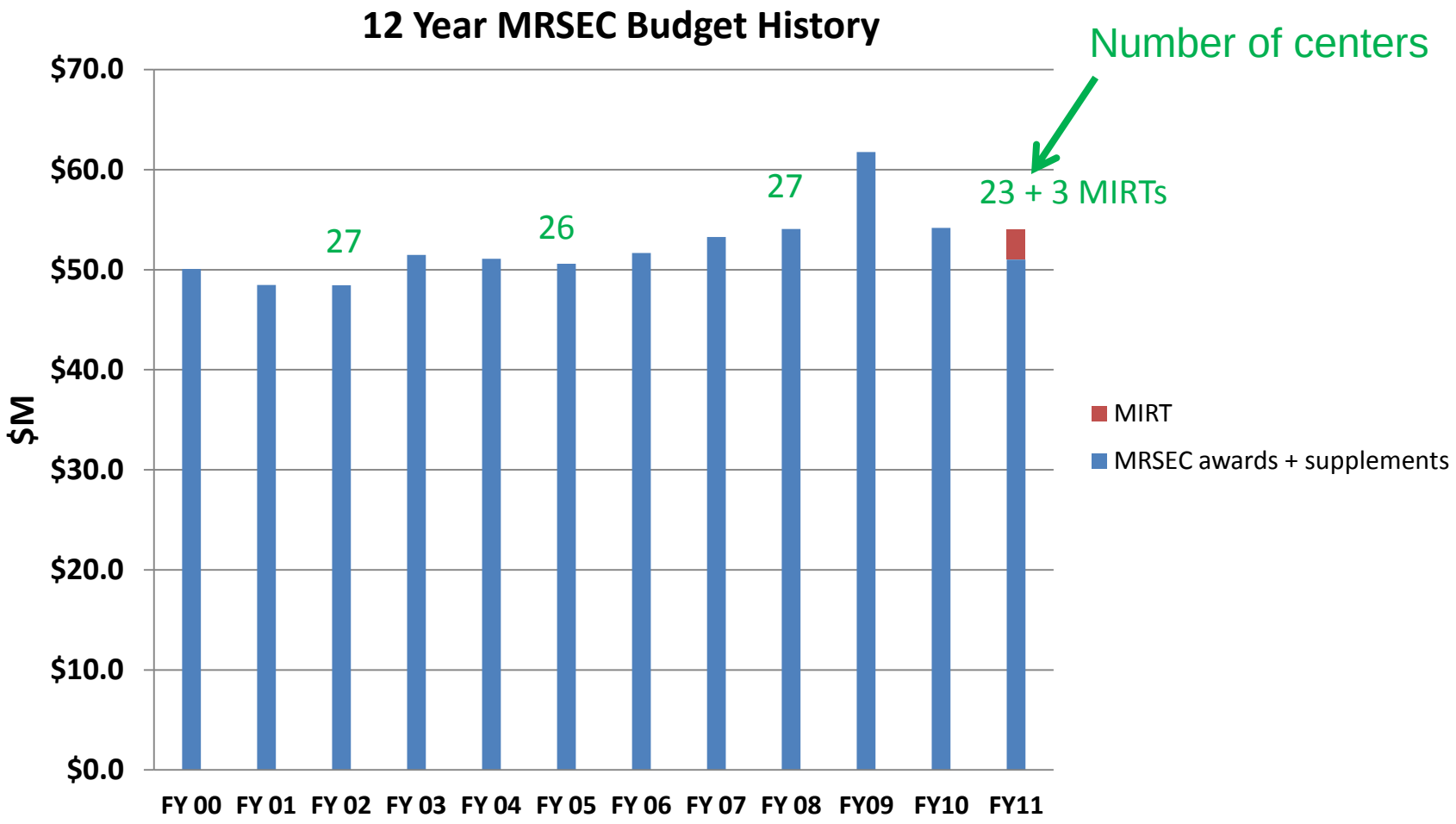
Significant turnover in the program:

- 13 MRSECs in the Class of 2005, including four 1 IRG centers
- Co-funding from the MPS Office of Multidisciplinary Activities.

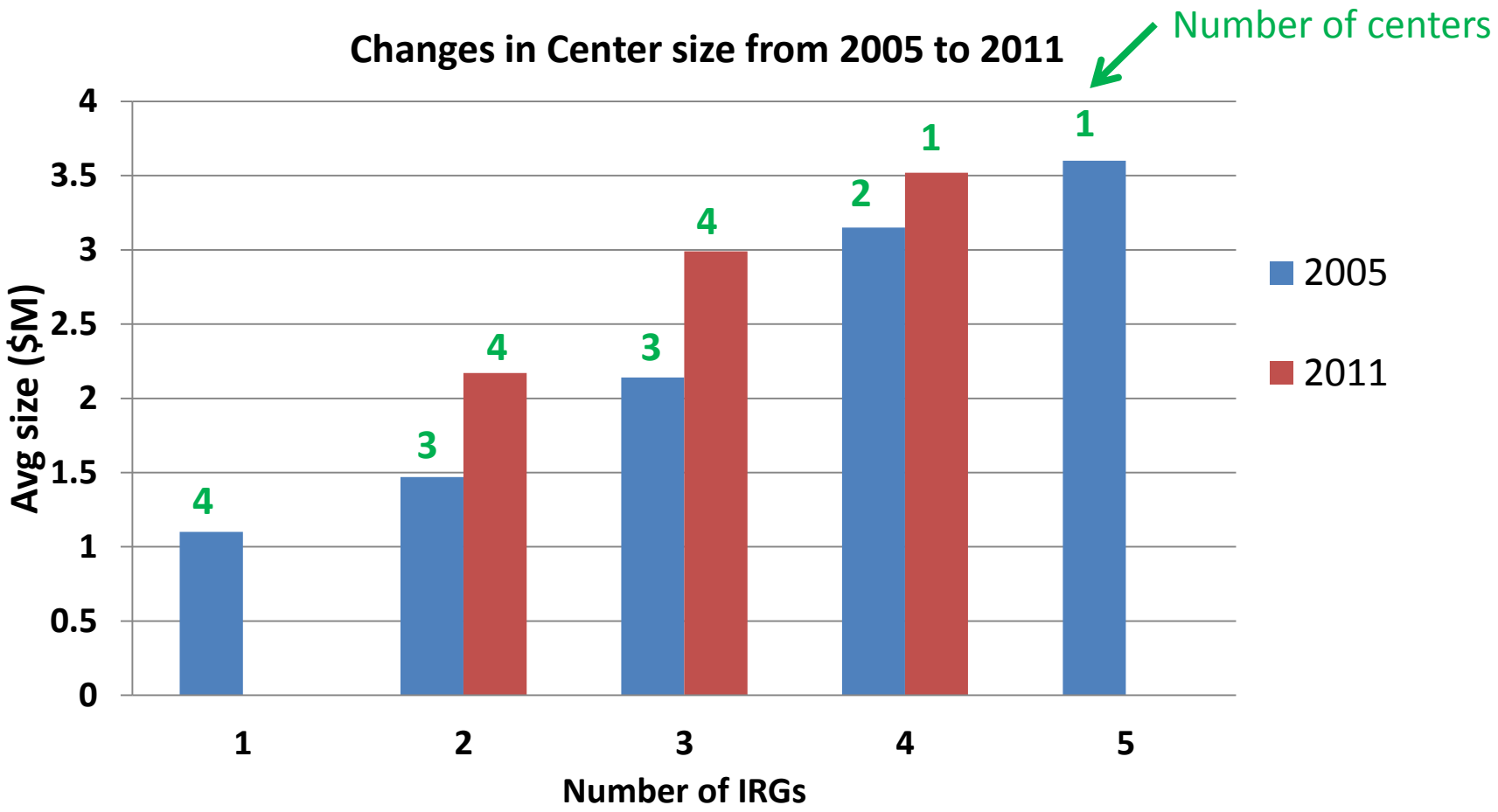
Class of 2011 MIRTs

Institution	Topic
Columbia	Van der Waals Materials
UNC – Chapel Hill	Stressed Polymers
U Texas – Austin	Transition Metal Oxides

MRSEC Budget History



Evolution of Centers



Annual / Final Reports

- **Submit Annual Reports on time** – DMR will sweep funds

- **Focus Annual Reports!**
  - **Executive Summary –** High level report to NSF on major accomplishments, activities of the center, and plans
  - **IRGs and Education** – Synthesis of what occurred over the past year. Focus on accomplishments. Not a list of experiments
  - **Ensure that all work from the MRSEC award acknowledges the award number and the MRSEC program.** Only publications that acknowledge MRSEC are to be included in annual reports.

- Increase number of publications with **2 or more center participants**.

Annual / Final Reports

- **Research.gov** – A new NSF requirement to submit publications through the FastLane publications module.
  - One by one entry or as an End Notes file
  - Catch-up for previous years

- **Final Report** – Class of 2005 awards
  - Guidelines to be sent in early 2012

Questions