Mission

The mission of the Division of Materials Research (DMR) is to make new discoveries about the behavior of matter and materials; to create new materials and new knowledge about materials phenomena; to address fundamental materials questions that often transcend traditional scientific and engineering disciplines and may lead to new technologies; to prepare the next generation of materials researchers; to develop and support the instruments and facilities that are crucial to advance the field; and to share the excitement and significance of materials science with the public at large.

The research and education activities supported are critical to national competitiveness. DMR supports experimental and theoretical research over a broad range of subfields, including condensed matter and materials physics, solid state and materials chemistry, electronic and photonic materials, metals and metallic nanostructures, polymers, ceramics, and biomaterials. Funding modes range from awards to individual investigators and small groups to centers, instrumentation and major facilities.

Workforce Development and Broadening Participation

DMR strives to broaden the participation of women and underrepresented minority groups in science and engineering at all academic levels. One aspect of this vision is the Partnership for Research and Education in Materials (PREM) program, which develops and supports long-term partnerships between academic institutions serving underrepresented groups and DMR centers and facilities. PREM was started in 2004 and currently supports 14 awards.

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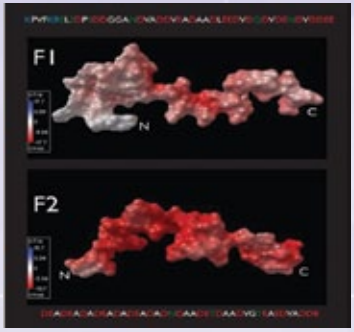


Materials science is interested in learning how proteins, like Asprich, can form puncture-resistant mineralized assemblies found in nature e.g. a mollusk shell. Part of the answer lies at the structural level, where Asprich sequences exist in a disordered state.

Credit: John Evans

Programs in Materials Research

Programs for Individual Investigators and Groups
Biomaterials
Ceramics
Condensed Matter and Materials Theory
Condensed Matter Physics
Electronic and Photonic Materials
Metallic Materials and Nanostructures
Polymers
Solid State and Materials Chemistry

Crosscutting DMR Programs

Instrumentation for Materials Research
- -Acquisition and development of instrumentation that meets the research innovation needs of the material science community.
- -Instrumentation for Materials Research – Midscale Instrumentation Program (IMR-MIP)
- -the individual investigator scale Instrumentation for Materials Research (IMR) program.
- -NSF-wide Major Research Instrumentation (MRI) program

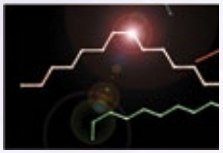
Materials Research Science and Engineering Centers (MRSECs)
- - MRSECs address fundamental materials research problems whose scope and complexity require the advantages of scale and interdisciplinarity provided by a center. Twenty-seven centers are currently supported. For more information visit http://www.mrsec.org/.
- -Partnerships for Research and Education in Materials (PREM)

National Facilities
- -DMR supports user facilities for neutron scattering, x-rays, high magnetic fields and nano-fabrication.

Office of Special Programs
- -International Materials Institutes
- -Materials World Network
- -Research Experiences for Undergraduates (REU) and Teachers (RET)

A *Guide to Programs / Browse Funding Opportunities* is available at http://www.nsf.gov/funding/browse_all_funding.jsp.

The **Materials World Network (MWN)**, initiated and supported by the Division of Materials Research in partnership with over fifty research funding organizations worldwide, engages global resources for the advancement of materials research and education. International collaborative projects underpin the network; the International Materials Institutes serve as its nodes.

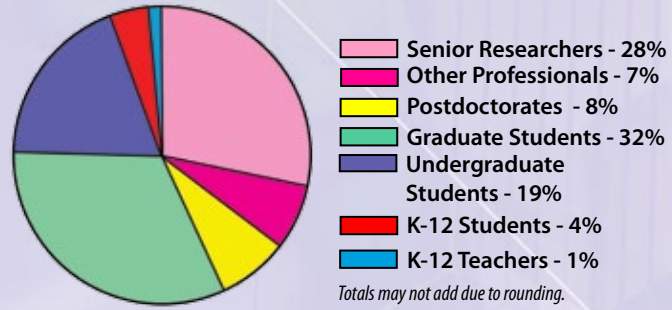


Taking nanomaterials to a new level of structural complexity, scientists have determined how to introduce kinks into arrow-straight nanowires, transforming them into zigzagging two- and three-dimensional structures with correspondingly advanced functions.

Credit: Bozhi Tian, Lieber Group

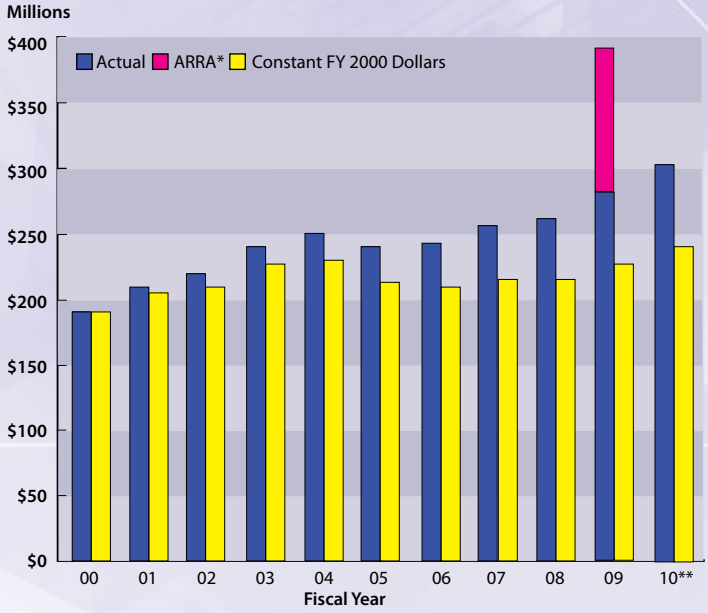
Human Resources FY 2009

Pie chart showing total number of people involved in DMR.



Totals may not add due to rounding.

Budget in Actual and Constant FY 2000 Dollars



DMR annual budgets in actual and constant FY 2000 dollars. Constant dollars show the purchasing power of the DMR budget. Over this 11-year period, the constant dollar budget for DMR has increased 27%.
*ARRA - American Recovery and Reinvestment Act of FY 2009. **Current Plan.

Data provided from FY 2000 to 2011 NSF Budget Requests to Congress, http://www.nsf.gov/about/budget/.

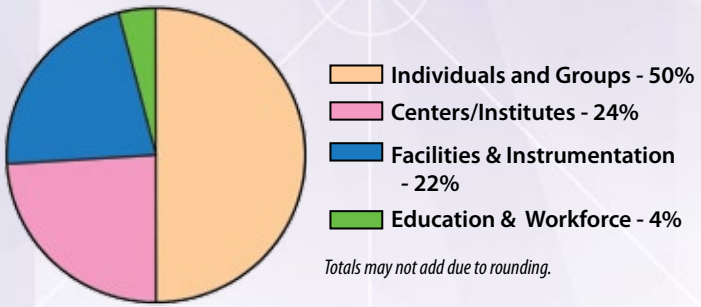
Funding Rates and Number of Actions

Graph shows number of proposals submitted versus awarded for Research Grants as defined by NSF and resultant success rates. Success rate is defined as the number of new or renewal proposals awarded funding divided by the total number of proposals received.

* *FY 2009 funding rate includes awards made with ARRA funds.*

Note: the distribution of success rates reflects the average for the Materials Research Division and may not represent success rates in individual programs.

Modes of Support FY 2009



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