MPS Division of Materials Research (DMR)
Briefing for MPS Advisory Committee

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Community Input in DMR

- DMR outreach at professional society meetings (APS, MRS, ACS, AVS, NoBCChE)
- Committee of Visitor’s Meeting
- MPS-AC Sub-Committee Reports
- Funded Studies (NAS, TMS, Workshops, etc.)
- Workshops (e.g. Young Investigator, Polymer Decadal Study, Future of EPM, Soft CMP, Future of Topological Insulators in CMP)
- Federal Interagency Material Research (FIMaR) meeting
- Site visits and ad-hoc visits to PIs

Information regarding:
- Strategic planning
- PI’s concerns
- Diversity
- Partnership
DMR Example

National Academy study and 2 reports from subcommittees of the MPS-AC resulted in the development of DMR’s newest programs:

- **Designing Materials to Revolutionize and Engineer our Future (DMREF)** created as DCL in 2012, Solicitation since 2014, now running biennially (MPS, ENG, CISE). Covers all material research topics.

- **Materials Innovation Platforms (MIP)** created as solicitation in 2015. Two platforms funded in 2016 enhancing nation’s capabilities in crystal and thin film growth. FY2019 solicitation on convergence of Materials and Biological Sciences.

**WHITE PAPER ON POTENTIAL MPS/NSF INITIATIVE:** "MATTER BY DESIGN" Supporting Integrated Experiment, Computation, and Theory to Transform Science

**MPSAC Members:** Juan de Pablo, Sharon Glotzer, Theresa Maldonado, Elsa Reichmanis  
NSF Members: Krastan Blagoyev, Estela Blaisten, Daryl Hess, Andrew Lovinger, Jeffrey Pier, Linda Sapochak, Michael Steuerwalt
DMR Upcoming Activities

FY 2019

• Run DMREF (nPsf19-516) & MIP (nsf19-526) competitions
• Start Materials Research Science & Engineering Centers (MRSEC) competition (nsf19-517)
• Manage the Q-AMASE-i (Enabling Quantum Leap: Convergent Accelerated Discovery Foundries for Quantum Materials Science, Engineering, and Information (nsf18-578) competition
• Receive NSF/DOE-supported NAS Materials Decadal Survey
• Receive TMS “A Study on Creating the MGI Workforce”
• Start Square Table series, first on “Living Interfaces” – convergence of soft condensed matter physics, synthetic biology, and biomaterials with NIH, FDA, DARPA, AFOSR, AFRL (December 2018). Issue DCL for EAGERs
• Host the Federal Interagency Materials Research (FIMaR) meeting (February 2019) focus on Quantum Leap, Materials Decadal Survey
• Increase engagement in NSF Big Ideas: Rules of Life, Work at the Human-Tech Frontier
• Hold a DMR retreat on “Strategies for Diversity and Inclusiveness”, January 2019
• End NSF stewardship of Cornell High Energy Synchrotron Source (CHESS) and transition to partnership model to support a sub-facility (with MCB/BIO and CMMI/ENG)
• Partnership renewal for Center for High Resolution Neutron Scattering (CHRNS) with NIST
• Partnership development with AF in advanced material sciences (synthetic biology for materials, MGI and AI, complex structural materials, quantum materials) in collaboration with NSF/ENG
• Preparation for Committee of Visitors (September 2019)