

# Civil, Mechanical and Manufacturing Innovation (CMMI) Division

## Summary of Committee of Visitors Report

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Georgia-Anne Klutke, Texas A & M

Karl Hedrick, Berkeley

George Haritos, Univ. Akron

# Review Format

- Full web-based review system (Matt Carnavos)
  - Kickoff Briefing May 5; administrative review began
  - 2 Conf Call Orientations and Workflow Developed
  - Jacket Reviews (240) & Individual Input to Part A of Report Completed before Review
- Held review June 24 – 26 as a part of the 2009 Research and Innovation Conference (Honolulu)
  - Committee Attended Selected Sessions
  - Met with Division Program Managers
  - Completed Report

# Part A: Integrity and Efficiency of the Program's Processes and Management

- Management of the programs within the division is solid, balanced and professional.
- Proposal reviews were performed in a timely manner and decisions were communicated to the PIs within six months for well over 70% of the proposals.
- The program supports high quality research and is responsive to emerging research and education opportunities and national priorities (e.g., sustainability, energy, manufacturing)
- The program has appropriate balance with regard to awards to new investigators

# Part A: Review Methods

## COV Recommendations

- Merit Review Criteria
  - The program directors must insist strenuously that reviewers address both criteria.
  - The program directors must similarly insist that annual reports address the second criterion with sufficient depth.
- Reviewers and Panels
  - The COV recommends that program officers prompt panelists to give more substantive comments
  - “Self assessments” from reviewers/panelists on how qualified they think they are for any given proposal would be helpful
  - The COV recommends that if the demographics of the panels do not broadly represent the demographics of available qualified reviewers, that the program officer document the reasons for this.
  - The NSF gathers extensive demographic data (Science and Engineering Indicators; [www.nsf.gov/statistics/seind08](http://www.nsf.gov/statistics/seind08)). The COV recommends that this data be used to evaluate balance.

# Part A: Responsiveness to Previous COV Reviews

- Level of Staff Support
- The DMI COV of 2006 observed “Both the directorate and the DMI division should examine their strategic plans for consistency with the GPRA goals and make changes to align these strategic plans with the desired outcomes.”
- Broader impact
  - a. There is still no common understanding by the reviewers of how to judge the quality of potential broader impacts.
  - b. The degree to which broader impact is achieved should be assessed – at least qualitatively.
- The DMI COV of 2006 observed that the award size and duration were not appropriate. The COV has found no evidence of an analysis of the process for determining the appropriate size of awards

# Part C: Improvements or Gaps

The CMMI division was established in 2006 through the merger of the CMS and DMI divisions

- In spite of merger, division programs have changed very little
- Committee recommends that the division consider whether the current programs adequately support the mission of the division and how the programs and focus areas can evolve to address important national and societal issues
- The Division's mission statement needs to be sharpened. It should be succinct. The connection between vision, mission, goals, and objectives should be clear.
- The Division is at a critical juncture in its reorganization: the time is right for developing a division strategy. It would help define the Division's identity and to communicate this identity to others. This should be a top priority for the new CMMI Division Director

## Part C: Improvements or Gaps

- In light of the division's expanded mission, the COV recommends that an assessment of the CMMI Grantees' Conference be undertaken to identify clearly the benefits achieved by the meeting and to examine alternate formats to better achieve its goals.
- The division should ensure that program directors and PIs have adequate resources to interact with their PIs and to stay engaged in their disciplinary areas

# Part C: Agency-wide Issues Relevant to Program Performance

- The decision process currently used by the Foundation in making budget allocation to the directorates appears to lack transparency.
  - It is recommended that the Foundation develop evaluation criteria and integrate the outcomes of program, division, and directorate evaluations into budget allocation decisions.
- Greater contacts between program directors and their research communities would enhance their effectiveness. More travel funds be made available to program directors that hold permanent employment with NSF
  - The current dichotomy between program directors who are rotators and non-rotators in travel fund budget should be eliminated.



# Part C: Agency-wide Issues Relevant to Program Performance

- Engineering ranks second to the last in proposal success rate and average award size among the directorates. Given the potential contributions of engineering to economic competitiveness and other areas of critical national needs, these statistics suggest there is a dichotomy between the national priorities and the budget allocation to engineering to address these needs.
  - *What is the Foundation planning to do to eliminate or on the minimum, lessen this dichotomy?*
- Balance of institutional types participating in the program (A3). It is difficult to adequately respond to this question when no data is shared with the Committee on what the Foundation's targets for institutional balance are
  - *Has the Foundation defined or established the desired target levels that it would like to achieve on the degree of participation by various institution types and if so, what are these target levels?*