



MEMORANDUM

DATE: September 27, 2010

TO: Jo Culberson, Staff Associate/OAD/ENG

FROM: Lawrence S. Goldberg, Senior Engineering Advisor/ECCS/ENG

SUBJECT: ECCS 2008 COV – Update 2010

COV 2008 Summary Observations:

The COV identified several areas of concern it believed undermined the effectiveness of the research areas for which ECCS is responsible. The COV recommended that vigorous action was needed by ENG and NSF to improve the funding level for ECCS. The COV's concerns (paraphrased in *italics*) were:

- (i) Limited funding meant the ECCS programs were not very deep in their coverage of topics;*
- (ii) The average award size lagged behind ENG and NSF in providing for research costs;*
- (iii) Most proposal budgets were, as a result, renegotiated downward prior to funding;*
and
- (iv) Without increased funding, ECCS needed to take prompt action and choose to decrease its success rate in order to increase the average award size.*

A particularly challenging problem for the Engineering Directorate is dealing with the low success rate and low average award size for our grantees. ENG receives the largest number of proposals in the Foundation (about 10,000 proposals/year, or approximately 25% of all submissions to NSF).

ECCS's top priority is to maintain healthy disciplinary programs. In this past year, ECCS received 1486 competitive proposals, an increase of 7% over 2009. The ECCS success rate for all competitive proposals was 16.6%. The Division also seeks to foster a technically competent engineering workforce, which is reflected in the Division's continued strong support for CAREER awards. The ECCS success rate for CAREER awards was 17% in 2010 (previously 19% in 2008; 29% in 2009, which then included ARRA funding).

The Division has striven to fund individual investigator awards at a range of \$330-360K, and funding for small group awards at a level typically of \$450-500K. The median funding amount in 2010 was \$330K, a slight increase over the median amount in 2009 of \$322K.

COV 2008 Template, Parts A, B, C:

A.1.4: In cases where the panel consensus differed significantly from the individual reviewers' ratings, the panel summaries needed to provide a clearer rationale for the decisions.

ECCS program directors continue to give attention in each panel they moderate to assuring that the panel summaries clearly reflect the consensus of the panel's discussion and recommendation for all proposals considered.

A.1.8: The broader impacts criterion was not adequately addressed in many individual reviews, especially with regard to educational impacts, pointing out that most discussion is on intellectual merit.

ECCS Program Directors continue to place strong emphasis on the need for balanced discussion of both review criteria when they invite and send formal written guidelines to potential panel reviewers and during the panel review process.

There were instances where program officers overrode a panel's recommendation without clearly laying out the rationale for their decision in e-jacket.

The Division Director continues to require all ECCS Program Directors to provide a clear rationale in their own words for all funding recommendations, including those that may differ with the recommendation of the review process.

A.2.1,2,4: Reviewers selected by ECCS typically had appropriate expertise and qualifications, and recognized in a positive sense that there was increasing participation by reviewers from industry, government agencies and laboratories. The number of first-time panelists has been increasing, reaching almost 40%, which serves an important part of educating future PIs. More geographic, ethnic, and gender diversity is needed.

ECCS Program Directors are very conscious in organizing panels to bring in new reviewers to the system and have consideration of demographic and geographic diversity, including from industry. This remains a continuing challenge that ECCS is addressing in providing appropriate expertise and background to enable a fair and balanced review process.

A3.6,13: There was good balance between single and multiple investigator awards, but the award size needed to be commensurate with the number of investigators. A large number of the proposals reviewed had proposed budgets reduced prior to the awards, sometimes by rather large amounts, which can seriously affect the scope of work. In situations where a budget reduction will likely be requested, the panel should be asked to comment on whether the projects will downscale effectively.

When a proposal possibly may be funded at a substantially lower budget level, program directors will seek the panel's input whether a resultant lower level of effort would still be consistent with the panel's evaluation and this statement is placed in the panel summary. Some reductions will nevertheless be decided on by program directors following the panel process. In all cases, PIs will be required to provide project justification to any reduced scope of work.

A.4.5: The COV recommended that future GOALI grant recipients be required to demonstrate and report efforts to disseminate and commercialize results.

ECCS continues to assess its existing and prospective GOALI awards based on the efforts by the PIs for effective knowledge transfer between academe and industry.

C.5: Four categories of changes in procedures were recommended that could streamline the COV process: (i) Each COV member should complete the jacket review in advance electronically and send initial remarks on Sections A-1 and A-2 to the Chair; (ii) choose break-out sessions on discussions of major sections of the report, rather than on the basis of program areas; (iii) create a template for pulling EIS summaries relevant to each section of the COV report; and (iv) include at least one member of the previous COV in the group.

Many of these changes were considered by ENG in setting up future COVs. The COV process now involves electronic evaluation of jackets in advance of the meetings. It is also normal procedure to include at least one member of the previous COV in the invited group.