

Date: September 12, 2007

To: Richard O. Buckius, Assistant Director for Engineering

From: Kesh Narayanan, Division Director, Industrial Innovation and Partnerships (IIP)

Re: Response to Recommendations of the 2007 IIP Committee of Visitors

The Industrial Innovation and Partnerships (IIP) Committee of Visitors (COV) review was conducted January 23-26, 2007. The report of this COV was transmitted to Dr. Richard K. Miller Chair of the Engineering Advisory Committee (ENG AdComm) on March 14, 2007. This response is based on the report given Dr. E. Jennings Taylor, the Chair of the 2007 IIP COV and member of the ENG AdComm, to the Engineering Advisory Committee on April 20, 2007. The report was accepted without additional comment by the Engineering Advisory Committee.

This IIP COV report covered the Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) programs, considering actions and active awards during FY 04-06. The Division is pleased with the overall assessment of its performance and progress in meeting the Foundation's goals as well as the goals of the Federal SBIR/STTR Program.

These responses focus on specific recommendations noted in the COV report. Since related recommendations were cited in a number of sections in the COV report template, the recommendations have been summarized into five major areas with the sections of the COV template referenced and the Division response provided for each major area.

1. Reviewer Selection and Guidance

The COV had the following recommendations concerning reviewer selection and guidance:

(A.1.3) Provide additional pre-panel guidance to insure that all reviewers provide substantive comments.

(A.3.2, C.2.8) Expand the pool of commercial reviewers to include more individuals with demonstrated commercialization experience.

(A.1.7, A.3.2, C.2.4, C.2.5) Provide the commercial reviewers with additional guidance to insure that they consider all of the multiple paths to potential successful commercialization.

Division Response IIP has amended the pre-panel instructions to the reviewers, in response to the COV recommendation, to insure that more substantive comments are provided that are both technically and commercially sound. The program

directors are also working with individual reviewers during panels to insure that reviews are revised when deficiencies are observed.

The program continues to expand the pool of qualified commercial reviewers within the limitations of the conflict of interest requirements. The pre-review instructions are being updated, in response to the COV recommendation, to insure that commercial reviewers are cognizant of the possible commercialization models that the SBIR/STTR program embraces. These models are also being emphasized during the panel discussion.

2. Review Content and Process

The COV had the following recommendations concerning the review content and process:

(C.2.7) Provide additional guidance concerning Criterion Two-Broader Impacts that commercialization potential is the highest priority of the SBIR/STTR program.

(A.1.4, A.1.7) Improve e-jacket documentation of information provided on proposals that are declined as well as those that are recommended with “revision”. Insure that the panel summaries reflect the importance of the commercial plan review in the decision process

(C.2.8, C.2.9) Expand the evaluation of commercial potential in the Phase I proposal review and consider using the same reviewers for the Phase I and Phase II proposals.

(A.2.1) Provide a third review criterion, “Innovation” since this is the focus of the SBIR/STTR program and the IIP division.

Division Response IIP has amended the pre-panel instructions, in response to the COV recommendation, to emphasize the importance of commercial potential in the SBIR/STTR program under Criterion Two. In the review of Phase II proposals, Program Directors are providing a technical review summary, a commercial review summary and a composite recommendation to address the concerns of not adequately addressing the strengths and weaknesses of the commercial plan.

The e-mail notice to the proposer for a declination and award contain a link to access the individual reviews and the panel summary as part of the standard debriefing process. Quality control measures are being implemented to insure this information is available in all notices.

The “Fund with Revision” recommendation for meritorious Phase II proposals that have minor technical and/or commercial deficiencies is a new concept. The documentation of this process in e-jacket will be refined.

All of the SBIR/STTR proposals are evaluated through the use of the two National Science Board (NSB)-approved merit review criteria: intellectual merit and broader impact. The SBIR/STTR program has additional criteria that reflect the legislative emphasis of the program and complement the standard NSF review criteria. The program will consider more emphasis on innovation in the evaluation process within the framework of the NSB-approved merit review criterion of broader impact.

The program is using more commercial reviewers for Phase I proposals particularly with proposals in the Emerging Opportunities topic that is focused on a three year to market time frame. Historically for Phase II reviews, the program has tried to use some of the same reviewers who reviewed the Phase I proposal. It is neither practical nor appropriate to use the same set of reviewers for both evaluations.

3. Program Management

The COV had the following recommendations concerning the management of the SBIR/STTR program:

(A.5.1, C.1.3) Institute standard procedures to train new Program Officers while allowing experienced Program Officers the flexibility to engage their unique skills. Encourage the staff to use information technology tools to improve their ability to collect, retrieve and analyze data for process improvement and program evaluation.

(A.5.4, C.1.1) Significantly increase site visits to grantees since this is a very important aspect of managing the program’s portfolio. Site visits are restricted due to serious limitations on travel resources. The COV urged NSF to explore ways to increase travel budgets as well as to explore other ways to enhance program portfolio management especially for Phase II and Phase IIB Grantees.

(C.2.6, C.2.11, C.4.11) Continue the proactive approaches to the management of the SBIR/STTR program that include, for example, supplements to encourage participation by underrepresented groups, support for small businesses to participate in university research centers and balancing the risk /reward in the program portfolio.

(C.2.10.1) Highlight more prominently in the review process the commercialization performance of companies that have received previous Phase II awards.

Division Response: IIP has embarked on a comprehensive review and documentation of the key SBIR/STTR processes and procedures in response to the COV recommendation. This information is being developed and shared with the program directors and the federal and contract support staff through a “best practices” program. This “best practices” information is being updated on a regular basis. As new employees join the program, training in “best practices” will be provided.

The program is also addressing the collection, management and analysis of data already available within the NSF data systems to enable the staff to more effectively monitor the impact of the program.

The program is pursuing all options available to increase travel resources within the agency’s budget limitations as well as the recent staffing limitations in IIP. Outreach activity includes regional site visits to Phase II grantees.

The program will continue to explore new ways to expand industry-university collaboration through the IIP “Innovation through Partnerships” strategy as well as including more of the underrepresented communities in the small business process.

A company commercialization history is required in every proposal from a company that has received a federal Phase II award. For both reviewers and the program director commercialization is a major factor in making award recommendations. In the future, commercialization will be more prominently noted in the review analysis.

4. Program Evaluation

The COV had the following recommendations concerning evaluation of the SBIR/STTR program:

(C.2.10.2) Continue to monitor and evaluate the impact of the Phase I Commercialization Assistance program on the quality of Phase II proposals as well as Phase II award outcomes.

(C.1.2) Expand the Phase II Commercialization Outcomes evaluation to include more statistical analysis of the data to aid in program management.

Division Response: IIP will continue to monitor the quality of the Phase II commercialization plans and to provide feedback to the contractors on areas for improvement. A plan is being formulated to relate the results of commercialization outcomes to the Phase I Commercialization Assistance program.

Refinements are being made in the Phase II Commercial Outcomes Analysis including the use of an independent research organization to analyze the outcomes data and to refine the information gathering tool to better capture the metrics that measure the effectiveness of the program.

5. COV Process Improvement

The COV had the following recommendations concerning improvements to the COV process:

(C.5) Continue to develop common electronic workspaces for COV preparations.

(C.5) Organize and present summary data in a graphical rather than a tabular fashion for COV consideration.

(C.5) Provide an earlier orientation to the COV process and tools and expand the use of teleconferencing among the COV members.

Division Response IIP plans to continue to develop common electronic workspaces for future IIP COV preparations.

For the next IIP COV, summary data in a graphical format will be provided for COV consideration. and an orientation to the COV process will be conducted at least 60 days before the meeting.

The chair of the next IIP COV will be encouraged to expand the use of teleconferencing among the COV members.