

**NATIONAL SCIENCE FOUNDATION  
ARLINGTON, VA 22230**

**Engineering Directorate  
Division of Industrial Innovation and Partnerships**

Report of the  
Advisory Committee for  
Small Business Innovation Research (SBIR) and  
Small Business Technology Transfer (STTR)  
Programs

25-26 October 2011

## 1.0 INTRODUCTION

The National Science Foundation (NSF) Advisory Committee (AdCom) for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs met October 25-26, 2011 in Arlington VA, at the National Science Foundation.

Advisory Committee members in attendance included:

Susan Butts  
Trish Costello  
John Tao  
Karen Kerr  
Mark Clevey  
Albert Johnson  
Tom Knight (Chairman)  
Richard Paul  
Karthik Ramani  
Ann Savoca  
David B. Spencer  
E. Jennings Taylor

Advisory Committee members absent:

Patrick Brown  
Arlene Garrison  
Angus Livingstone

NSF representatives attending all or part of the meeting included:

Thomas Peterson, Assistant Director, Directorate for Engineering (ENG)  
Kesh Narayanan, Deputy Assistant Director, ENG  
Joseph Hennessey, Senior Advisor, IIP  
Errol Arkilic, i-Corps Program Director, Office of Integrative Activities (OIA)  
Prakash Balan, SBIR/STTR Program Director, IIP  
Rathindra DasGupta, I/UCRC Program Director, IIP  
Juan Figueroa, SBIR/STTR Program Director, IIP  
Karlene Hoo, AIR Program Director, IIP  
Glenn Larsen, SBIR/STTR Program Director, IIP  
Murali Nair, SBIR/STTR Program Director, IIP  
Sally Nerlove, PFI Program Director, IIP  
Ben Schrag, SBIR/STTR Program Director, IIP  
Ruth Shuman, SBIR/STTR Program Director, IIP  
George Vermont, SBIR/STTR Expert, IIP  
Tony Walters, SBIR/STTR Program Director, IIP  
Grace Wang, SBIR/STTR Program Director, IIP  
Malathi Srivatsan, AAAS Fellow, IIP  
Alexandria Medino-Borja, Staff Associate "to-be", ENG  
Amanda May, Program Support Manager, IIP  
Caroline Hayer, Program Specialist, IIP  
Josh Abbott, Program Specialist, IIP  
Bob Pauley, Einstein Fellow, IIP  
Amanda Morris, IQS/EDJ contract Project Manager, IIP

Other representatives attended all or part of the meeting included:

John Pyrovolakis, CEO of Kenotomeo, Inc., Innovation Accelerator contract  
Harry Mayfield, NSF visitor

## 2.0 AGENDA

The agenda for the meeting is included below.

<b><u>Tuesday, October 25<sup>th</sup></u></b>	
8:00am	Arrival & Light Refreshments
8:30 am	Welcome (Tom Knight)
	Review/Approve Meeting Minutes from Spring, 2011 (Tom Knight)
	Introductions & Personnel Updates (Joe Hennessey)
	Reauthorization & Budget Update (Joe Hennessey)
9:00 am	Strategic Update: <b>Industrial Innovation Leadership &amp; Partnership</b> <ul style="list-style-type: none"> <li>• Overview of SBIR/STTR Partnership Programs (Joe Hennessey)</li> <li>• Innovation Corps Program (Errol Arkilic)</li> </ul>
Break	See Quiznos menu, select your meal
10:30 am	Strategic Update: <b>Globally Competitive Preeminent Workforce</b> <ul style="list-style-type: none"> <li>• Broadening Participation (Malathi Srivatsan)</li> <li>• SBA Diversity Working Group (Juan Figueroa)</li> </ul>
Lunch	Working Lunch: Money will be collected during break (Quiznos) <b>TOPIC: Budget Implications for FY12</b>
1:00 pm	Strategic Update: <b>Impacts Assessment</b> <ul style="list-style-type: none"> <li>• Assessment &amp; Implementation (Cheryl Albus)</li> <li>• NSF Strategic Performance Measure (Amanda May)</li> <li>• Phase II Award Outcomes (George Vermont)</li> </ul>
	Strategic Update: <b>Increased Commercialization</b> <ul style="list-style-type: none"> <li>• Patent &amp; Trade (Joe Hennessey)</li> <li>• Innovation Accelerator &amp; Matchmaker (Murali Nair)</li> </ul>
Break	See Office Hour Schedule
2:30 pm	“Office Hour” with Program Directors
4:00 pm	Strategic Update: <b>Operational Excellence</b> <ul style="list-style-type: none"> <li>• GAO Report (Joe Hennessey)</li> <li>• CAAR/DGA Model (Joe Hennessey)</li> </ul>
4:30 pm	Open Q/A
5:30pm	Dinner: Willow Restaurant <a href="#">4301 N. Fairfax Drive (703/465-8800)</a>
<b>Wednesday, October 26<sup>th</sup></b>	
8:00 am	Arrival & Light Refreshments
8:30 am	AdCom Deliberations
11:00 am	AdCom Feedback to NSF
12:00 pm	Adjourn

### **3.0 COMMENTS and FEEDBACK**

The AdCom considered and provided feedback on the following discussion items from the meeting agenda. We appreciate that the topics were organized within the five IIP strategic goals:

- Industrial Innovation Leadership and Partnerships
- Globally Competitive Pre-eminent Workforce
- Impacts Assessment
- Increased Commercialization
- Operational Excellence

#### Discussion and Approval of Minutes from Prior Meeting

After a brief discussion, the AdCom approved the minutes from the previous meeting held in May 2011.

#### Industrial Innovation Leadership & Partnership: Overview of SBIR/STTR Partnership Programs

The AdCom congratulates Kesh Narayanan for his recent promotion to the post of Deputy Assistant Director of the Directorate for Engineering, and commends him on his many accomplishments as the IIP Division Director these past years.

The AdCom commends the leadership of Joseph Hennessey and Don Senich during the transition period and appreciates their efforts to organize this highly productive AdCom meeting.

#### Industrial Innovation Leadership & Partnership: Budget Implications for FY12

Given the current uncertainty regarding the federal budget and the SBIR reauthorization, the AdCom recognizes the difficulty in managing award rates and funding levels. The AdCom endorses the strategy presented by Joseph Hennessey for managing this uncertainty, including:

- IIP should not reduce award size.
- IIP should concentrate on IB, IIB, and REU/RET/RAHASS (only 1 per grantee) supplements, and it should delay funding of other supplements until the final budget is approved. The AdCom recommends clear communication to the grantee community regarding which supplements will not be funded until the budget is resolved.
- IIP should let award rate adjust to the budget. If budget cuts occur, award rates will fall. In this event:
  - The AdCom recommends IIP consider allowing Phase II awards that go unfunded due to budget constraints a case-by-case opportunity to resubmit in the future.
  - That the AdCom, and the small business community, can voice its concerns to their elected representatives.

#### Industrial Innovation Leadership & Partnership: Innovation Corps Program

The AdCom applauds Errol Arkilic and Rathindra DasGupta for the creation of the new Innovation Corps (iCorps) Program. This program has the opportunity to greatly strengthen our nation's Innovation Ecosystem, and we look forward to hearing additional updates at our next meeting.

The AdCom endorses that the iCorps program spans the entire NSF, including funding and support from other Directorates.

The AdCom recommends the iCorps program continue to encourage students, post-docs, or recent graduates to play the role of the “entrepreneur” on the three-person iCorps team. In addition, the AdCom suggests that the iCorps solicitation be revised to also allow qualified teams to apply to iCorps with a non-student in this “entrepreneur” role, as it will broaden participation of potential iCorps teams in the future.

Regarding the “mentor” role: Given the importance of the mentor role, the AdCom recommends flexibility be maintained for teams to change their mentor during their participation in the six month iCorps program. The AdCom also recommends iCorps develop mechanisms to assemble lists of interested and qualified mentors for consideration by potential/active iCorps teams, including potential mentors from underrepresented groups (including women).

#### Globally Competitive Preeminent Workforce: Broadening Participating

The AdCom thanks Malathi Srivatsan for her progress to broaden participation of underrepresented groups.

In particular, the AdCom:

- Applauds Malathi and IIP for collecting and presenting data tracking participation of underrepresented groups.
- Agrees with Malathi’s conclusion that award rates for underrepresented groups are comparable with other groups.
- Endorses her recommendation that IIP focus on increasing the number of Phase I proposals submitted from underrepresented groups.
- Recommends that IIP continue Malathi’s study of the best interventions IIP should pursue in the future to increase the number of Phase I proposals submitted from underrepresented groups.
- Recommends that in the future IIP compare statistics and best practices already developed within other activities within NSF, e.g., ADVANCE program.

The AdCom looks forward to future progress in this area and endorses IIP’s plans to

- hire an AAAS Fellow to continue Malathi’s progress on this topic, and
- continue to build partnerships for outreach to underrepresented groups
- continue and expand recent activities to form informal groups within the grantee communities, e.g., the group of women organized at this week’s Phase II grantee’s conference, or the suggestion of creating LinkedIn groups for outreach to underrepresented groups.

We continue to volunteer as needed to support these activities and will continue our Subcommittee on Outreach Activities to Broaden Participation. The SubCommittee includes:

Patrick Brown  
Karen Kerr  
Tom Knight

Globally Competitive Preeminent Workforce: SBA Diversity Working Group

The AdCom thanks Juan Figueroa for his work with the Small Business Administration (SBA) Diversity Working Group, and encourages further collaboration between IIP, the SBA, and other SBIR agencies to broaden participation.

Impacts Assessment: NSF Strategic Performance Measure

The AdCom supports IIP's efforts to measure partnerships as an element of the NSF Strategic Performance Measurement initiative.

AdCom recommends IIP more clearly define partnership types and the data collection methodology to ensure accuracy.

AdCom recommends IIP ask grantees for their partnering activities, instead of attempting to glean partnering activities from grantee proposals and reports. Even though response rates might not be as high as George Vermont's Phase II phone calls, and even though this will require some small amount of time for grantees to prepare, this approach will improve the accuracy of our outcomes, and will also motivate grantees to pursue additional partnerships.

These requests could be patterned after recent requests sent to grantees by the National Academy of Engineering, and the resulting data should be included in the Division Information Management System (DIMS). IIP might also collaborate with NIST to accelerate the process and leverage best practices.

Impacts Assessment: Engineering Directorate (ENG) Assessment & Implementation Working Group

The AdCom acknowledges the hiring of Alexandria Medino-Borja, a full-time Staff Associate resource within the Engineering Directorate focused on assessment. We invite her to attend an AdCom meeting in the future so that we can learn her plans and how IIP might support them.

Impacts Assessment: Division Information Management System

The AdCom looks forward to discussing the Division Information Management System (DIMS) at our next meeting. This tool provides great assessment opportunities within IIP and within NSF.

The AdCom continues to volunteer to assist with these efforts. Members of the Subcommittee on Assessment include:

- Karthik Ramani
- E. Jennings Taylor
- Al Johnson
- Tom Knight
- Dick Paul
- David Spencer

The AdCom endorses IIP's plans to hire an AAAS Fellow to continue work on this topic within IIP.

Impacts Assessment: Phase II Award Outcomes

The AdCom members thank George Vermont for his continuing success collecting assessment data from Phase II grantees, and appreciate his responsiveness to our prior recommendations.

The AdCom recommends IIP investigate if grantees who received Phase IB supplements have greater commercialization success.

Increased Commercialization: Patent & Trade

The AdCom endorses IIP's pilot program with the US Patent & Trademark Office (USPTO) to streamline the patent process for NSF SBIR grantees, and looks forward to an update at our next meeting.

Increased Commercialization: Innovation Accelerator & Matchmaker

The AdCom appreciates hearing the update on the Innovation Accelerator & Matchmaker.

The AdCom acknowledges the great progress made in launching this valuable commercialization assistance for our Phase 2 grantees. The program has shown remarkable value to roughly 25% of our Phase 2 grantees portfolio to date, and the ten case studies presented illustrate excellent examples of how the Innovation Accelerator, and its improved Matchmaker assistance, is providing tremendous support to those grantees who opt-in to the Innovation Accelerator program.

Our feedback on this topic includes strong support for the intent and initial results, but serious reservations and concerns including governance and transparency. The AdCom recommends IIP perform an internal assessment on the Innovation Accelerator and report back at our next meeting.

We volunteer as needed to support these activities. The following Subcommittee on Innovation Accelerator is available:

Mark Clevey  
Trish Costello (Chair)  
Karen Kerr  
Tom Knight  
Karthik Ramani  
David Spencer  
John Tao

Operational Excellence: GAO Report

The AdCom applauds IIP for the results seen in the recent Government Accountability Office (GAO) report on the top five SBIR-granting agencies. The GAO's findings accurately reflect IIP's Operational Excellence as a leading federal SBIR agency.

Operational Excellence: "Office Hours" with Program Managers

The AdCom appreciates the opportunity to spend time meeting with IIP Program Managers. These conversations were a highlight of the meeting, and confirm yet again the strength, dedication, and tremendous contributions from these critical members of IIP.

We encourage similar conversations with Program Managers in future meetings.

#### Feedback on Travel by Program Managers

The AdCom enthusiastically endorses recent mechanisms that provide Program Managers a small budget for travel expenses. We expect these limited funds will prove exceptionally valuable for supporting IIP's mission and grantees, and encourage IIP to leverage this travel budget, and expand this travel budget, as necessary.

#### Feedback on Collaboration with the Small Business Administration's Chief Counsel for Advocacy

The AdCom appreciates the opportunity earlier this year to collaborate with the office of Winslow Sargeant, Chief Counsel for Advocacy, Small Business Administration. Members of the AdCom provided input on upcoming SBA research, and the AdCom volunteers to collaborate on future projects, as needed.

### **FUTURE MEETING**

The next AdCom meeting will occur in Baltimore at NSF starting Wed May 9, 2012 at noon and ending Thursday, May 10, at noon.

To further improve our AdCom effectiveness, we request that future meetings have the bare minimum PowerPoint slides, a schedule with sufficient time for interactive sessions similar to the "office hours", and that IIP send the agenda and reading materials to all AdCom members in advance. We also endorse IIP's suggestion that the AdCom utilize on-line resources such as a SharePoint site dedicated to AdCom materials and collaboration.

#### Proposed Agenda:

- Operating Summary, including IIP achievements and challenges since October 2011.
- Update on Five IIP strategic goals:
  - a. Increased Commercialization
    - i. Innovation Accelerator: (See discussion above.)
    - ii. Update on pilot program with USPTO
  - b. Industrial Innovation Leadership & Partnership
    - i. Update on Budget and Reauthorization
    - ii. Innovation Corps: update and progress
    - iii. Overview (introduction/status/outcomes) of IUCRC, PFI, GOALI, i6, AIR.
  - c. Globally Competitive Preeminent Workforce
    - i. Outreach Activities to Broaden Participation. Please present updated statistics.
  - d. Operational Excellence
    - i. "Office Hours" with Program Managers on a topic preselected to be of particular interest to the Program Managers.
  - e. Impacts Assessment.
    - i. Impacts Assessment: Please present a demonstration of DIMS and an update on progress and plans.

- ii. ENG Assessment & Implementation Working Group: We invite Alexandria Medino-Borja to present if possible.
- Deliberations and Report Out