

**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

30 October 2008

## 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 29-30, 2008 in Arlington, VA at NSF Headquarters.

Advisory Committee members in attendance included:

Patrick Brown  
Mark Clevey  
Trish Costello  
Albert Johnson  
Karen Kerr  
Tom Knight (Chairman)  
Angus Livingstone  
Richard Paul  
Penny K. Pickett  
Karthik Ramani  
Winslow Sargeant  
David B. Spencer  
John Tao  
E. Jennings Taylor  
Carol Wideman

Advisory Committee members absent:

None

NSF representatives attending all or part of the meeting included:

Michael Reischman, Acting Assistant Director for Engineering  
Kesh Narayanan, Division Director, Industrial Innovation and Partnerships (IIP)  
Joseph Hennessey, Senior Advisor, IIP  
Fae Korsmo, Staff Associate, Office of the Director, Integrative Activities  
Cheryl Albus, SBIR/STTR Program Director, IIP  
Errol Arkilic, SBIR/STTR Program Director, IIP  
Gregory Baxter, SBIR/STTR Program Director, IIP  
Juan Figueroa, SBIR/STTR Program Director, IIP  
William (Bill) Haines, SBIR/STTR Program Director, IIP  
Cynthia Znati, SBIR/STTR Program Director, IIP  
James Rudd, SBIR/STTR Expert  
George Vermont, SBIR/STTR Expert  
Rathindra (Babu) DasGupta, Lead I/UCRC Program Director  
Glenn Larsen, I/UCRC Program Director  
James Brown, AAAS Fellow  
Denise Hundley, IIP Division Secretary  
Staci Jenkins, IIP Program and Technology Specialist

**AGENDA**

The agenda for the meeting is included below.

**Wednesday, October 29, 2008**

8:00 a.m.	Sign-in	
8:30: a.m.	Welcome & Introductions	Kesh Narayanan Thomas Knight
8:45 a.m.	Discussion & Approval of April AdCom Meeting Minutes	Thomas Knight
9:00 a.m.	AdCom Member Introductions	AdCom Members
10:00 a.m.	Break	
10:15 a.m.	Cluster Presentations	Cluster Leaders
12:00 Noon	Working Lunch	
1:00 p.m.	University/Industry Partnership	Kesh Narayanan
2:00 p.m.	Commercialization Report	George Vermont
2:45 p.m.	Matchmaker Report	James Rudd
3:15 p.m.	NSF Broadening Participation	Fae Korsmo
3:45 p.m.	AdCom Subcommittee on Outreach Activities	Outreach Subcommittee, with Josh Chamot & Cecile Gonzalez
5:00 p.m.	Phase II Commercialization Assistance Program	Errol Arkilic
6:00 p.m.	Dinner at the Caribbean Breeze Restaurant	

**Thursday, October 30, 2008**

8:15 a.m.	University Industry Partnership	Al Johnson
8:45 a.m.	AC/GPA Report to NSB	David Spencer
9:15 a.m.	AdCom Deliberations	AdCom Members
11:00 a.m.	Report out to NSF	AdCom Members, Michael Reischman
12:00 Noon	Adjourn	

## **COMMENTS and FEEDBACK**

The AdComm considered and provided feedback on the following discussion items from the meeting agenda.

### Discussion and Approval of Minutes from Prior Meeting

After a brief discussion, the AdComm approved the minutes from the previous meeting held in April 2008.

### Cluster Presentations

The AdComm felt the example grantee projects presented illustrated success stories well, and illustrate the positive impact being made by the SBIR/STTR program. However, these anecdotal examples should be supplemented with a more holistic estimation of the broader impact/ROI of the SBIR/STTR program, as discussed below.

When examples are presented, the AdComm recommends consistently using the new quad-chart format from Software & Systems that includes Impact, Novelty, Lineage, and Company Mission.

The AdComm recommends SBIR/STTR investigate ways to highlight green technology/clean technology/energy technology as a potential cluster area. Leading indicators of industry and venture capital investments indicate this is the fastest growing area of research needs. A focus on these areas should be considered strategically and organizationally as a cluster.

The AdComm recommends the SBIR/STTR Program continue to expand the ability of the Program Managers to provide commercialization assistance in areas such as:

- The utilization of new outside partners/contractors to provide Phase II commercialization assistance, as discussed below under “Commercialization Assistance Program”
- The continued use of outside contractors to handle administrative activities (such as forming review panels) that would otherwise consume Program Manager time
- The use of third-party professional/social networking tools (such as LinkedIn) to expand the effectiveness of the Program Managers’ commercialization assistance. We strongly discourage building internal tools and would instead recommend using existing third-party tools.
- The continued study of ways to tailor the commercialization assistance provided to grantees based on (a) the cluster area and/or (b) the readiness/capabilities of the grantee’s management team.

### University/Industry Partnerships (Report from Kesh Narayanan)

The AdComm recommends the Program plan a joint IIP Conference in 2010 to combine the activities of SBIR/STTR, I/UCRC, PFI, and other IIP programs.

The AdComm endorses the use of supplements to support the membership of active and “graduated” grantees in both active and “graduated” I/UCRC centers.

### Commercialization Report

The AdComm found the outcome measures from George Vermont's phone surveys informative, and encourages the continuation of the survey of commercialization outcomes.

The AdComm support the efforts of James Brown and looks forward to hearing the results. We suggest he (a) focus his study on how to better track commercialization outcomes and the broader impact/ROI of SBIR/STTR, as discussed below, and (b) utilize the AdComm members as resources to support his study.

In addition, the AdComm recommends that additional work be initiated to convert existing data to estimate the Broader Impact/Return on Investment (ROI) of SBIR/STTR. This is a national need and the AdComm recommends IIP take a leading role in quantifying the broader impact of NSF SBIR/STTR funding in terms of innovation, job creation and wealth creation. We would like to discuss this in detail our next meeting, as discussed below.

### Matchmaker Report

The AdComm commends the NSF's goals to match grantees with potential commercialization partners and/or investors.

The Committee appreciated the presentation by James Rudd on MatchMaker. Rather than pursue tactical changes to MatchMaker that might enhance its utility and effectiveness at the margin, the Committee discussed a more strategic perspective of commercialization in today's environment and the role that Matchmaker might play in that environment. In that regard, the Committee recognized that the landscape has changed rather significantly in the recent past regarding industry's collaboration with external technology providers, which includes small businesses and emerging small businesses that are the focus of the SBIR program. More specifically, industry R&D organizations are aggressively pursuing open innovation as evidenced by the following:

- Many industry R&D organizations have re-organized to promote open innovation, and have incentivized their workforces to seek external technologies from a wide variety of sources
- Third-party for-profit providers now exist that provide linkages between industry technology needs and external technologies and solutions. Two examples are Nine Sigma and InnoCentive.
- Likewise, professional and social networks exist on a widely proliferated basis that could be exploited to provide linkages between those entities with technology needs and those with potential solutions. Two examples are FaceBook and Linked-In.

In the above strategic context, the Committee recommends that the NSF SBIR program undertake a top-down evaluation of the role of MatchMaker in the current open innovation environment. Some questions that might be asked include the following:

- Are there "external alternatives" to augment, enhance, or possibly even replace the MatchMaker?

- After answering the first question, if there is still a role for MatchMaker, what might it be, and should adjustments be made to the MatchMaker tool and process so as to derive maximum synergy with external providers and social networking tools?

What is the role of MatchMaker vis-à-vis other NSF internal commercialization initiatives such as the Phase II Commercialization Assistance Program, and how can maximum synergy be achieved between the entire family of NSF commercialization assistance programs, as well as between that family and the external providers, tools, and processes than now exist?

### NSF Broadening Participation Report

The AdComm commends the NSF's goals to broaden participation. We want to continue to work with the NSF Directorate to find ways to broaden participation in the SBIR/STTR program.

### AdCom Subcommittee on Outreach Activities

The AdComm endorses the goals of increasing the participation of women & underrepresented minorities in NSF SBIR/STTR so they are in line with other groups. The tracking statistics showed disappointingly low participation rates and award rates for Phase I proposals from these communities.

The AdComm endorses the on-going work of its Subcommittee on Outreach Activities to increase the number of quality Phase I proposals from these communities. Several suggestions were made to strengthen these activities:

- Expand scope to include citizens with disabilities
- Normalize participation statistics using data from other NSF studies
- Continue to refine the layout & text on the new Outreach web page.
- Do not use the term "disadvantaged". Say "underrepresented" instead. While complying with the SBA guidelines identifying "disadvantaged," the AdCom prefers "underrepresented" as the committee's working term.
- Expand writing and publication of grantee "success stories."

The AdComm endorses the new II-M mentoring supplement.

The AdComm endorses and thanks Josh Chamot & Cecile Gonzalez for their support and suggestions and for helping us "spread the word" about SBIR/STTR to women and underrepresented minorities.

The AdComm will continue its subcommittee on Outreach Activities. The Subcommittee includes:

Cheryl Albus  
Juan Figueroa  
Karen Kerr  
Tom Knight  
Penny Pickett (Chair)  
Carol Wideman (new member)

### Phase II Commercialization Assistance Program

The AdComm endorses the creation of the Phase II Commercialization Assistance Program, and looks forward to hearing more details as they become available.

The AdComm formed a subcommittee to provide additional input to the SBIR/STTR Program on this topic. Numerous members volunteered. The Subcommittee will include:

Mark Clevey  
Trish Costello  
Tom Knight (Chair)  
Angus Livingstone  
Richard Paul

University Industry Program (Report from Al Johnson)

Al Johnson presented on this topic, focusing on informing our new members on activities in this area.

AC/GPA Report to NSB

Dave Spencer presented on this topic, focusing on informing our new members on activities in this area.

Additional AdComm Recommendations for our Next Meeting(s)

The AdComm requests that handout materials be sent via email one week prior to each future meeting, if possible. [Adcomm members can read the materials prior to the meeting and the meeting can be more focused on providing input and discussing the strategy as opposed to getting into the details of “how-to”.](#)

The AdComm requests that the agenda for future meetings include 1 hour or more at the end of each day for AdComm deliberations.

The AdComm requests the following themes/agenda items for our next meeting(s):

1. The Broader Impact/ROI of the SBIR/STTR Program:
  - a. How can we better communicate to Congress and the public the measurable connection between NSF SBIR/STTR funding and the resulting transformational discoveries, innovation, and the large and measurable commercialization outcomes such job creation and wealth creation?
  - b. How can we move beyond anecdotal “highlight” examples to a more holistic estimation of the broader impact/ROI of the SBIR/STTR program using data that is already available?
  - c. How can we incorporate the study done recently by Dr. Chuck Wessner and the National Academy of Science to quantify the commercialization outcomes and SBIR/STTR Broader Impact/ROI?
  - d. How do we ensure that supplemental grants best support the SBIR/STTR Program mission?
2. Commercialization Assistance for Grantees:
  - a. How can we best empower the Program Managers with an expanding network of public/private partners that grantees can utilize to maximize their commercialization success?

- b. How can we empower Program Managers to better emphasize and measure commercialization outcomes, deemphasizing internal performance metrics such as the speed of proposal review?
  - c. How can SBIR/STTR grantees best partner with I/UCRC to improve commercialization success of both programs?
  - d. How to best improve the MatchMaker Program in light of the changing landscape and numerous third-party organizations serving this area? Can it track and improve the number of successful matches made as a result of the Matchmaker Program? Can it provide data from companies and investors to identify market pull activities for topic generation?
3. Broadening Participation in the SBIR/STTR Program:
- a. How can we increase the participation of women, underrepresented minorities, and citizens with disabilities in the SBIR/STTR Program?
  - b. How can we redesign/realign the SBIR/STTR Program to collaborate with other Directorates within NSF or other Agencies such as the Department of Energy (DOE)?

## **FUTURE MEETING**

The next AdComm meeting will occur in Baltimore during the week of May 18, 2009, in conjunction with the next Grantees Conference. The exact day of the 1 day meeting will be determined as soon as possible.

### Proposed Agenda:

- Update from the SubCommittee on Outreach
- Update from the SubCommittee on Commercialization Assistance
- Update on Phase II Commercialization Assistance Program
- Measuring the Broader Impact/ROI of the SBIR/STTR Program (see notes above)
- Partnering with I/UCRC to Improve Grantee Commercialization Outcomes (see notes above)
- Strategic Options to Improve MatchMaker (see notes above)
- Deliberations and Report Out