

**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

22-23 October 2007

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 22-23, 2007 in Arlington, VA. Due to an electric power problem at the NSF building, the AdCom met at the offices of the Industrial Research Institute (IRI).

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Advisory Committee members in attendance were:

Mr. Albert Johnson
Dr. Karen Kerr
Mr. Tom Knight
Mr. Richard Paul
Ms. Penny K. Pickett
Dr. Karthik Ramani
Dr. David B. Spencer
Dr. E. Jennings Taylor (Chairman)
Dr. Carole Teolis
Ms. Meg Wilson

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Advisory Committee members absent: Mr. Sudhir Bhagwan, Dr. Chris Busch, Ms. Trish Costello, Dr. Edward Getty, Dr. Patti Greene, Dr. Lizette Velazquez...

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NSF representatives attending all or part of the meeting included:

Dr. Kesh Narayanan, Director, Industrial Innovation and Partnerships (IIP)
Dr. Joseph Hennessey, Senior Advisor, Industrial Innovation and Partnerships
Tom Allnutt, SBIR/STTR Program Director, IIP
Errol Arkilic, SBIR/STTR Program Director, IIP
Babu DasGupta, SBIR/STTR Program Director, IIP
Bill Haines, SBIR/STTR Program Director, IIP
Bob Norwood, Expert, IIP
Patrick Ravenera, Administrative Officer, IIP

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Visitors

Mr. Mike Weingarten, National Cancer Institute, NIH

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NSF Support Staff?
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NSF Triumph Technologies SBIR/STTR
Project Team?
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AGENDA

The agenda for the meeting is included below.

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Monday - October 22

7:30 a.m.	Sign-In	
8:00 a.m.	Welcome & Introductions	Kesh Narayanan E. Jennings Taylor
8:30 a.m.	Discussion & Approval of May AdCom Meeting	E. Jennings Taylor
8:45 a.m.	Feedback from Phase II Grantees Conference	Kesh Narayanan Joe Hennessey
9:15 a.m.	Feedback from the University/ Industry Partnership ENG Sub- Committee Meeting	E. Jennings Taylor
9:45 a.m.	Break	
10:00 a.m.	COV Highlights	Joe Hennessey
10:30 a.m.	Commercialization Outcomes	George Vermont
11:00 a.m.	NRC Report Highlights	Kesh Narayanan
11:30 a.m.	NRC Study Possibilities	Kesh Narayanan Joe Hennessey
12:00 p.m.	Working Lunch & Discussion	
1:30 p.m.	Transformational Technology	David Spencer Tom Allnutt/ Babu DasGupta
2:00 p.m.	Diversity	Celeste Rohlfing MPS/Chemistry Division Mary Judas ENG/OAD
3:30 p.m.	Break	
3:45 p.m.	General Discussion	
6:00 p.m.	Dinner - Ted's Montana Grill	

Tuesday - October 23

8:00 a.m.	Report Preparation
10:00 a.m.	Break
10:30 a.m.	Feedback
12:00 p.m.	Adjourn

COMMENTS and FEEDBACK

The Adcom considered and provided feedback on the following four discussion items from the meeting agenda. Formatted

Phase II Grantees Conference

The quality of the commercialization education at NSF is one of the key differentiating factors between the NSF SBIR program and that of the other agencies. The phase II grantees workshop is a very beneficial part of phase II program in terms of commercialization education and mentoring. Because this is the one yearly meeting with grantees, the workshop serves many objectives of the program. The ADCOM felt that NSF should spend some time thinking what the most important objectives of the meeting are in order to insure that these key objectives are met. Below is a list of comments.

1. It was a general consensus of the ADCOM (and it was reflected in feedback from grantees in Kansas) that the Poster session in the current format has lost its usefulness now that it is not integrated with DMII. An idea is to replace the poster session with some other type of networking event.
2. The ADCOM thought that the educational element of including VC's at the grantee meeting is very good with the caveat that the meeting should not be presented as a forum for deal making.
3. The ADCOM feels that new grantees will benefit from attending the phase II grantees workshop from commercialization and mentoring point of view as early as possible. The required grantee presentations should be aligned to the stage of project. For example, new grantees may present an elevator pitch of their proposed effort while later stage grantees may present more details of their results.
4. Because of the diverse levels of grantees attending the conference, the ADCOM suggests programs focused on the needs/interests of seasoned grantees as well as some introductory programs for newer grantees.
5. The ADCOM endorses the plenary sessions and believes they are beneficial to both new and old grantees
6. The ADCOM suggests adding more time to meet program managers individually as well as in group/social venues. The value of the program managers in mentoring grantees is a key and unique attribute of the NSF SBIR program. Because of time constraints imposed at the grantees meeting, time with program managers could also be accomplished by requiring grantees to travel to NSF.

Engineering ADCOM University-Industry Partnering Subcommittee

The ADCOM endorsed the recommendations of the Engineering Advisory Subcommittee on University-Industry Partnerships and advocated that the Engineering ADCOM adopt them. Additionally, the ADCOM encouraged the other divisions and directorates within the Agency to adopt similar mechanisms for promoting university-industry collaboration. The ADCOM called for greater participation of small and emerging businesses in I/UCRC and UIDP and encouraged the participation of SBIR/STTR grantees, as it would allow the NSF to leverage its SBIR/STTR investments across the entire Agency.

Commercialization Outcomes

The ADCOM commends the SBIR/STTR program and in particular George Vermont regarding tracking outcomes through his interview process at years 3, 5 and 8. The interview process provides a wealth of useful information and some fascinating correlation of commercial success, such as the participation of university partners. In addition, the NRC study gives us valuable outcomes data and perspectives. The ADCOM is absorbing the implications from their 400 page tome.

The ADCOM endorses the metric gathering process and suggests that the efforts be continued and improved.

The ADCOM would like to improve its' understanding of SBIR/STTR outcomes and to learn from the data already collected. The ADCOM suggests that the SBIR/STTR program explore the feasibility of making the data available on an open source basis so that researchers in the field of entrepreneurship and technology transfer can use it and elaborate on it through their own research.

Diversity

The ADCOM wholly agrees with the goal for greater diversity and outreach to underrepresented groups, as has been expressed by the NSF and the Engineering Directorate. The commitment to those goals is strong enough for the ADCOM to form an outreach subcommittee to address the role of the SBIR/STTR program in this issue. The chair of that group has encountered some challenges, and another member has stepped forward to temporarily head the group so that no additional time will be lost in the next few months. Rather than make recommendations now with limited time and information, the diversity sub-committee will take the following steps and report back at the next ADCOM meeting.

1. Take a more in-depth look at the BRIGE solicitation and understand its origin and purposes;
2. Look more closely at the statistical reports on underserved submissions and awards as presented in the 2006 Committee of Visitors (COV) Report and those numbers presented in the NRC study;
3. Evaluate and understand where emphasis should be placed - educational efforts, marketing of the programs, changes to the language of proposals, other topics;

4. Finally, submit a draft plan for expanding minority and women's outreach focusing on partnerships and means to leverage relationships and contacts for the SBIR/STTR Program.

FUTURE MEETING

The next scheduled meeting for the ADCOM is in conjunction with the phase II grantees workshop in Baltimore, MD April 14 to 18, 2008.

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4.0. COMMENTS AND RECOMMENDATIONS¶
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The items below are the specific recommendations of the AdCom:¶
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4.1 SBIR/STTR COV Report¶
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Program Impact¶
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Regarding COV recommendation 2, The AdCom recommends that the SBIR/STTR maintain sufficient (e.g. 0.2) FTEs annually to focus on post grant interviews with awardees as a means of monitoring program outcomes and success in meeting its mandate. Furthermore, the Committee recommends that an independent research organization be retained to assist the IIP Division/ENG Directorate in analysing the outcomes survey data and in enhancing the survey tool to better capture key success metrics resulting from NSF SBIR/STTR funding including revenues generated and jobs created as well as total leverage of NSF dollars obtained as a result of additional investment by financial and strategic investors.¶
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Regarding COV recommendation 11, the AdCom recommends that an analysis of the awards portfolio be conducted to assess the level of technical and business risk encompassed and to determine if sufficient high risk high impact proposals addressing new technologies in new markets are represented. The Committee believes that the SBIR/STTR program should have a focus on funding small business in the “chasm” between government support for innovative research and private sector financing of proven technologies in existing markets.¶
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Regarding COV recommendation 7, the AdCom endorses the COV finding that technology commercialization in and of itself is one of the broader societal benefits resulting from the SBIR/STTR program. The Committee further believes, however, that the SBIR/STTR program plays a vital role focusing attention on areas of national priority (i.e. manufacturing, alternative energy/clean tech), in education, increasing opportunities for women and minorities, and in seeding businesses in underdeveloped regions in the US.¶
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Panels/Panel Training¶
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The AdCom adopts and endorses the recommendations Nos. 4,5,7,8 and 9 as stated by the COV.¶
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Grantee Support¶
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4.0 COMMENTS AND RECOMMENDATIONS

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4.1 SBIR/STTR COV Report

Program Impact

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Panels/Panel Training

The AdCom adopts and endorses the recommendations Nos. 4,5,7,8 and 9 as stated by the COV.

Grantee Support

Regarding COV recommendation 1, the AdCom believes that a \$50K budget for travel to oversee over \$100M in annual awards is insufficient. The Committee highly recommends that sufficient funds (e.g. \$250K) be allocated annually to enable the staff to monitor and provide assistance to grant recipients as well as to develop networks to bring more high impact companies and companies from rural and under represented groups into the program.

Regarding COV recommendation 10, the AdCom recommends that the commercialization support program be expanded to allow for differentiated assistance as a function of need. The SBIR/STTR program might consider awarding first time awardees commercialization assistance of > \$4K in assistance on a per award basis and consider allowing for more commercialization assistance contractors to better address the geographic dispersion of the grantees.

Internal Program Management

The AdCom recognizes the development of process/procedure documentation/standardization is critical to the effective management of the SBIR/STTR program and is not to be underestimated.

The AdCom adopts recommendations Nos. 3 and 6 as stated by the COV. The AdCom suggests that recommendation No. 12 be broadened to include more than just STTR by encouraging collaboration between small business, industry and universities in order to best leverage NSF investment. Note the important distinction that the AdCom addresses between small business and industry, i.e. large business. This should include education opportunities in technology management for universities.

4.2 Outreach Activities

The AdCom commends the IIP for initiating the outreach studies, both internal and external. The AdCom believes that the main challenge in increasing underrepresented group participation in SBIR/STTR is increasing the proposal submission rate. Consequently, the AdCom suggests that the IIP undertake activities to educate underrepresented groups in SBIR/STTR opportunities.

The AdCom formed a subcommittee to address outreach activities to underrepresented businesses in general and women owned businesses in particular. The committee will be chaired by Trish Costello with additional members of Karen Kerr, Tom Knight, Penny Picket and Patty Greene.