Minutes (Spring '15)

NATIONAL SCIENCE FOUNDATION

National Science Foundation, Arlington, VA

Engineering Directorate Division of Industrial Innovation and Partnerships

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

June 3-4, 2015

1.0 INTRODUCTION

The National Science Foundation (NSF) Engineering Advisory Committee's Subcommittee for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs (AdCom) met June 3-4 in Atlanta, Georgia, as part of the Phase 2 Grantees Conference.

AdCom members in attendance included:

William Lockwood Benet

Annette Finsterbusch

Arlene Garrison

Karen Kerr

Tom Knight (Chair)

Eugene Krentsel

Angus Livingstone

Richard Paul

Susan Preston

Karthik Ramani

Skip Rung

Ann Savoca

David Spencer

AdCom members absent:

Susan Butts

Trish Costello

NSF IIP representatives attending all or part of the meeting included:

Grace Wang, Deputy Assistant Director, Engineering Directorate

Barry Johnson, Division Director, IIP

Graciela Narcho, Deputy Division Director, IIP

Joseph Hennessey, Senior Advisor, IIP

Prakash Balan, SBIR/STTR Program Director, IIP

Steven Konsek, SBIR/STTR Program Director, IIP

Glenn Larsen, SBIR/STTR Program Director, IIP

Rajesh Mehta, SBIR/STTR Program Director, IIP

Ben Schrag, SBIR/STTR Program Director, IIP

Jesus Soriano, SBIR/STTR Program Director, IIP

Murali Nair, SBIR/STTR Program Director, IIP

George Vermont, Senior Expert, IIP

2.0 AGENDA

	Wednesday, June 3, 2015 Atlanta Marriott Marquis	
2:00 p.m.	**Welcome and Introductions – Barry Johnson, Division Director, IIP** *(Room: M301)*	
	Review Agenda and Approve Spring 2014 Meeting Minutes – Tom Knight, Chair	
2:30 p.m.	**SBIR/STTR Subcommittee Charter – Barry Johnson and Tom Knight**	
3:00 p.m.	**Presentation on SBIR/STTR Assessment Results – George Vermont**	
3:30 p.m.	**Working Group on Assessment – Skip Rung (Chair), Gracie Narcho (IIP)**	
4:00 p.m.	**Working Group on Broadening Participation – Ann Savoca (Chair), Gracie Narcho (IIP)**	
4:30 p.m.	**Break** *(Room: M302)*	
4:45 p.m.	*Break-out Discussion Sessions with Program Directors*	
	Topic: SBIR/STTR Technical Topic Areas Room: M301	**Topic: SBIR/STTR Program Outreach Room: M302**
5:30 p.m.	**Report out from Break-out Sessions** *(Room: M301)*	
6:00 p.m.	**Adjourn for Dinner**	
6:30 p.m.	**Dinner – White Oak Kitchen and Cocktails, 270 Peachtree Street NE, Atlanta, GA 30303**	

Thursday, June 4, 2015 Atlanta Marriott Marquis	
7:30 a.m.	**Breakfast Buffet** *(Room: M302)*
8:30 a.m.	**Introduction and Overview of the Day – Tom Knight, Chair** *(Room: M301)*
8:45 a.m.	**Working Group on Entrepreneurial Education – Susan Preston (Chair), Barry Johnson (IIP)**
9:15 a.m.	**Working Group on Deal Flow – Annette Finsterbusch (Chair), Barry Johnson (IIP)**
9:45 a.m.	**IIP Question and Answer Session**
10:30 a.m.	**Break** *(Room: M302)*
11:00 a.m.	**SBIR/STTR Subcommittee Deliberations**
12:00 p.m.	**Lunch** *(Room: M302)*
1:00 p.m.	**SBIR/STTR Subcommittee Recommendations to NSF**
2:00 p.m.	**Adjourn**

3.0 Approval of Minutes from Last Meeting

After a brief discussion the **AdCom** approved the minutes from the prior meeting held in October 2014.

4.0 COMMENTS and FEEDBACK

Organizational Changes & Comments

The **AdCom** thanks Joseph Hennessey for his 19 years as Senior Advisor, his myriad contributions and his exceptional stewardship of the NSF SBIR/STTR program. We congratulate him on his upcoming retirement. We are looking forward to continuing to work with Joe in his new role as Senior Expert.

The **AdCom** thanks George Vermont for his role as Senior Expert, and his exceptional contributions assessing the commercial success of our Phase 2 grantees, and we congratulate him on his upcoming retirement.

The **AdCom** congratulates Graciela Narcho on her promotion to Deputy Division Director. We are looking forward to continuing our work with Gracie, in her new, expanded role.

The **AdCom** welcomes Barry Johnson as the new Division Director, IIP. We are impressed with how quickly he is coming up to speed in his new role, we appreciate his leadership preparing for and participating in this meeting, and we look forward to working alongside him in the coming years.

Representative from our AdCom to the Engineering Directorate Advisory Committee

The **AdCom** thanks Ann Savoca and David Spencer for serving as our liaisons to the Engineering Directorate Advisory Committee.

Replacing them as our liaison will be Susan Butts, with a three-year term starting in the Fall of 2015.

SBIR/STTR Subcommittee Charter

The **AdCom** discussed the draft Charter, as distributed by Barry Johnson. The Appendix to these minutes includes the draft Charter, along with the **AdCom's** recommended revisions.

Assessment Working Group Report Out: June 4, 2015

The **AdCom** appreciates the presentations by George Vermont and the wealth of assessment data he has collected over the past ten years.

George Vermont's telephone survey process and accumulated data are a unique, valuable and irreplaceable resource. It is very gratifying that Joe Hennessey will be picking up this follow-up and data collection work in the wake of George's retirement. The use of such a top-quality resource for this speaks loudly about the value IIP assigns to this effort.

AdCom recommends IIP invest in additional reporting and analytics based on this data, including linking them to public/3rd party data. There remain large opportunities for extracting insights relevant to NSF SBIR/STTR's crystallizing vision as the "U.S. Seed Fund". For example the larger dollar impacts (revenue, corporate partnership funding, acquisition or IPO exits) can be isolated and correlated with other parameters to inform funding decisions that will be more likely to result in future economic impact.

It is also gratifying that IIP has hired a AAAS Fellow to spend full-time on assessment activities, which should include extracting value from existing data as described above as well as assisting IIP staff with a top-down look at assessment that reflects the "US Seed Fund" vision and also appropriately informs and influences key "stakeholders" such as the larger NSF (demonstrating impact of the public investment in S&T research), sources of new deal flow and sources of investment in and partnership with grantee companies. Another "pilot" project suitable for the AAAS Fellow would be a combined socio-economic impact analysis of a selected subset or subsets of grantee companies.

Finally, and consistent with the recommendation from the Fall 2014 **AdCom** meeting, a clear and easily communicated "logic model", aligned with broader efforts underway within the Foundation and the federal government, that connects overall program purpose and vision with assessment data collection, reporting and analysis is needed. Establishing this in a form that can be carried out on an ongoing basis by permanent IIP staff or experienced/knowledgeable contractors should also be a key focus of the AAAS Fellow.

Appendix One shows the members of this working group.

Entrepreneurial Education Working Group

The **AdCom** appreciates the opportunity to attend the Phase 2 Grantees meeting including the pilot of the new entrepreneurial educational program. Several **AdCom** members attended or spoke at various sessions and we thank them for their participation. We also express deep thanks to staff, particularly Ruth Shuman and Gracie Narcho for their extensive efforts in pulling together a successful program. Anecdotal comments were quite positive. Therefore, the program appears to be a success.

The **AdCom** recommends the following future activities to further strengthen entrepreneurial education:

1. Knowledge manager: We have discussed on occasion over the past few years having someone focused on coalescing and making available a wealth of educational materials on multiple topics from entrepreneurial basics to sector specific tools to regional support programs such as accelerators, incubators, mentoring programs, business competitions, etc. The content can be derived from our own programs (e.g., video-taping our Phase II grant training program), outside resources that are considered gold standard quality, YouTube videos,

etc. We would like to see either an internal hire or a contractor retained to create an extensive database of materials and then maintain and expand over time.

2. <u>Contractor to structure, organize and manage program:</u> (particularly important since we will have essentially two separate programs running simultaneously). We need to remove the heavy burden of creating and managing a large program from the shoulders of a program director and other managers. With the positive feedback on this first entrepreneurial education program, logic dictates that we continue this program and broaden the content provided to create a 2-phase training. The 1st phase will be continuing the recently executed program for all Phase II - first year grantees. Starting next year, a second track will be created and conducted for Phase II - second year grantees, on more advanced topics such as negotiations, go-to-market strategies, advanced pitching, and possible sector-specific topics. All this translates to an enormous amount of planning and execution hours.

3. <u>Sector-specific programs:</u> The interest in providing sector-specific discussions continues, but how to execute is challenging. With nine discrete program areas, this would necessitate nine separate programs, which is a logistical nightmare. What may be possible is to have webinars or a conference related single session for each sector that deals with some unique issues such as go-to-market strategy or strategic partners.

4. <u>Metrics:</u> The question was asked about reporting, metrics and assessment on our new and growing educational program. We are open to thoughts on the most valuable and productive mechanism to provide reporting on content and subject matter, as well as metrics which directly correlate to the educational training and outcomes for our grantees.

Appendix One shows the members of this working group.

Broadening Participation Working Group

The **AdCom** observes two complementary sets of activities: Broadening Participation and Deal Flow. The two efforts have nearly overlapping goals: increasing the number of quality Phase 1 proposals received from grantees who have never participated in NSF SBIR. Many of the same outreach and partnering activities can support both objectives. The **AdCom** recommends combining the Deal Flow Working Group with the Broadening Participation Working Group and adding Gracie Narcho as the IIP staff member responsible to engage with this group.

The **AdCom** recommends establishing a baseline of the current size of each of the under-represented groups in the SBIR/STTR portfolio.

The **AdCom** recommends that the goal for representation of the under-represented groups in the the SBIR/STTR portfolio reflect that of the population at-large, but acknowledges that this goal may be difficult to achieve in the next short term. Therefore, the following recommendations were made:

● Review the option to change the definition to include the company's leadership and well as its PI.

- Propose method for assessing what the percentages of these groups should look like.

The **AdCom** recommends that Barry Johnson adjoin the SBIR to the other NSF groups that are implementing programs to broaden participation in accordance with the recent mandate from the new Director.

- An additional recommendation was made to have a member of the group appointed to CEOSE to ensure alignment.

The **AdCom** recommends that the newly combined group work with the marketing professional to ensure that messaging is modified for specific groups and/or geographies.

Appendix One shows the members of this working group.

Deal Flow Working Group

The **AdCom** recommends combining the Deal Flow Working Group with the Broadening Participation Working Group and adding Gracie Narcho as the IIP staff member responsible to engage with this group.

The **AdCom** recommends using budget to contract a marketing professional to build a marketing organization to support SBIR/STTR and its staff with the following:

- In cooperation with the Program Directors, create / complete of an overarching, clear, and concise branding message that "introduces" or, in some case, may "re-introduce" SBIR/STTR's programs and processes to prospective entrepreneurs and PIs.
- Identify both new and existing prospects (groups and/or individuals) to whom to present the message and track these contacts and interactions (metrics).
- Continuous improvement of this message as feedback and results are available

The **AdCom** recommends that the grant application and submission process be reviewed again and streamlined in conjunction with the new branding effort in order to reduce obstacles and pain points that have been identified previously as reasons that prospective applicants chose not to apply.

- Consider embedding "how-to" video links into the online instructions to facilitate applicants with the process.

The **AdCom** recommends structuring and implementing a set of appropriate metrics to drive the strategy and direction of the combined effort for deal flow and broadening participation, monitor performance, and produce good data for both internal and external use.

- Define a short set of metrics that are specific, measurable, achievable, relevant and time-based.
- Get buy-in from all (Director, Deputy Director, Program Directors and **AdCom** members)
- Establish a method to collect and share the data (and analysis) on a regular basis.

Appendix One shows the members of this working group.

Break-out Session on SBIR/STTR on Outreach & Technical Topics

The **AdCom** appreciates the time spent with the Program Directors in our two break-out sessions:

- **Outreach:** Our recommendations from the break-out session on Outreach is included above, in the section on Increasing Deal Flow, with additional details recorded separately by Gracie Narcho.
- **Technical Topics:** Our recommendations from the break-out session on Technical Topics was recorded separately by Barry Johnson.

5.0 FUTURE MEETING AGENDA

The next two **AdCom** meetings will occur

1. Tuesday, December 1, 2015, 2:00 p.m.-6:00 PM and Wednesday, December 2, 2015, 8:00 a.m.-12:00 PM at NSF Headquarters, 4201 Wilson Blvd-Arlington, VA 22230
2. June 8-9, 2016 and will be co-located with the Phase II Grantees conference being held June 5-8 in Atlanta.

The **AdCom** appreciated how IIP shared the meeting agenda prior to this meeting, and the interim report on our recommendations from our prior meeting.

AdCom Proposed Agenda for the next meeting:

1. Update on IIP mission, vision, and strategic goals, including an update on key strategic metrics:
    - matching funds
    - percentage of SBIR phase 1 awards to new PIs
    - current size of each of the under-represented groups in the SBIR/STTR portfolio.
    - plus any other metrics IIP may care to present
2. Discussions with Program Directors on topic(s) preselected to be of particular interest to the Program Directors.
3. Update on Assessment
4. Update on Broadening Participation. Please present updated metrics tracking the number of Phase I proposals submitted from women and underrepresented groups
5. Update on Deal Flow.
6. Update on Entrepreneurial Education
7. Planning for the Move to the New NSF Headquarters Building in 2017
8. Deliberations and Report Out

Appendix One: Working Groups and Membership

Working Group	Key Contact (from IIP Staff)	Chairperson (from Ad Com)	Members (from Ad Com)
Assessment	Barry Johnson	Robert "Skip" Rung	Susan Butts Angus Livingstone Dick Paul Susan Preston Karthik Ramani David Spencer
Broadening Participation*	Gracie Narcho	Ann Savoca	Karen Kerr Tom Knight Arlene Garrison William Lockwood-Benet
Deal Flow*	Gracie Narcho	Annette Finsterbusch	Trish Costello Angus Livingstone Karen Kerr Eugene Krentsel Ann Savoca Susan Preston
Entrepreneurial Education	Barry Johnson	Susan Preston	Susan Butts Trish Costello William Lockwood-Benet Karthik Ramani Skip Rung

*Broadening Participation and Deal Flow have significant overlapping activities and will often meet together.

National Science Foundation
Engineering Advisory Committee
Subcommittee on the SBIR/STTR Program

Subcommittee Charter

1. **Subcommittee's Official Designation:** The National Science Foundation (NSF Engineering Advisory Committee, Subcommittee on the Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Program (the Subcommittee).

2. **Authority:** The Subcommittee is established in accordance with Section 13 of the charter for the NSF Engineering Advisory Committee.

3. **Objective and Scope of Activities:** The Subcommittee provides strategic advice and recommendations concerning the NSF SBIR/STTR Program.

4. **Description of Duties:** The Subcommittee shall review and provide strategic advice on the operation of the NSF SBIR/STTR Program (the Program) within the Division of Industrial Innovation and Partnerships (IIP) of the Directorate for Engineerin (ENG). In accordance with Section 13 of the charter for the NSF Engineerin Advisory Committee (the Committee), the Subcommittee shall report their recommendations and advice to the full Committee for deliberation and discussion. The Subcommittee may provide advice on the Program for technology focus areas, management, assessment, performance, vision, plans, and other strategic aspects of the Program. The Subcommittee may advise on the impact of overall NSF-wide policies on the Program.

5. **Membership:** The Subcommittee shall have no more than 16 members appointed by the Division Director for the Division of Industrial Innovation and Partnerships with the concurrence of the Assistant Director for the Engineering Directorate. At least one member of the Subcommittee shall also be a member of the NSF Engineering Advisory Committee. Subcommittee members shall be selected to provide balanced representation of small businesses, large businesses, investors, and universities (or other nonprofit research organizations). To the extent practicable, effort shall be made to achieve a diverse membership that includes individuals from underrepresented groups and different geographic regions. Each member shall normally serve a three-year term and may be reappointed. To provide continuity in the Subcommittee's membership, the initial appointments shall be staggered with an approximately equal number of members appointed for one-year

terms, two-year terms, and three-year terms so that approximately one-third of the membership becomes eligible for reappointment each year.

6. **Subcommittee Chair:** The Division Director for the Division of Industrial Innovation and Partnerships shall appoint the Subcommittee Chair with the concurrence of the Assistant Director for the Engineering Directorate. The Subcommittee Chair shall be appointed to a two-year term.

7. **Designated NSF Official:** The Division Director for the Division of Industrial Innovation and Partnerships (the Division Director for IIP) is the designated NSF official for the Subcommittee. The Division Director for IIP calls the Subcommittee meetings, prepares meeting agendas, and attends Subcommittee meetings.

8. **Meetings:** The Subcommittee shall meet at least once per year.

9. **Working Groups:** The Subcommittee may form Working Groups for any purpose consistent with this charter. Such Working Groups shall report their recommendations and advice to the full Subcommittee for deliberation and discussion.

10. **Duration:** It is expected that the Subcommittee shall continue indefinitely; however, the NSF Engineering Advisory Committee shall review the Subcommittee and its charter biannually.

11. **Approval:** The NSF Engineering Advisory Committee shall be required to approve the Subcommittee Charter, including any subsequent changes, upon the recommendation of the Subcommittee.

12. **Minutes:** The Subcommittee shall maintain minutes of all meetings and provide those minutes to the NSF Engineering Advisory Committee.