Minutes (Fall '16)
NATIONAL SCIENCE FOUNDATION
National Science Foundation, Arlington, VA
Engineering Directorate Division of Industrial Innovation and Partnerships
Report of the Advisory SubCommittee for Small Business Innovation Research (SBIR) and
Small Business Technology Transfer (STTR) Programs
November 29-30, 2016

1.0 INTRODUCTION

The National Science Foundation (NSF) Advisory SubCommittee (AdCom) for the Small
Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR)
Programs met November 29-30, 2016, at NSF in Arlington, Virginia.

Advisory Committee members in attendance included:
William Lockwood-Benet
Susan Butts
Annette Finsterbusch
Arlene Garrison
Tom Knight (Chair)
Eugene Krentsel
Richard Paul
Susan Preston
Skip Rung
Ann Savoca
David Spencer
Karthik Ramani

Advisory Committee members absent:
Karen Kerr

NSF IIP representatives attending all or part of the meeting included:
Grace Wang, Assistant Director, Engineering Directorate
Barry Johnson, Acting Deputy Assistant Director, IIP
Graciela Narcho, Acting Division Director, IIP
Ben Schrag, Senior Program Manager, IIP
Muralidharan Nair, SBIR/STTR Program Director, IIP
Henry Ahn, SBIR/STTR Program Director, IIP
Debasis Majumdar, SBIR/STTR Program Director, IIP
Jesus Soriano, SBIR/STTR Program Director, IIP
Rick Schwerdtfeger, SBIR/STTR Program Director, IIP
Anna Brady-Estevez, SBIR/STTR Program Director, IIP
Peter Atherton, SBIR/STTR Program Director, IIP
Ruth Shuman, SBIR/STTR Program Director, IIP
Kelly Monterroso, Communications Specialist, IIP
Eric Keys, AAAS Fellow, IIP
Nisha Cooch, AAAS Fellow, CISE
Miki Templeton, Program Analyst, IIP

2.0 AGENDA

Tuesday, November 29, 2016

1:00 p.m. **Welcome and Introductions** – Barry Johnson, Deputy Assistant Director (Acting)
   Review Agenda and confirm Prior Email Approval of Minutes - Tom Knight, Chair

1:30 p.m. IIP UPdate (Team, Programs, Budget, Other) – Barry Johnson, Gracie Narcho

2:00 p.m. IIP Question and Answer Session – All

2:30 p.m. Discussion Sessions with SBIR/STTR Program Directors – All

3:30 p.m. Break

4:00 p.m. Committee of Visitors (COV) Results – Barry Johnson, Gracie Narcho

4:30 p.m. Working Group on Entrepreneurial Education – Susan Preston, Barry Johnson

5:00 p.m. Adjourn for Travel to Cosmos Club for Dinner

7:00 p.m. Dinner - Cosmos Club, Garden Dining Room, 2121 Massachusetts Ave. NW, Washington, DC 20008

Wednesday, November 30, 2016

8:30 a.m. Arrival and Informal Discussions – All

9:00 a.m. Introduction and Overview of the Day – Tom Knight, Chair

9:15 a.m. Report Out – Working Group on Deal Flow/Broadening Participation – Ann Savoca, Annette Finsterbusch, Gracie Narcho

9:45 a.m. Report Out – Working Group on Assessment – Skip Rung, Barry Johnson,

10:15 a.m. Break

10:45 a.m. SBIR/STTR Subcommittee Deliberations

12:00 p.m. SBIR/STTR Subcommittee Recommendations to NSF

1:00 p.m. Meeting Adjourns

3.0 Approval of Minutes from Last Meeting

The AdCom confirmed that the minutes from the prior meeting were approved via email prior to this meeting.

4.1 SBIR/STTR Subcommittee Recommendations

1. **Improve <u>Assessment</u> quickly:**
   a. Leadership should articulate a vision with long-term Big Hairy Audacious Goals (BHAG) and a get-started plan; define stakeholders and define measures of success; select a few meaningful metrics for evaluation/assessment and get started, with permanent staff. See Appendix 2.
2. **Increase number of quality proposals from first-time Phase 1 submitters:**
   a. <u>Deal Flow</u>: Start putting Salesforce information in place immediately. The data is configurable and will grow richer with consistent use. Use salesforce marketing campaigns/events on outreach efforts to increase first-time Phase 1 submitters. See Appendix 3.
   b. <u>Broadening Participation</u>: Select ten outreach events/organizations that will help us increase first-time Phase 1 submitters who are women or from underrepresented groups. See Appendix 4.
   c. <u>Entrepreneurial Education</u>: Prepare training materials that educate first-time Phase 1 submitters on how to write a high-quality proposal. See Appendix 5.
3. **All Other Recommendations**
   a. Staffing: Eleven Program Directors are not sufficient. Fight for additional PDs who can not only process the huge and increasing number of proposals received, but who also must reach out to first-time Phase 1 submitters and mentor to our existing grantees.
   b. AdCom endorses the recommendations of the Committee of Visitors (CoV). In addition, AdCom recommends the SBIR/STTR program revise the reviewer template for commercialization reviewers to provide more specific guidance listing individual elements to review in the commercialization plan.
   c. AdCom congratulates IIP for the recent milestones achieved in building the "National Innovation Network", with 8 nodes comprising 26 universites, 50+ sites, and 800+ iCorps teams, as well as 9 Memorandum of Understanding with other Federal Agencies. This milestone follows 8+ years of effort by the past and present leadership of IIP, and should be celebrated and publicized within the Foundation.

The underlined words above are our four Working Groups. See Appendix 1 for the members of each Working Group,. See Appendices 2-5 for detailed commentary from each Working Group,.

The AdCom thanks Grace Wang for all her contributions to SBIR/STTR, IIP, and NSF, and wishes her best of success in her future role at SUNY.

5.1 FUTURE MEETING AGENDA

Our Next Meeting will be June 7-8, 2017 in Atlanta, Georgia.

We volunteer to meet as Working Groups between now and our next meeting. Just ask!

The AdCom appreciated how IIP shared the meeting agenda and the reading materials prior to this meeting.

AdCom's Proposed Agenda for the next meeting:

1. Update on IIP mission, vision, and strategic goals, including assessment metrics, as discussed in Appendix 1
2. Update on our Top Four Priorities/Working Groups
3. Discussions with Program Directors on topic(s) preselected to be of particular interest to the Program Directors.
4. Deliberations
5. Report Out

AdCom requests at least 75 minutes for our Deliberations, item #4, above.

Appendix 1:

AdCom Working Groups, with Members and Key Contacts from IIP Staff

Working Group	Key Contact (from IIP Staff)	Chairperson (from AdCom)	Members (from AdCom)
Assessment	Barry Johnson	Robert "Skip" Rung	Susan Butts 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	Karen Kerr Eugene Krentsel Ann Savoca Susan Preston
Entrepreneurial Education	Barry Johnson	Susan Preston	Susan Butts William Lockwood-Benet Karthik Ramani Skip Rung

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

Appendix 2: <u>Assessment </u>Working Group - Detailed Commentary

The "bottom line" recommendation from the Spring AdCom meeting was to "draft an Assessment Plan/Strategy…" and distribute it in advance of the Fall (Nov. 29-30) AdCom meeting.

Among suggested features/considerations for the recommended plan was this: "Because there will be significant costs in both money and precious staff time, there should be advance knowledge/plans of how assessment date will be used, i.e. what decisions it will inform."

A bare-bones outline for a development project over the next 7 months was distributed, calling for stakeholders to be interviewed, data/metrics selected, commercial databases (e.g. CB Insights) to be used and grantee survey methods (e.g. Survey Monkey) developed/tested and institutionalized by June 2017. This schedule is important as the two AAAS Fellows, Eric Keys and Nisha Cooch (on loan from another NSF division) will have their appointments end in August 2017 and October 2017, respectively.

The draft plan has no definition of stakeholders nor specification of what data will be collected and how it will be used. AdCom feels that these are an IIP leadership responsibilities rather than tasks solely for the AAAS Fellows. Accordingly, our number one recommendation this time is for IIP leadership to supply this guidance before detailed development of the plan begins.

Current assessment methods adequately collect data relevant to Broadening Participation (i.e. women and minority-involved submissions and awards), which is the area of greatest performance concern on the part of NAS, COV, NSF and AdCom. But it is also important to determine the value and use of data related to grantee company success, and here there is still much ambiguity about what is important to stakeholders and how what is important can be measured.

Another way to look at this situation, perhaps, is that the Assessment effort has actually become the new Vision/Assessment task, as AdCom also urges IIP to develop an overall and aggressive (i.e. not clear yet how it can be realized) new vision along the lines of the "National Innovation Ecosystem" envisioned in Kansas City in 2008. The 2008 vision has been substantially achieved by iCorps and SBIR/STTR, which is a source of great satisfaction for all of us. AdCom envisions achieving the same level of NSF leadership in assessment innovation.

AdCom agrees with Barry's observation that the Assessment task has been "overcomplicating itself into inactivity" for some time. AdCom recommends both a bold vision for what is to be achieved (and eventually assessed with appropriate metrics and data collection/reporting) AND a tactical "starter" assessment plan limited to a few useful things that can be successfully implemented in the next few months. Again, this demands senior leadership attention.

AdCom notes with pleasure and interest the initial use of CB Insights to gather important information (such as funding events) on 80 or so portfolio companies, and the engagement (jointly with the outreach/marketing efforts by Kelly Monterroso) with Salesforce as a broad-based data management solution. The greatest pull for grantee success/performance data and compelling stories currently appears to be for the purpose of attracting more high-quality proposals by communicating program success and grantee benefits to prospective

proposers.

AdCom looks forward to the first revision of the draft assessment plan (requested by Barry) by December 9, and to engaging with IIP staff between now and the next AdCom (Atlanta, June 7-8) to the extent we can be helpful.

Appendix 3: <u>Broadening Participation </u>Working Group - Detailed Commentary

The Broadening Participation Working Group met jointly with the Deal Flow Working Group on Nov 29, 2016. Kelly Monterroso provided the two groups with a Communications and Outreach Update which included a SBIR Website Update, Marketing Contract Update, CRM Contract Update and review of the Outreach Calendar. The first three of these are covered under the Deal Flow Working Group update (Appendix 4). The Broadening Participation Working Group was pleased to hear of the progress made toward implementing the Communications and Outreach Strategy and looks forward to the interim update call to be scheduled in early March.

We were asked by the IIP to provide feedback on the new Outreach calendar, specifically on the top ten events put forward by IIP as high priority. We noted that these ten events were directly related to Broadening participation and agreed that they should be the primary focus for next year. We recommended getting on the agenda to present at each event, rather than attending the event and using the opportunity to informally 'spread the word'. We also recommended adding the AUTM Annual Meeting (in particular to interface with the AUTM women's group) and the Women in Technology Conference (Silicon Valley) to the list. Kelly and Gracie indicated that they would ask NSF attendees for feedback after each event to help decide if participation should continue in the future. We would still like collateral that the Ad Com could distribute when attending meetings; feedback from the meetings would need to be provided to IIP for entry into the new CRM

The following are highlights from the discussion we had related to developing a Broadening Participation Strategy for IIP:

- Jesus Soriano will be assuming a leadership role in Broadening participation for the IIP and is working on the strategy document
    - There are various 'touch points' within the agency working to broaden participation and Jesus said he would provide further detail about these initiatives, commenting during the meeting that the combined divisional ('local') NSF investments in broadening participation programs was ~$800M in FY2015
    - Jesus introduced us to 'Chi Chi' Nnakwe who described the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES), one of the flagship programs for the NSF (still in its early stages of development)
    - Jesus discussed conceptual options and plans, including metrics, resources, scalability and events we should support
        - A question was raised about self-reporting obstacles. We requested that the IIP consider whether the legal framework allows NSF to promote the benefits of self reporting as a member of an underrepresented group and if so, consider promoting the benefits in marketing efforts and tailored made materials for these segments.
        - A recommendation was made that IIP look into data-mining/marketing to court past/potential Phase 1 proposal submitters who are women or from underrepresented groups

- The group discussed segmenting the customer base
  - A suggestion was made that leads in the CRM system be segmented into marketing personas, one for each group of potential new Phase 1 submitters. In short, each lead could be assigned to one or more of the following personas, with marketing content tailored to each:
    - Women
    - African-Americans
    - Hispanics
    - Native Americans
    - Other various under-represented groups
  - It was also suggested that we identify these other personas in the CRM who might help us with deal flow and broadening participation
    - Venture capitalists
    - Angel investors
    - Private Technology Incubators
    - University Offices of Technology Transfers
    - Public Business Development (Regional, State, or Local)
- The group discussed lead generation
  - Kelly will be marketing to generate new leads and assign them to personas mentioned above
  - We offered to help assist with leads from regional economic development, e.g., city, state, etc. and suggested tapping the US Dept of Commerce Economic Development Administration; they have a website which has some useful information
  - We also recommended that groups and organizations on our partnership lists be contacted to ask if they would share their membership lists with us, so that we can add their members to our CRM database.
- The group discussed metrics for broadening participation
  - Gracie distributed metrics on SBIR/STTR Women and Minority Involvement, respectively, with Submission and Award Rate
    - We recommended looking at Ph.D. and new business owner population percentages for each group by technology segment (biology, computer science, etc.), to help us get a baseline for setting target participations percentages from each group
  - We recommended establishing a baseline for participation by geography in order to set target participation by state or region.

Appendix 4: <u>Deal Flow</u> Working Group - Detailed Commentary

First of all, it is important to stress how impressed the committee is to see the progress since our last meeting. It is clear that many of the recommendations have been or are being implemented. Given all of the headcount changes and time constraints due to hiring, the progress is even more remarkable. It was said that, "...it feels as though we are ready to hit the accelerator at this point…" and the committee suggests strongly that the group continue moving forward at this pace over the next six months on implementation of the website, Salesforce DB, and other marketing initiatives.

With respect to the website, as you move through the analysis with the selected contractor, the group may want to identify and introduce the contractors to external sites that achieve similar goals in order to help facilitate understanding and project planning. Equally important will be to engage a variety of the AdCom members, so that fresh eyes are always on the content and structure planning process. Although it was stated that the first step will be 10 weeks and there is hope that the implementation will take place or be largely completed by the next AdComm, we may want to manage expectations and assume that the launch of a new site may take as long as 9 - 12 months given the complexity of the reworked content.

There is mutual agreement that an update call is to be scheduled in early March.

As for the implementation of a "backbone" type database, it is agreed that Salesforce.com should be purchased as soon as possible. The discussion on how to configure the system to meet the needs at SBIR will be ongoing for several months; however, because the platform allows for changes to the configuration at any time it is important to begin using it asap in order to capture current efforts. The suggested steps for bringing the database platform up is (1) to hold a call with the Salesforce sales team to learn about the functionality, (2) begin to review LinkedIn for ex-Salesforce technical team members that may be local and contracting independently to expedite configuration of the system to our needs, (3) take the first seat licenses and begin to enter data for the current Grantees and this will help us understand what the barebone requirements are for configuring the platform, (4) work with AdCom members to help think through how the Salesforce / Marketing jargon translates to NSF and then define the various categories for all users, (5) contact groups that may be strategically aligned with the mission to get their membership list and dump those into the system to start building the database. Salesforce is envisioned to become the backbone that will support all of our efforts: increasing the quality and quantity of Deal Flow, increasing the diversity within the incoming deal flow, and increasing the quality and quantity of reporting (the tools are already embedded in the Salesforce platform) and assessment.

There was agreement that the collateral produced to date including the one-page "who are we" document and the "business card" idea is strong. However, a suggestion was made to consider using a QR code that will take interested parties directly to the Biography page of the website to find specific contact info for Program Directors. In this way, it is unnecessary to struggle with replacing all of the distributed materials when there are changes in the group. In this way, information is always current and there is no dated information floating around.

Appendix 5: <u>Entrepreneurial Education</u> Working Group - Detailed Commentary

Congratulations again to the staff for developing and implementing very successful Phase II and Phase I grantee educational programs. The true indication of a successful initiative is the termination of a working group. To this end, we could close this working group with great satisfaction of a job well done. An additional activity was identified as a valuable initiative specifically related to Phase 0 (and possibly also Phase I) grantee education. The working group will take on the task of working with staff to develop training materials on effectively completing a Phase I grant application (and possibly Phase II). This training could include a series of short vignettes and/or a "ghost application" to assist in the creation of quality, well-written, complete applications. The working group will work with staff to develop the content.

One other initiative identified, and will be discussed further, is teaching many of the concepts we cover at the Phase II education program, at the Phase I grantee conference.

These activities are supportive of other working groups such as deal flow and broadening participation. It may be that this working group remains to respond to educational needs identified by other working groups.