Survey Questions for PFI-BIC

ID #	Logic		Item	Freq.	Response Scale	Variable type/Data entry format	Question Item Source Material	Output or Outcome Addressed
1	Outputs: Workforce Development		How many students have you mentored during the award?			Numerical text boxes for each.	NEW	Workforce Development Outputs: Numbers of students and postdocs trained by BIC PI
2	Outputs: Workforce Development		How many postdocs have you mentored during the award?			Numerical text boxes for each.	NEW	Workforce Development Outputs: Numbers of students and postdocs trained by BIC PI
3	Outputs: Workforce Development		How many of your students have graduated with a master's degree? How many of your students have graduated with a PhD?			Numerical text boxes for each.	NEW	Workforce Development Outputs: Numbers of students and postdocs trained by BIC PI
4	Outputs: Workforce Development		How many of your students have been hired by partner companies?			Numerical text boxes for each.	NEW	Workforce Development Outputs: Numbers of students and postdocs trained by BIC PI
5	Outputs: Workforce Development		How many of your postdocs have been hired by partner companies?			Numerical text boxes for each.	NEW	Workforce Development Outputs: Numbers of students and postdocs trained

							by BIC PI
6	Outputs: Commercia lization		Have you or your collaborators on the award developed a business plan for commercialization?		A. Yes B. No	Binary: y/n		Output: Business plan for commercialization is developed
7		Only asked if member of the NSF-funded project team	To what extent has any of the following occurred as a result of your participation in the NSF-funded project/program? TEACHING • I taught new courses and/or course content related to the NSF-funded project • I developed new extracurricular or not-for-credit instructional activities • I incorporated new instructional methods related to those used in the NSF-funded project in my teaching RESEARCH AND LEADERSHIP • I changed the way I think about my research • I led a change effort in my department, institution, or organization (e.g.,		A. Yes, a lot B. Yes, some C. No D. Not applicable Or A. Yes B. No C. Not applicable	Matrix/Arra y	EEC Impact Interview Protocol[2]; I-Corps Indicators & Monitoring System[3]	Outcome: Researchers and/or students become innovators in other contexts

			policy, curriculum) • I encouraged my students to talk to potential customers about their research or technologies **CAREER** • I applied what I learned from the NSF-funded project in other projects or career endeavors • I advised/mentored teams that are interested in commercializing their research or starting a venture related to their research • I pursued new career opportunities related to research commercialization and / or venture development **ORGANIZATIONAL BENEFITS** • Saved department/institution organization money • Increased productivity of department/institution/organization					

			• Participated in outreach efforts beyond the university setting					
8			Have new positions or employee training opportunities been created as a result of your BIC partnership? If yes, how many?			Yes/No with structured text box to list number of opportunities	NEW	Immediate Outcome: Workforce Development- Number of positions or training opportunities created
9			How many of your students have continued in related fields?			Text box to enter number	NEW	Intermediate Outcome: Workforce Development- Number of students continuing in related fields
10			How many of your postdocs have continued in related fields?			Text box to enter number	NEW	Intermediate Outcome: Workforce Development- Number of postdocs continuing in related fields
11			How many of your students have continued in similar innovation or entrepreneurial partnerships?			Text box to enter number	NEW	Intermediate Outcome: Workforce Development- Number of students continuing in innovation or entrepreneurial partnerships
12			How many of your postdocs have continued in similar innovation or entrepreneurial partnerships?			Text box to enter number	NEW	Intermediate Outcome: Workforce Development- Number of postdocs continuing in innovation or entrepreneurial

							partnerships
13	New Research Directions		Has the product/ service made it to market/ been implemented?		A. Yes B. No	Binary: y/n	PFI:BIC Logic Model & Indicators[4]; PFI:AIR Logic Model & Indicators; I-Corps Indicators & Monitoring System[3]	Intermediate Outcome: Technology Development

14	New Research Directions	If above=NO	Primary reason product/service has not moved towards market/commercialization :		1) Technical Failure or Difficulty
					  a) Key personnel left company
					  b) Estimated costs too high
					  c) Ran out of money or other resources
					  d) Patent problems
					  e) Technology obsolete
					2) Market Demand Difficulty
					  a) Market needs change
					  b) Costs too high (not cost competitive in market place)
					  c) Business segment in recession
					  d) Market was not there to begin with
						May choose option A or B ONLY; then any of the subheadings under that option	SBIR Common Questions; PFI:AIR Indicators & Logic Model	Intermediate outcome: Technology Development

15	Outputs: Licensing		How many of the following does either [NAME BUSINESS/the NSF-funded project TEAM MEMBER/INSTITUTION] have as a result of the award? Enter zero if none.		• Inventions Disclosed • Licensing Agreements • Patent Applications • Patents Granted • Patents in Use • Inventions Producing Royalties • Software Copyrights	Numerical: open for each option	Kauffman Firm Survey[6]; I-Corps Indicators & Monitoring System[3]	Intermediate Outcome: Patent and License applications of new technology

					• Company Trademarks • Non-disclosure Agreements (NDA) Materials Transfer Agreements (MTA)			
16	Technology Developme nt		Are there any products, services, or processes in the market, market ready, or awaiting regulatory approval whose commercialization you can attribute (to some degree) to your participation in the NSF-funded project?	Annual		Binary: Y/N	SBIR Common Questions; PFI:BIC Logic Model & Indicators[4]; PFI:AIR Logic Model & Indicators; I-Corps Indicators & Monitoring System[3]	Intermediate Outcomes: Technology Development
17	Health of Collaborati on	Asked of Collabor ative Leads	Please rate the health of your collaboration in the following dimensions: A. Stakeholders are committed B. Business Benefits are realized C. Work and Schedule are predicted/predict able D. Team is high performing E. Scope is realistic and managed in the context of available	Quarte rly	A. Green- Progressing in accordance with plan B. Yellow- Warning, corrective attention required C. Red- Urgent, remedial action required	These data could be used by the PIs/collabor ators to address any issues that may arise mid-course and adjust accordingly. They will also be used in aggregate by program staff to compare to	PFI:BIC Logic Model & Indicators[4]	Process characteristics (used for mid-course formative evaluation) Quality, Health and Sustainability of the partnership model

			resources F. Risks are mitigated G. Delivery Organization Benefits are realized			other monitoring system data to try to identify predictors of successful collaborations	
18	Outputs: Best Practices		Have your NSF-funded efforts resulted in or contributed to description or establishment of "best practices" (methodologically or otherwise) for your discipline?		A. Yes (Please describe.) B. No (Please describe.)	Binary: y/n, with text box for description	PFI:BIC Logic Model & Indicators[4]	Intermediate Outcome: Best practices established and disseminated
19	New Research Directions	A. All B. Only if A=YES C. Only if B=YES	A. Have you been able to create new research directions which resulted from discoveries or developments of your NSF award? B. Have you pursued funding for these new directions? C. Were you successful in securing funding		•Yes •No	Binary: y/n	EFRI Indicators & Monitoring System[5]; PFI:BIC Logic Model & Indicators[4]	Intermediate Outcome: New research directions are created

			for these new directions?					
20			Based on your experience, does the BIC partnership lead to a shorter average development cycle for commercialization of technology?			Yes/No with structured text box for comments	NEW	Intermediate Outcomes: Barriers to commercialization are overcome
21			How many publications have you authored based on technology or advancements in the underlying discovery supported by the BIC award?			Number field	NEW	Intermediate Outcomes: Technology Advancements- number of publications based on technology supported by the BIC award
22	Outputs: Collaborations	Only asked if company has been incorporated	Did the NSF-funded project result in any collaborations between the awardee institution and the external community? (e.g., Local/state government, industry, non-profit organizations, etc.?	Annual		Binary: Y/N	I-Corps Indicators & Monitoring System[3]; EFRI Indicators& Monitoring System[5]; PFI:BIC Logic Model & Indicators[4]; PFI:AIR Logic Model & Indicators	Long Term Outcome: Sustainability of the partnership model
23	Outputs: Collaborations	Only asked if company has been incorporated	Please list any external collaborations beyond the collaborators on your award that you can attribute to your participation in the NSF-			Multiple textboxes	I-Corps Indicators & Monitoring System[3]; EFRI Indicators& Monitoring	Long Term Outcome: Sustainability of the partnership model

#	Category	Condition	Question	Frequency/Notes	Response	Format	Source	Outcome
			funded project/program		**Partner Name / Organization Type / Financial contributions of partner organization** 1 2		System[5]; PFI:BIC Logic Model & Indicators[4]; PFI:AIR Logic Model & Indicators	
24	Outputs: Collaborations		Are you still collaborating with any of your collaborators on the award?		A. Yes B. No If yes, please provide their names.	Binary: y/n with text box for description	PFI:BIC Logic Model & Indicators[4]; PFI:AIR Logic Model & Indicators	Long Term Outcome: Sustainability of the partnership model
25	Business Creation	Only asked if member of the NSF-funded project team	To your knowledge, has a company been incorporated based on this NSF-FUNDED PROJECT?	Annually, if answer in previous year was No	Binary: Y/N		Kauffman Firm Survey[6]; I-Corps Indicators & Monitoring System[3]	Long Term Outcome: Subset of awardees form start-up or spin-off companies
26	Business Creation	Only asked if member of the NSF-funded project team *and* company	What is the name of this company?	This may be redundant after year 1	Text: open		Kauffman Firm Survey[6]; I-Corps Indicators & Monitoring System[3]	Long Term Outcome: Subset of awardees form start-up or spin-off companies

		has been incorporated					
27	Business Creation	Only asked if member of the NSF-funded project team *and* company has been incorporated	When was [COMPANY NAME] Initiated?		1. Prior to participation in the NSF-funded project 2. During the NSF-funded project 3. After completing the NSF-funded project	Multiple choice	Kauffman Firm Survey[6]; I-Corps Indicators & Monitoring System[3]	Long Term Outcome: Subset of awardees form start-up or spin-off companies
28			In addition to your PFI:BIC funding, have you applied to other federal agencies for funding for a related research project? If yes, which agencies?			Yes/No with structured text box to list funding agencies	NEW	Long-Term Outcomes: Continued cycle of innovation

[1]   NSF Engineering, "GARDE Satisfaction Survey." 31-Jul-2013. OMB Control No: 3145-0157

[2]   NSF Engineering, "EEC Impact interview Protocol." 02-Aug-2013.

[3]   NCIIA, "I-Corps Indicators & Monitoring System." 23-Oct-2013.

[4]   NSF Engineering, "PFI:BIC Logic Model & Indicators." 26-Jul-2013.

[5]   NSF Engineering, "EFRI Pilot Clearance." 20-Mar-2014.

[6]   "Kauffman Firm Survey - Annotated Questionnaire." Ewing Marion Kauffman Foundation.