

Nuclear Physics SBIR/STTR Program :

SBIR/STTR Exchange Meeting
August 9-10, 2016
Gaithersburg, MD

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Program Manager
Industrial Concepts

DOE Office of Science
Office of Nuclear Physics



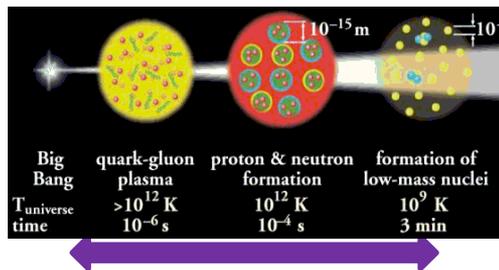
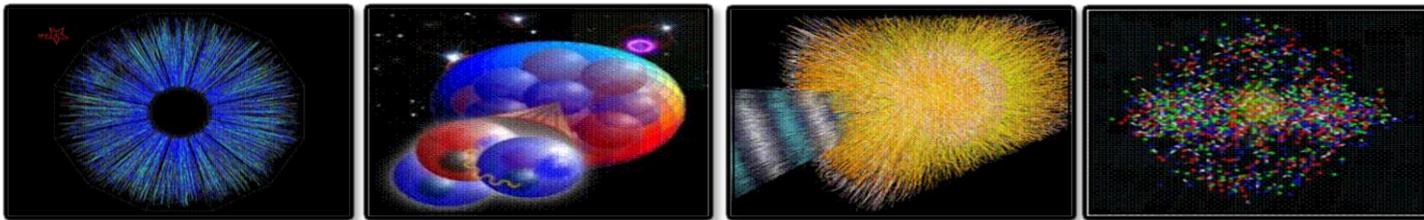
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Mission Statement Office of Nuclear Physics

Mission: To discover, explore and understand all forms of nuclear matter; to understand how the fundamental particles, quarks and gluons, fit together and interact to create different types of matter in the universe, including those no longer found naturally.



Nuclear Physics



RHIC collider at BNL.



CEBAF at TJNAF



ATLAS at ANL

At Present NP Operates three National User Facilities

“Microscopes” capable of groundbreaking research



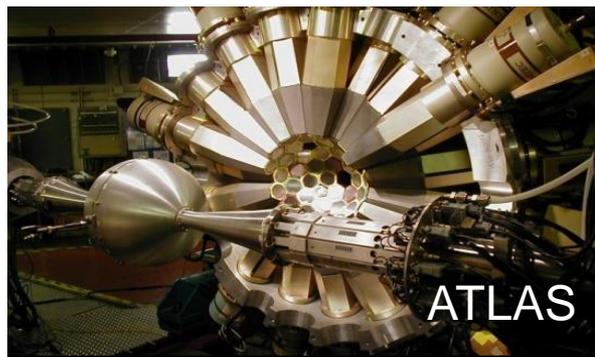
RHIC

Relativistic Heavy Ion Collider



CEBAF

Continuous Electron Beam Accelerator Facility



ATLAS

Argonne Tandem Linac Accelerator System



Under Construction

Facility for Rare Isotope Beams at MSU



NP Isotope Program Mission

The **mission** of the DOE Isotope Program is threefold:

- Produce and/or distribute radioactive and stable isotopes that are in short supply, associated byproducts, surplus materials and related isotope services.
- Maintain the infrastructure required to produce and supply isotope products and related services..



Isotope Production
Facility (LANL)



Brookhaven Linac
Isotope Producer

- Conduct R&D on new and improved isotope production and processing techniques which can make available new isotopes for research and applications.



This can relate to the SBIR Isotope Topic



SBIR/STTR Exchange Meeting

- NP is seeking to effectively assess the performance of NP supported SBIR/STTR projects in contributing to the NP mission and goals. Started in FY2010, the Exchange meeting is designed to serve that purpose and to achieve the following goals:
 - To **provide a platform** for small businesses to present the status of NP-supported Phase II grant work to the NP community and Federal Program Managers.
 - To offer an opportunity to **exchange information** regarding the **companies' capabilities** and the technical needs of the NP programs.
 - To **strengthen the ties** of the SBIR/STTR businesses **with the community** and enhance the possibilities for commercialization.
- For this year's meeting, all Phase II awardees at the end of Year -1, Year-2 (started in FY014 and 15) and awardees still active under "no cost extension" are invited. A total of **22** SBIR/STTR presentations will be given in 2 days.
- FY 2016 Phase II awardees are invited as participants only and will be invited to present in next year's meeting.
- Also included are four keynote talks related to the NP user facilities, their capabilities and needs in view of the NP SBIR program.
- A talk by DOE SBIR/STTR Program office representative at the end of the meeting.
- Abstracts for the PI presentations are available:
http://science.energy.gov/~media/np/pdf/sbir%20sttr/SBIR_STTR_2016/Presentation_Abstracts.pdf

2016 Exchange Meeting Agenda (Day 1)

Meeting Agenda-Day 1

Time	Dur. (min)	Grant Title	Speaker	Organization	NP SBIR/ STTR Topic	Grant Status
Tuesday, August 9, 2016						
8:30 AM	5	Welcome and Introductory Remarks	Farkhondeh, Manouchehr	DOE, Office of Nuclear Physics		
8:35 AM	35	NP SBIR/STTR Program Overview	Shinn, Michelle	DOE, Office of Nuclear Physics		
1 9:10 AM	25	100W Mode-locked Green Laser for GaAs Photoemission Guns	Geng, Jihong	AdValue Photonics Inc., AZ	Accelerator	End Year 1
2 9:35 AM	25	Templated Micro-Channel Thermal Control System	Kimble, Michael	Reactive Innovations, LLC, MA	Electronics	End Year 1
10:00 AM	25	Coffee Break				
3 10:25 AM	25	Acid-Free Electropolishing of SRF Cavities	Taylor, E. Jennings	Faraday Technology, Inc. OH	Accelerator	End Year 1
10:50 AM	35	NP Low Energy Facilities and the SBIR/STTR Program	Bollen, Georg	Facility for Rare Isotope Beams/Michigan State		
4 11:25 AM	25	Liquid Metal Targets for High Power Electron Beams	Grimm, Terry	Niowave, Inc., MI	Accelerator	End Year 1
5 11:50 AM	25	Diamond Sensor for the Neutron Electric Dipole Moment Experiment	Hovde, Chris	Southwest Sciences, Inc., NM	Electronics	End Year 1
12:15 PM	60	Lunch Break (on your own)				
6 1:15 PM	25	Solid-State Neutron Detectors with Integrated Electronics for Nuclear Physics	Christian, James	Radiation Monitoring Device, Inc., MA	Instrumentation	End Year 1
1:40 PM	35	The Relativistic Heavy Ion Collider Facility and the SBIR/STTR Program	Minty, Michiko	Brookhaven National Laboratory		
7 2:15 PM	25	Low Z Thin Film Stripper Foils, Targets and X-Ray Windows	Kumar, Nalin	UHV Technologies, Inc., TX	Instrumentation	End Year 1
8 2:40 PM	25	Micro Penning Traps for Continuous Magnetic Field Monitoring in High Radiation Environments	Dugan, Mark	Translume, Inc., CA	Instrumentation	End Year 1
9 3:05 PM	25	Thermo-Mechanically Stable Tungsten Powders as Solid Catchers for the Fast Release of Stopped Rare Isotopes	Sampathkumaran, Uma	InnoSense, LLC, CA	Accelerator	End Year 1
3:30 PM	25	Coffee Break				
10 3:55 PM	25	Development of a Nanomaterial Anode for a Low Voltage Proportional Counter for Neutron Detection	Craps, Matthew	NanoTechLabs, Inc., NC	Instrumentation	End Year 1
11 4:20 PM	25	Nb-on-Cu Cavities for 700-1500 MHz SRF Accelerators	Velas, Katherine	Alameda Applied Sciences Co., CA	Accelerator	End Year 1
12 4:45 PM	25	Development of a Superconducting RF Harmonic Cavity for eRHIC	Boulware, Chase	Niowave, Inc., MI	Accelerator	End Year 1
13 5:10 PM	60	Informal Discussion on Challenges and Best Practices for Commercialization				

New starting this year – Informal discussion between interested participants on best practices for commercialization.



2016 Exchange Meeting Agenda (Day 2)

Meeting Agenda-Day 2

Time	Dur. (min)	Grant Title	Speaker	Organization	NP SBIR/ STTR Topic	Grant Status
Wednesday, August 10, 2016						
14	8:30 AM	25	Non-Invasive Beam Monitor, Fast Kicker, Bunch Shaper	Roberts, Brock	Electrodynamic, NM	Accelerator End Year 2 /NCE
15	8:55 AM	25	Radiation Resistant Magnetic Field Sensor II	Kochergin, Vladimir	Microact Inc., VA	Instrumentation End Year 2 /NCE
16	9:20 AM	25	Low Cost, High-Density Digital Electronics for Nuclear Physics	Shulski, Wojciech	Skutek Instrumentation, NY	Electronics End Year 2 /NCE
17	9:45 AM	25	Digital Silicon Photomultiplier Array Readout Integrated Circuits	Lee, Adam	Voxel, Inc., OR	Instrumentation End Year 2/NCE
18	10:10 AM	25	Polyhedral User Mapping Assistant and Visualizer (PUMA-V)	Langston, M. Harper	Reservoir Labs Inc., NY	Software End Year 2
	10:35 AM	30	Coffee Break			
	11:05 AM	35	Jefferson Lab and its SBIR/STTR Program	Weisenberger, Drew	Thomas Jefferson Accelerator National Facility	
19	11:40 AM	25	Low-Latency Ultra-High Capacity Holographic Data Storage Archive Library	Anderson, Ken	Akonia Holographics, LLC, CO	Software End Year 2
20	12:05 PM	25	GaAsSb/AlGaAsP Superlattice Polarized Electron Source	Chen, Yiqiao	SVT Associates Inc., MN	Accelerator End Year 2
	12:30 PM	60	Lunch Break (on your own)			
21	1:30 PM	25	Modular Planar Germanium Detector Systems for High Resolution Gamma-Ray Spectroscopy and Tracking Arrays	Hull, Ethan	PHDs Co., TN	Instrumentation No Cost Extension
	1:55 PM	35	DOE Isotope Program and Facilities and the SBIR/STTR Program	Cutler, Cathy	Brookhaven National Laboratory	
22	2:30 PM	25	Ferroelectric Based High Power Components for L-Band Accelerator Applications	Kanareykin, Alex	Euclid Techlabs, LLC, OH	Accelerator No Cost Extension
	2:55 PM	25	Coffee Break			
23	3:20 PM	25	Digital SQUID Magnetometers for Read-out of Detectors and Magnetic Particles	Radparvar, Masoud	Hypres, Inc., NY	Instrumentation No Cost Extension
24	3:45 PM	35	Update on the Department of Energy SBIR/STTR Program, Q/A	O'Gwin, Chris	DOE, SBIR/STTR Office	
25	4:20 PM	Adjourn				

SBIR/STTR

SBIR: Small Business Innovation Research **STTR:** Small Business Technology Transfer.

- **SBIR:** Set-aside program for U.S. small businesses (SB) to engage in Federal Research and Development (R&D) with potential for commercialization. (Participations: **SB: minimum 66 % for Phase I and 50% for Phase II, Research Institution (RI): optional**)
- **STTR:** Set-aside program to facilitate cooperative R&D between SB and U.S. RI with potential for commercialization. (Participations: **SB: minimum 40%, RI: minimum 30%**)
- **“Both”:** submitted for consideration as SBIR or STTR (both). Must satisfy the minimum participation requirements listed above for both SBIR and STTR.
- **Fast Track:** A combined and accelerated Phase I and Phase II grant. **Eliminated in FY2017**
- Congressionally-mandated programs, funded by a small percentage of the extramural R&D budget set aside within each DOE technical program that participates.
- **2012 reauthorization bill has provided funding for the program until September 2017**

	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
SBIR	0.0270	0.028	0.029	0.0300	0.0320	0.0320
STTR	0.0035	0.004	0.004	0.0045	0.0045	0.0045
Total	3.05%	3.20%	3.30%	3.45%	3.65%	3.65%

Current SBIR/STTR Status

Phase I

Grant	Max award (\$k)	Small Business (Level of Effort)	Research Institution (Level of Effort)
SBIR	150	Min 66%	Optional
STTR	150	Min 40%	Min 30%

Phase II

Grant	Max award (\$k)	Small Business (Level of Effort)	Research Institution (Level of Effort)
SBIR	1000	Min 50%	Optional
STTR	1000	Min 40%	Min 30%

SBIR/STTR 2012 Reauthorization Bill

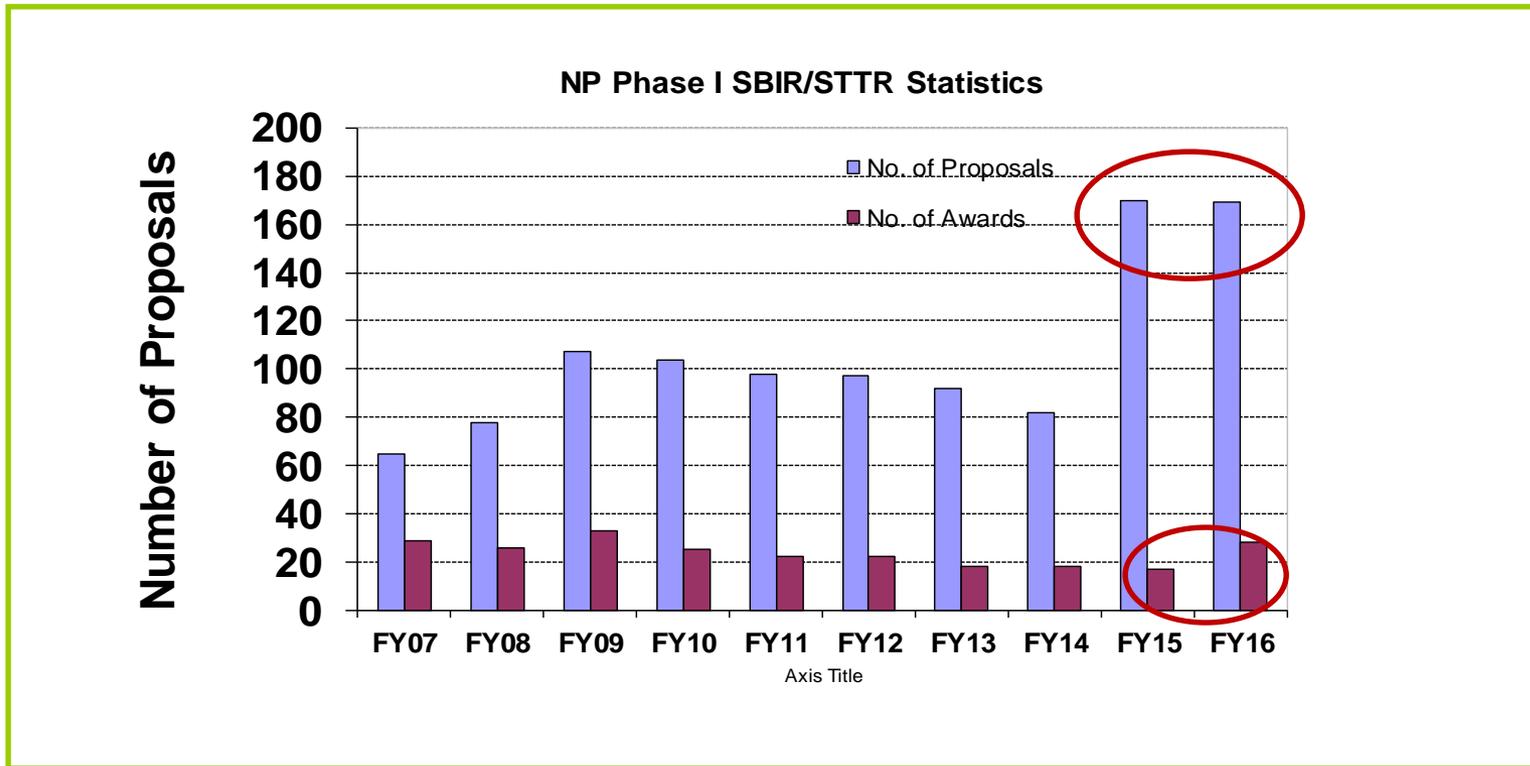
Highlights:

- Maximum SBIR and STTR award amounts are now at \$150k and \$1000k
- Increases the SBIR program allocation from 2.5 to 3.2 percent and the STTR allocation from 0.3 percent to 0.45 percent over the course of the reauthorization,
- Reauthorization legislation allows companies to switch between SBIR and STTR programs when they apply for Phase II
- Requires most agencies to **complete their review process for applicants within 90 days** (or 180 days if the agency is granted an extension by the SBA).
- More emphasize on commercialization and performance metric.
- More detail on **Mr. Chris O’Gwin’s** talk tomorrow afternoon



NP Phase I SBIR/STTR Applications and Awards

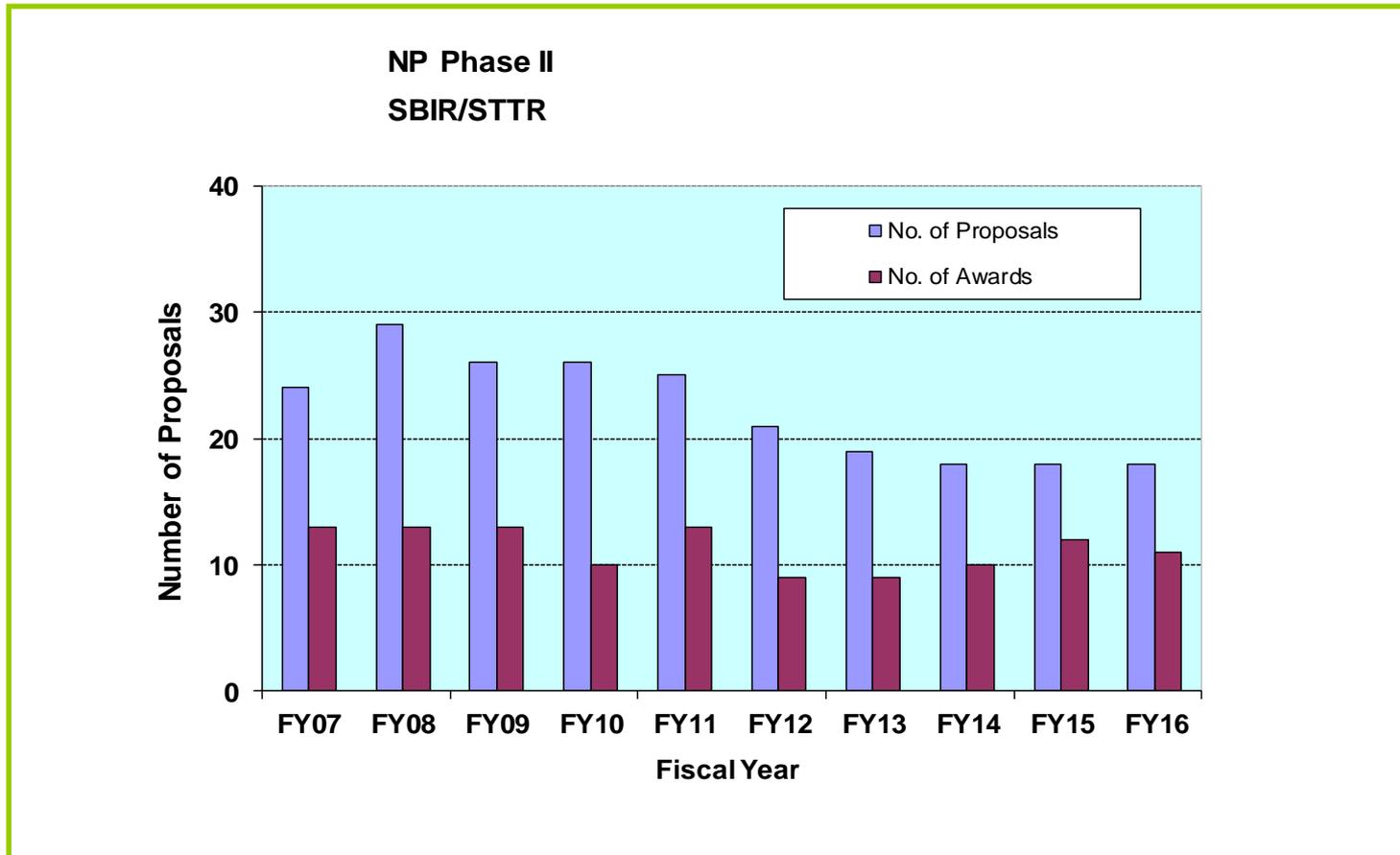
- NP received a Total of **277** LOI and **169** phase I proposals in FY 2016, with **1109** review requests for a total of **~ 423** mail reviews. Total of **28** proposals funded. (cf 18 in FY15)
- There was a huge increase of applications in FY15 that has been sustained in FY16. It now requires full-time involvement of two Program Managers and assistance from the Topic Associates (TA).





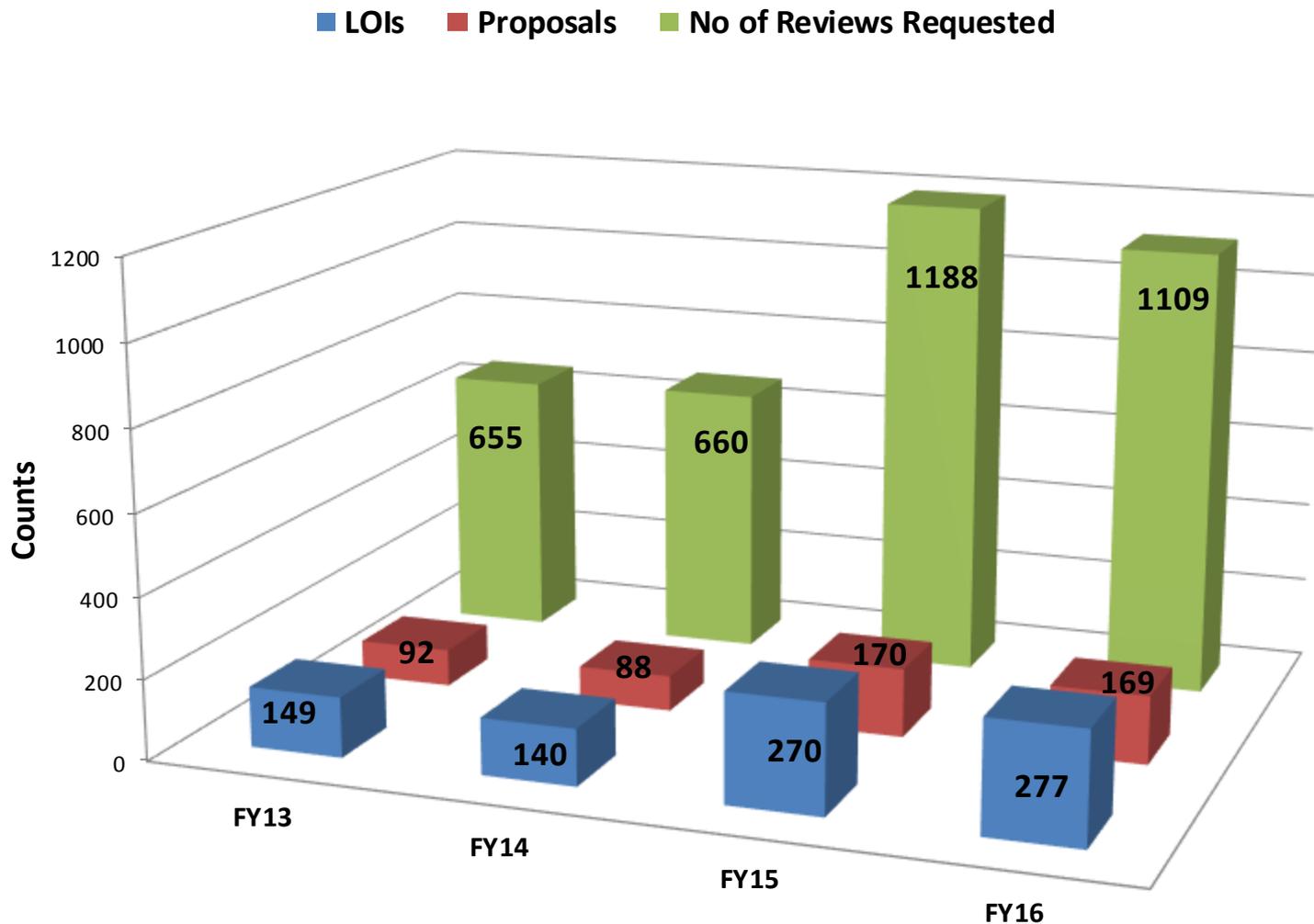
NP Phase II SBIR/STTR Applications and Awards

The increases in maximum SBIR award amounts starting in FY 2011 has affected number of phase II awards that can be supported.





NP Phase I SBIR/STTR LOIs and Applications (FY2015)

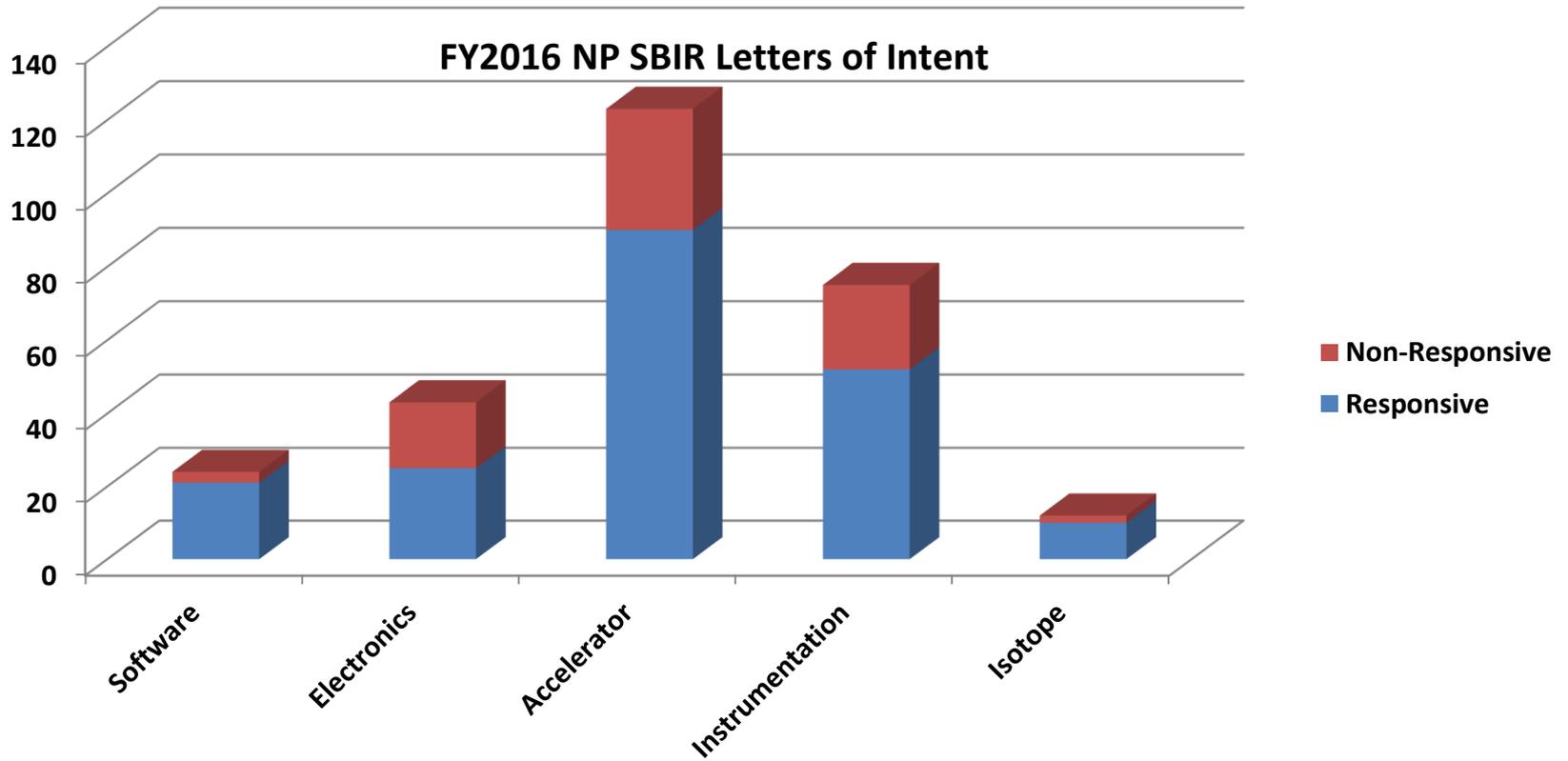


In FY15: HEP moved out of DOE Release 1's FOA

- The # of LOIs and proposals nearly doubled.



NP Phase I SBIR/STTR LOIs Responsiveness (FY2016)





NP SBIR/STTR Topics for FY 2016

- Software and Data Management
 - Electronics Design and Fabrication
 - Accelerator Technology
 - Instrumentation, Detection Systems and Techniques
 - Isotope Science and Technology
-
- Considerable Revisions of subtopics this year in various topics.
 - Funding Notes: There is no fixed set aside for each topic. Proposals from all 5 topics compete with each other and highly ranked applications are funded.



NP Topic 1 Software and Data Management

- a. Large Scale Data Storage
- b. Software-driven Network Architectures for Data Acquisition
- c. Data Science/Distributed Computing Applications
- d. Heterogeneous Concurrent Computing
- e. Other

FY16	SBIR	STTR /Both	Fast Track	Total	LOI
# of Applications	15	0	0	15	24
# of Awards	1	0	0	1	N/A

Phase I

FY15	SBIR	STTR /Both	Fast Track	Total	LOI
# of Applications	8	0	0	8	14
# of Awards	0	0	0	0	N/A



NP Topic 2 Electronics Design and Fabrication

- a. Advances in Digital Processing Electronics
- b. Front-End Application-Specific Integrated Circuits
- c. Advanced Devices and Systems
- d. Next Generation Pixel Sensors
- e. Manufacturing and Advanced Interconnection Techniques
- f. Other

FY16	SBIR	STTR /Both	Fast Track	Total	LOI
# of Applications	18	0	0	18	43
# of Awards	3	0	0	3	N/A

Phase I

FY15	SBIR	STTR /Both	Fast Track	Total	LOI
# of Applications	18	2	0	20	37
# of Awards	1	1	0	2	N/A



NP Topic 3 Accelerator Technology

- a. Materials and Components for Radio Frequency Devices
- b. Radio Frequency Power Sources
- c. Design and Operation of Radio Frequency Beam Acceleration Systems
- d. Particle Beam Sources and Techniques
- e. Polarized Beam Sources and Polarimeters
- f. Rare Isotope Beam Production Technology
- g. Accelerator Control and Diagnostics
- h. Magnet Development for Proposed Future Electron-Ion Colliders (EIC)
- i. Accelerator Systems Associated with the Capability to Deliver Heavy-Ion Beams to Multiple Users
- j. Other

Phase I

FY16	SBIR	STTR /Both	Fast Track	Total	LOI
# of Applications	77	8	3	85	123
# of Awards	13	2	1	16	
FY15	SBIR	STTR/B oth	Fast Track	Total	LOI
# of Applications	77	10	0	87	120
# of Awards	10	1	0	11	



NP Topic 4 Instrum. Detection Sys. and Techniques

- a. Advances in Detector and Spectrometer Technology
- b. Development of Novel Gas and Solid-State Detectors
- c. Technology for Rare Decay and Rare Particle Detection
- d. High Performance Scintillators, Cherenkov Materials and Other Optical Components
- e. Specialized Targets for Nuclear Physics Research
- f. Technology for High Radiation environments
- g. Other

Phase I

FY16	SBIR	STTR/ Both	Fast Track	Total	LOI
# of Applications	39	6	3	45	75
# of Awards	7	1	0	8	

FY15	SBIR	STTR/ Both	Fast Track	Total	LOI
# of Applications	35	6	(2)	41	82
# of Awards	4	0	0	4	

NP Topic 5 Isotope Science and Technology

- a. Novel or Improved Production Techniques for Radioisotopes or Stable Isotopes
- b. Improved Radiochemical Separation Methods for Preparing High-Purity Radioisotopes
- c. Other

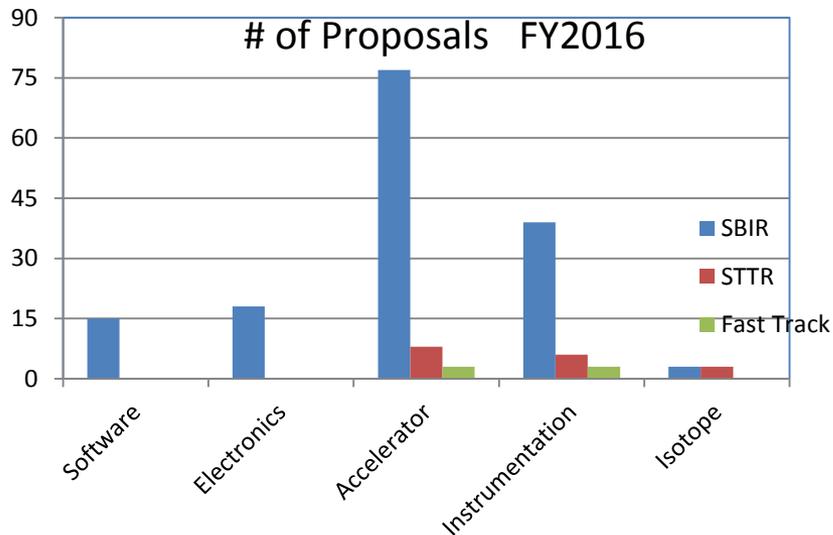
FY16	SBIR	STTR /Both	Fast Track	Total	LOI
# of Applications	3	3	0	6	12
# of Awards	0	0	0	0	

Phase I

FY15	SBIR	STTR /Both	Fast Track	Total	LOI
# of Applications	10	3	(0)	13	22
# of Awards	0	1	0	1	N/A

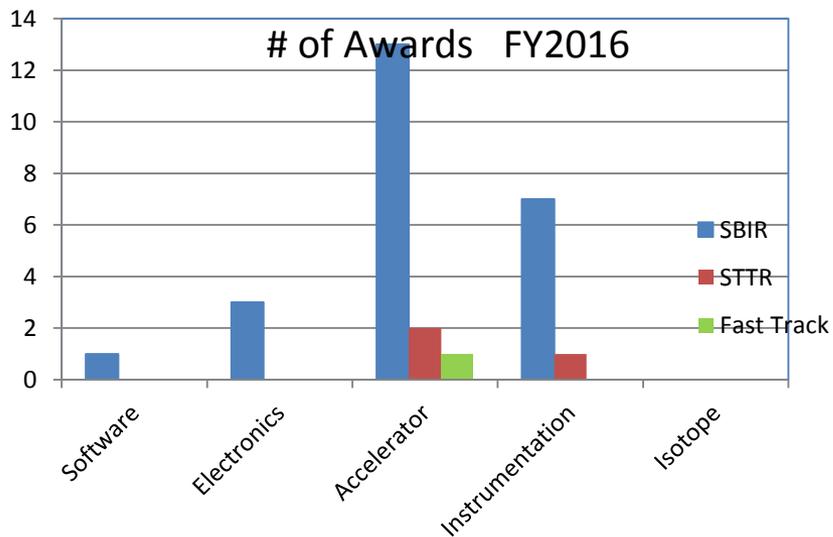
NP SBIR/STTR Statistics FY2016

FY2016
Proposals



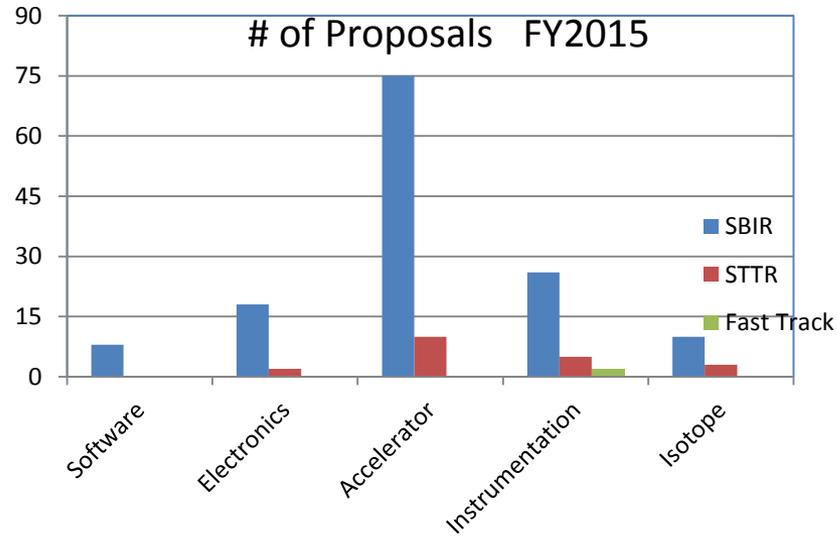
Phase I

FY2016
Awards



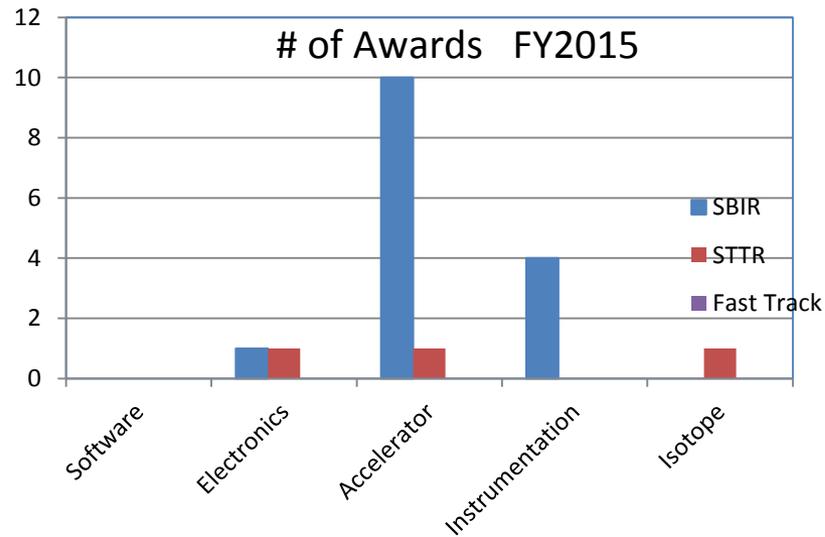
NP SBIR/STTR Statistics FY2015

FY2015
Proposals



Phase I

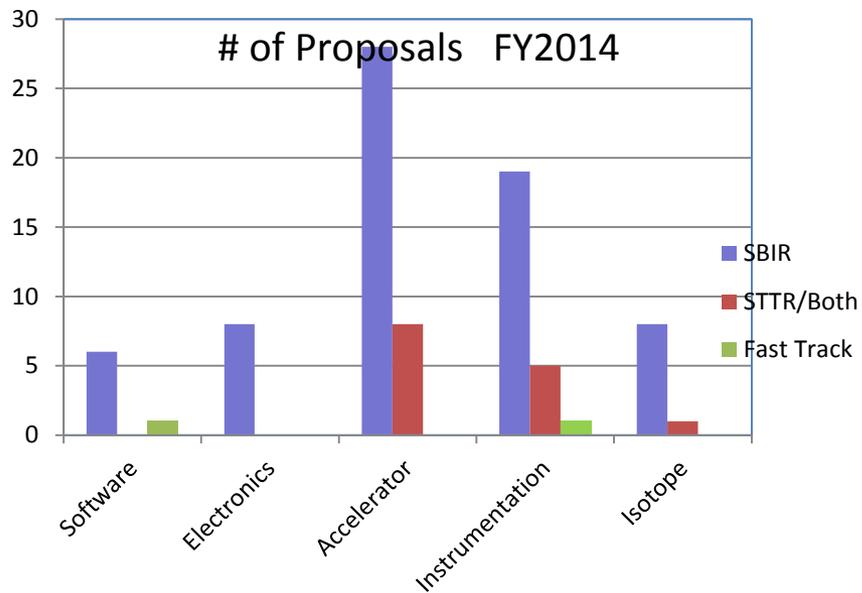
FY2015
Awards



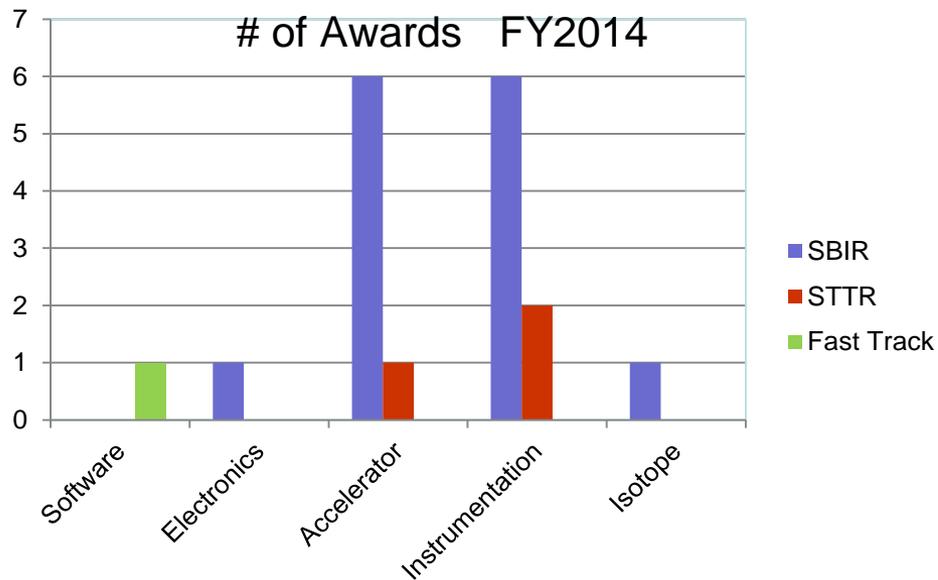
NP SBIR/STTR Statistics FY2014

FY2014
Proposals

Phase I



FY2014
Awards





NP yearly SBIR/STTR topic development process

- Start with last year's published topic document and make initial revisions based on a year-round Program Manager's observation of needs and NP community input as well as,
- Request input for each topic from individuals within the NP community,
- Collect and implement all inputs on existing subtopics. Add and/or delete subtopics as necessary,
- Submit the revised topics to the DOE SBIR/STTR office and,
- After further formatting iterations with the SBIR/STTR office, the solicitation is published as a Funding Opportunity Announcement (FOA) around the middle of August.

Sequential II A and IIB

2012 SBIR/STTR Reauthorization permitted agencies to issue **sequential Phase II awards**

• 15 USC 638 (ff) Additional SBIR and STTR awards. (1) Express authority for awarding a sequential Phase II award. A small business concern that receives a Phase II SBIR award or a Phase II STTR award for a project remains eligible to receive 1 additional Phase II SBIR award or Phase II STTR award for continued work on that project.

- Only Phase II awardees are eligible
- Only 1 additional Phase II award may be made per Phase II project

Invitation needed →

Phase IIA: For certain prototypes, products, or processes that need more than a single Phase II award. Starts immediately upon completion of the Phase II.

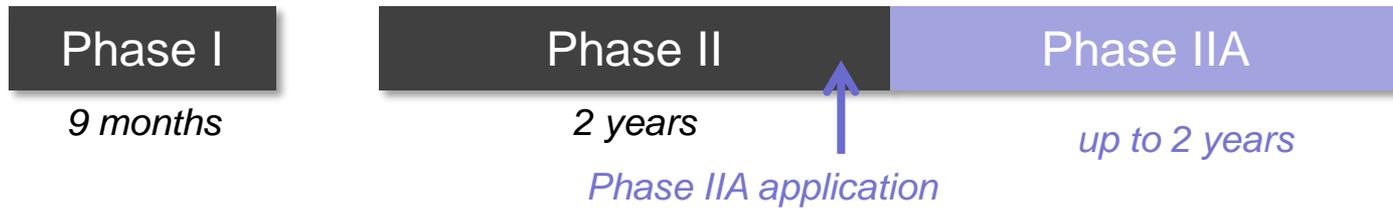
- *DOE Program Managers will select the topics/subtopics for which Phase IIA applications will be accepted (By subtopic invitation only)*

No Invitation needed →

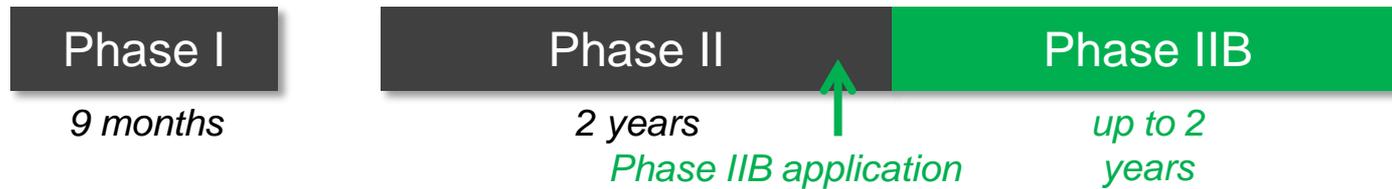
Phase IIB: For R&D funding required to transition an innovation towards commercialization. Starts immediately after completing a Phase II or up to 1 year later.

In the FY 2016 Phase II cycle: NP received 4 Phase IIB applications, peer reviewed all and 1 was funded. We received 19 Phase IIA applications and funded 10. Compete with new Phase II applications.

Sequential Phase IIA



Sequential Phase IIB





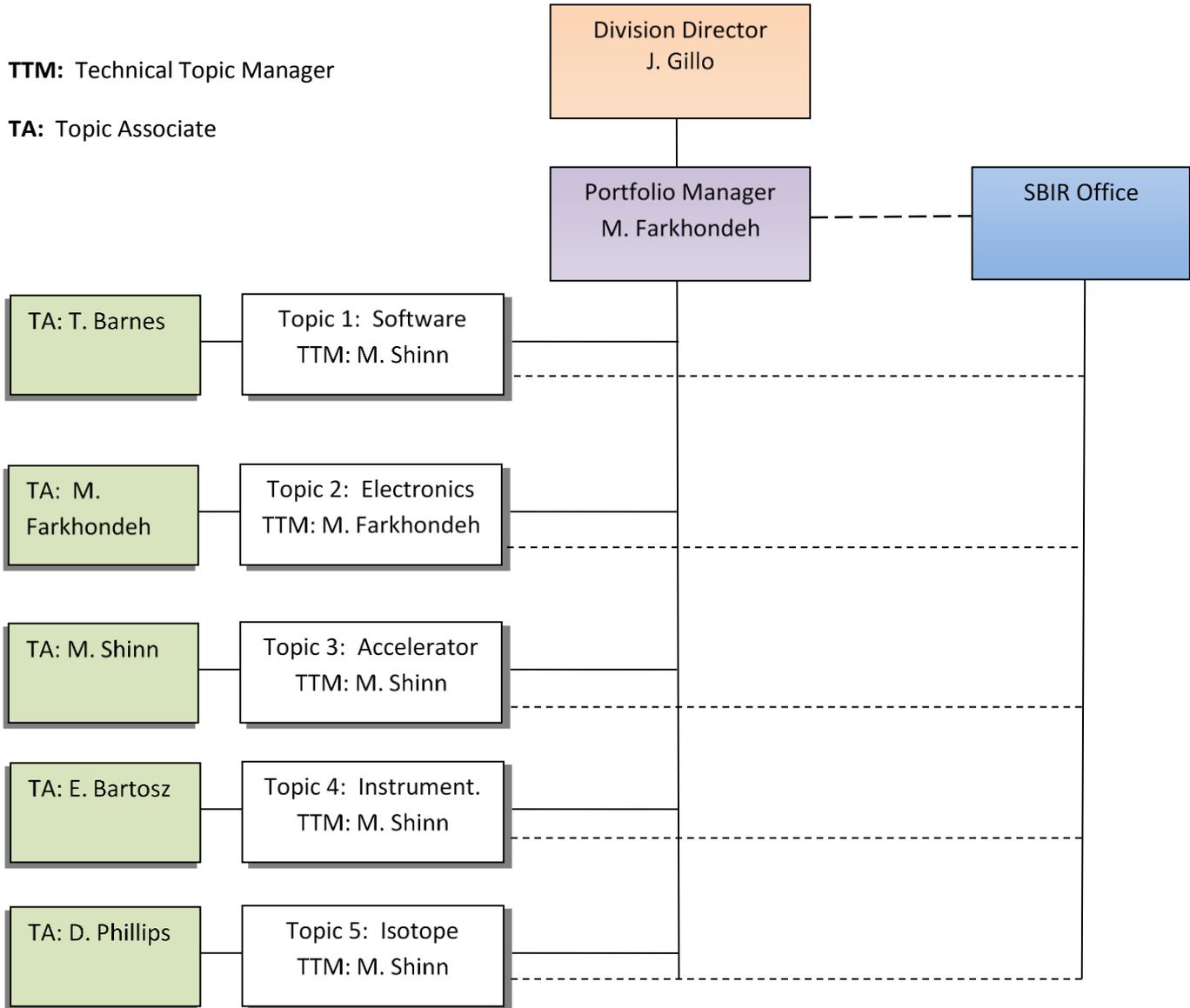
No Fund Extensions and Sequential Phase II Eligibility

- A company can only receive a Sequential Phase II award if their Phase II project has completed.
 - Phase IIA applicants should not request no fund extensions
 - Phase IIB applicants should not request no fund extensions if they are still working on their Phase II project at the time of application.

NP SBIR/STTR Org. Chart: (8/03/2016)

TTM: Technical Topic Manager

TA: Topic Associate



Technical Topic Manager (TTM)

Activities:

- Communicate w/ SBIR Office
- Prepare annual solicitation
- Assign reviewers
- 1st step panel review
- Rate proposals
- Recommend funding
- Manage grants
- Visit companies
- Read progress and final reports
- 2nd year continuation

Topic Associate (TA) Activities: for Assigned Topics

- Prepare annual solicitation
- *Assign reviewers
- * 1st step panel review
- * Rate proposals
- * Recommend funding
- Manage assigned grants
- Visit companies as needed
- Read reports assigned
- 2nd year continuation as assigned

*: Time Sensitive tasks



DOE SBIR/STTR Program Changes in FY12 -17

- **DOE Publishing Phase I solicitation twice a year**
 - **Release 1:** Office of Science call for proposals August-September (FY15→: w/o HEP)
 - **Release 2:** Rest of DOE call for proposals December-January (FY15 → HEP, FES, etc.)

- **Speeding up of processing of applications:**
 - Early posting of topics (in July, a month before the FOA is issued)
 - Letter of intent required ([for process of identifying reviewers](#))

LOI: List all potential Collaborations / Subcontracts /Consultants

- **Increased emphasis on commercialization**
 - Declination of Phase I application lacking a commercialization or data management plan
 - Phase II applications with poorly rated commercialization plans, independent of their technical merit review scores, may not be eligible for funding



NP SBIR/STTR Program Changes in FY17

- We wish to better connecting businesses to the NP community.
- To do this, we are adding an NP-specific “Awards” page to the existing SBIR/STTR webpage.
 - This page will list the awardee, contact info, the abstract, etc. for the current year and the previous two years.
- We have an email list you can join: NP-SBIR-STTR@science.doe.gov
 - You will receive only a few emails a year,
 - Announcement of SBIR/STTR Calendar
 - Announcement and link that SBIR/STTR Topics are available
 - Announcement of grants

Notes on “Final Reports”

➤ When preparing the “Final Report” for your grant, make sure the following items are included in addition to what the instruction explicitly asks for.

- a. **List the original tasks** with brief description of each as they were originally proposed in the grant application.
- b. **A short description of accomplishments** for each task indicating the degree to which each task was accomplished. Include a short description if a listed task was not accomplished or was modified.
- c. Add to the cover page the phrase "**Grant supported by DOE Office of Nuclear Physics**".

➤ These items should add only few pages to the report but provide a valuable reference and structure in the report by connecting the original tasks to the accomplishments.

➤ Reports are normally returned for revisions if above items not included.

Presentation Notes

- We have a tight agenda and must stay on time for each presentation.
- Sessions will start sharply at the time stated on the agenda. Please take your seat a few minutes before the start of each session to allow the first presentation to begin on time.
- Make sure your presentation file is uploaded on the display laptop before the start of your session. We do not want you to use your own computer.
- For Q&A sessions, please make your comments /questions short and use the coffee breaks and lunch breaks for follow ups.

Total presentation (min)	Presentation (min)	Q&A (min)	5 and 2 minutes warning @ (min)
35	25	10	20 & 23
30	20	10	15 & 18
25	18	7	13 & 16

Back up Slides



Transition Rate Metrics

- Phase II → Phase III success rate
 - Applies to companies that have received > 15 Phase II awards during the last 10 fiscal years, excluding the two most recently completed fiscal years
 - Metric calculation example for FY 2012

$$\frac{\text{Total Investment + Revenue from Phase II Awards FY 2000 – 2009}}{\text{Number of Phase II Awards FY 2000 – 2009}} \geq \$100,000$$

OR

$$\frac{\text{Number of Patents from Phase II Awards FY 2000 – 2009}}{\text{Number of Phase II Awards FY 2000 – 2009}} \geq 0.15$$



Transition Rate Metrics

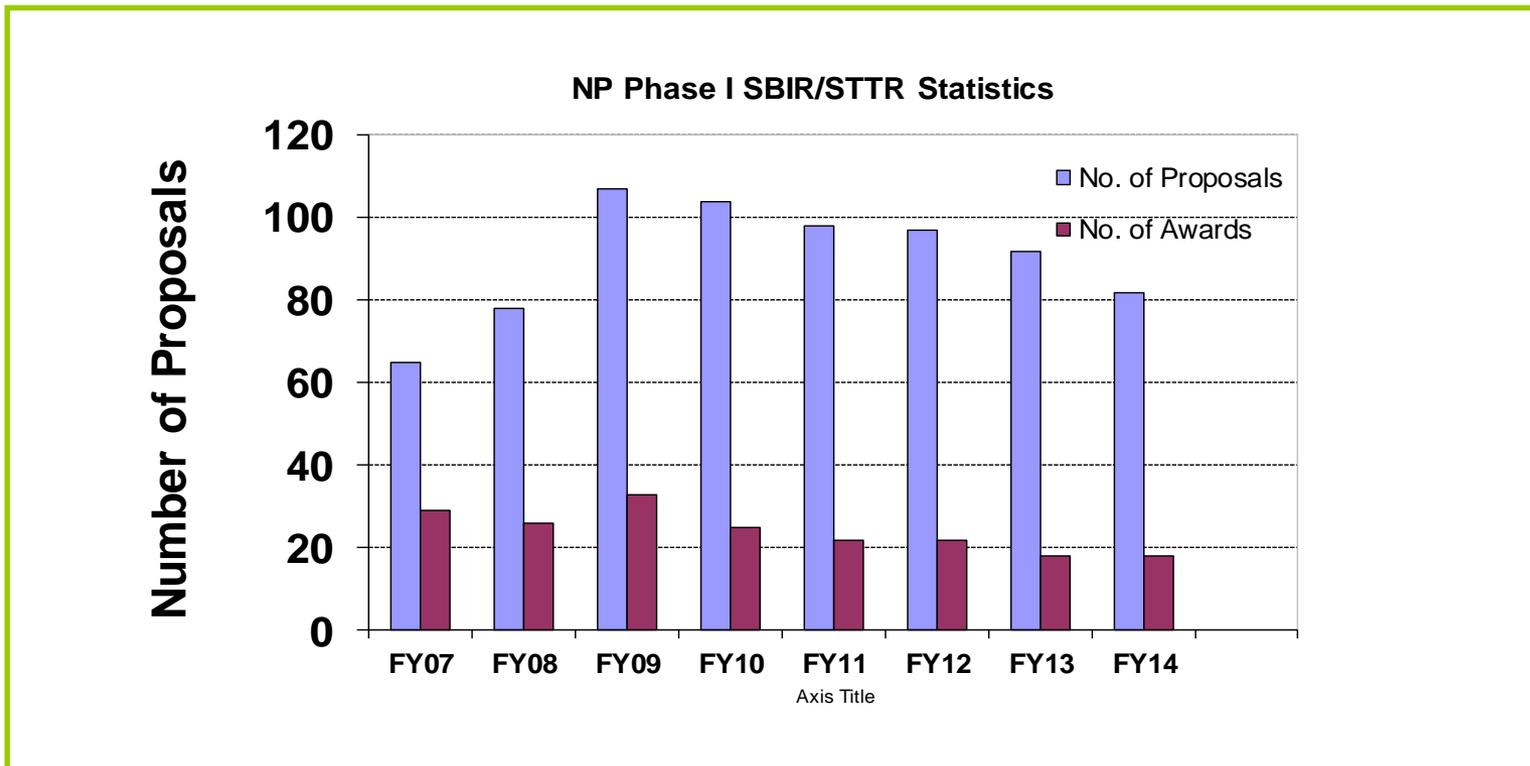
- Companies that fail to meet the either metric will be ineligible to apply for any Phase I awards for 1 year.
- Companies can see if they fail to meet either metric by checking the SBA company registry (SBIR.gov)
- Implementation
 - Phase I → II Transition Rate metric will be included in the FY 2014 and future Phase I Funding Opportunity Announcements
 - Phase II → III Transition Rate metric will be included in the FY 2015 and future Phase I Funding Opportunity Announcements

Back up Slides



NP Phase I SBIR/STTR Applications and Awards

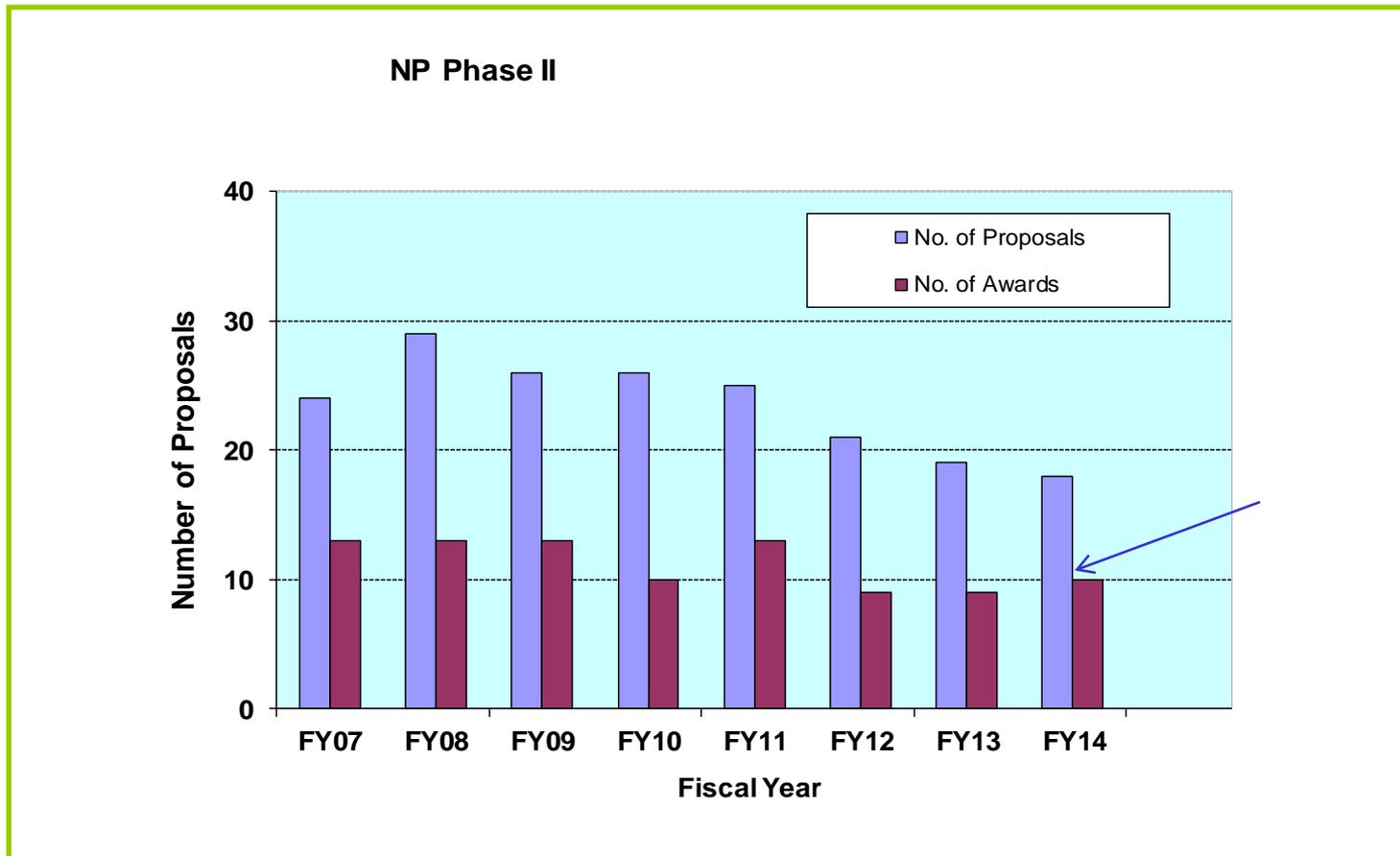
- NP received a Total of **88** phase I proposals in FY 2014, with over 350 reviews.
- Increases of max SBIR award amounts in FY 2011 are to provide adequate funding of grants. These increases will also result in a reduction in number of Phase I grants that can be funded each year.





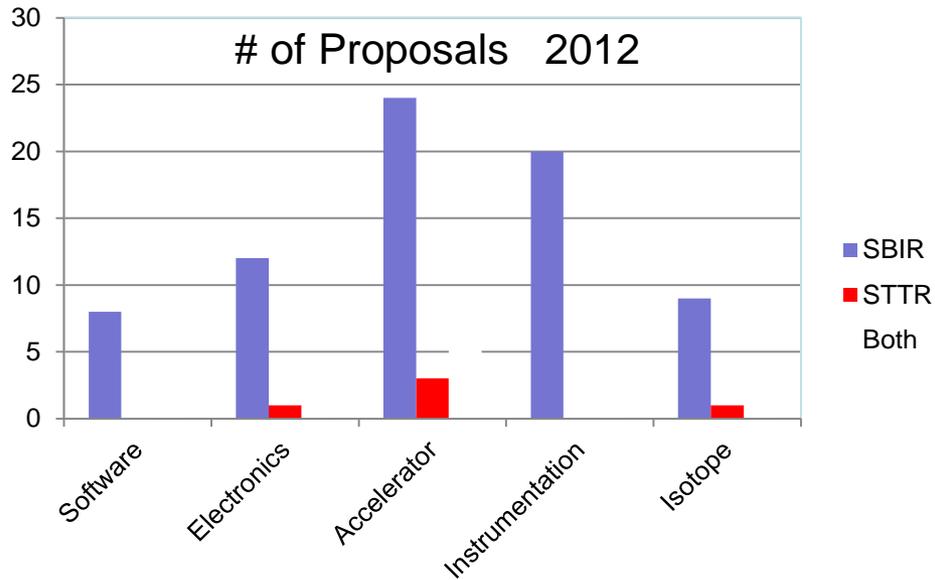
NP Phase II SBIR/STTR Applications and Awards

The increases in maximum SBIR award amounts started in FY 2011 has affected number of phase II awards that can be supported.



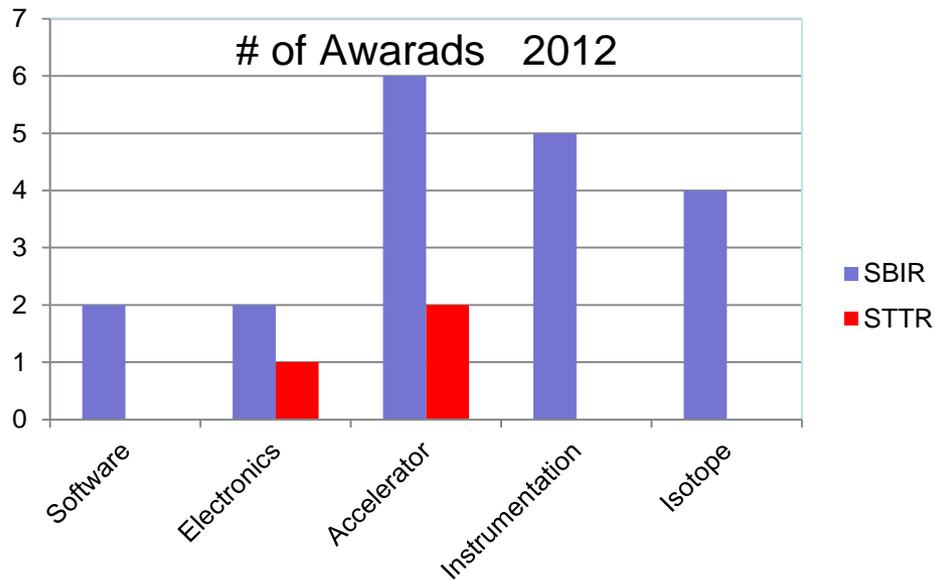
NP SBIR/STTR Statistics 2012

2012
Proposals



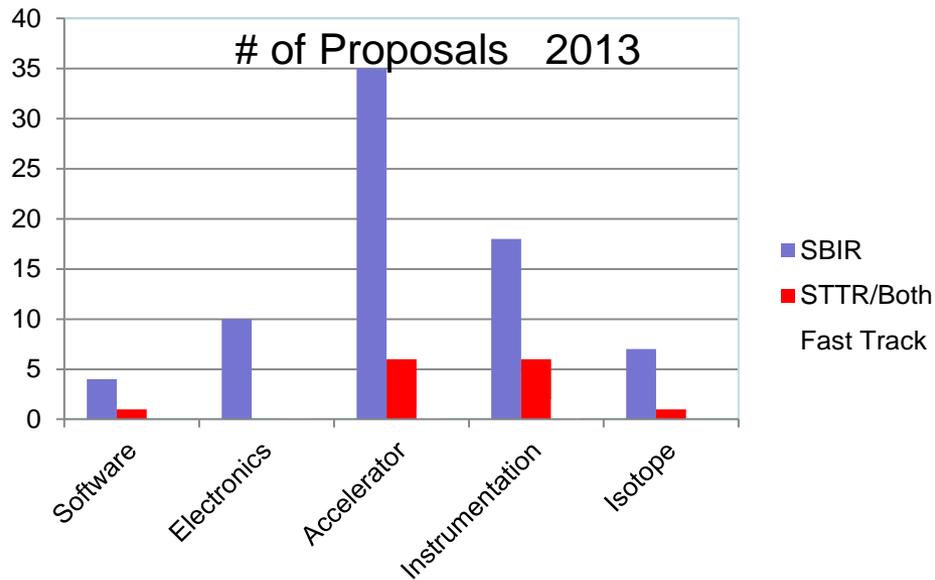
Phase I

2012
Awards



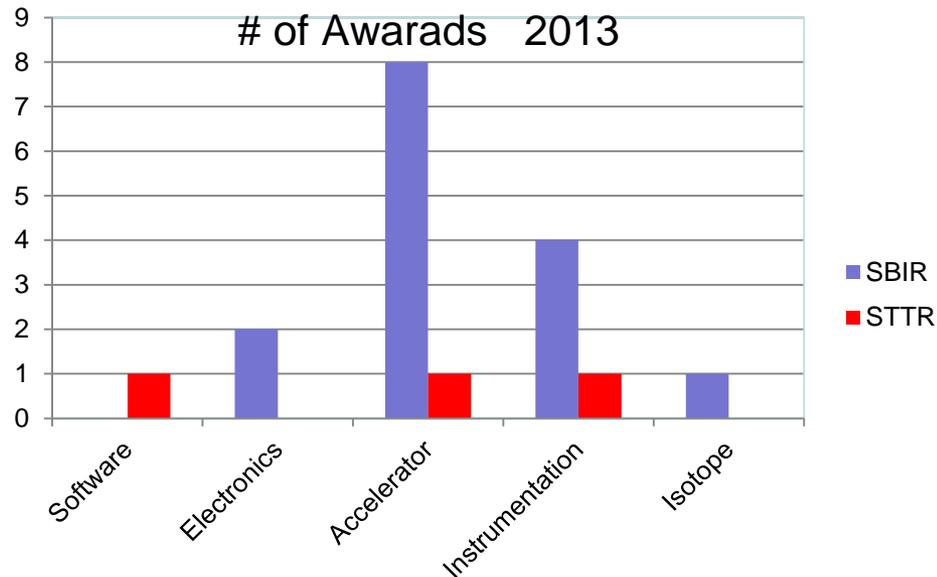
NP SBIR/STTR Statistics 2013

2013
Proposals



Phase I

2013
Awards



More Notes: DOE SBIR/STTR Program changes for FY 2014

➤ **Implementation of Office of Science PAMS system** **Portfolio Analysis and Management System (PAMS):**

- Office of Science began using PAMS to receive Grants.gov proposals in October 2011.
- The external PAMS site was launched in May 2012.
<https://pamspublic.science.energy.gov/>
- The review functionality was launched March 2013.
- All mail and panel reviews for FY14 Phase I cycles were done through PAMS.



More Notes: DOE SBIR/STTR Program changes in FY12 -15

Motivation: Started to implement reauthorization bill, improve commercialization rate, and improve administration of the programs.

➤ **Publishing Phase I solicitation twice a year**

- **Release 1:** Office of Science call for proposal August-September (FY15: w/o HEP)
- **Release 2:** Rest of DOE call for proposal December-January (FY15: and HEP)

➤ **Speeding up of processing of applications:**

- Early posting of topics
- Letter of intent required (for process of identifying reviewers)

LOI: List all potential Collaborations / subcontracts /Consultants

➤ **Increased emphasis on commercialization**

- declination of phase I application lacking a commercialization plan
- Phase II applications with poorly rated commercialization plans, independent of their technical merit review scores, may not be eligible for funding

➤ **Fast Track Proposals:**

- Programs now can elect to accept Fast Track Proposals for any topics. Fast Track is a combined Phase I and Phase II with a nominal maximum funding of \$1,150k

Sequential Phase IIB

- DOE is utilizing Phase IIB to increase the number of positive commercialization outcomes resulting from Phase II awards
- Phase IIB awards will start immediately after completing a Phase II or up to 1 year later

