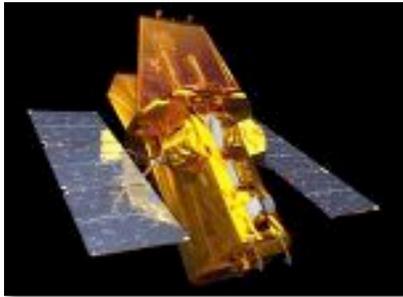


# **Astrophysics Explorer Mission of Opportunity Solicitation Overview**

**Wilton Sanders**

Astrophysics Explorer Program Scientist

Science Mission Directorate

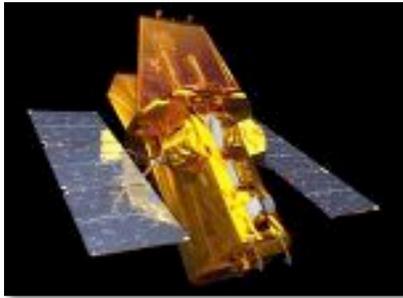


**The Explorer Program has released 2 solicitations:**

**1. Astrophysics Explorer Mission of Opportunity Program**

Element Appendix L for the Second Stand Alone Missions of Opportunity Notice (APEXMO SALMON-2 PEA L) –  
NNH12ZDA006O-APEXMO

for the purpose of soliciting proposals for **Mission of Opportunity (MO) science investigations**. All investigations proposed in response to this solicitation must support the goals and objectives of the Explorer Program, must be implemented by Principal Investigator (PI) led investigation teams, and must be implemented through the provision of space investigations



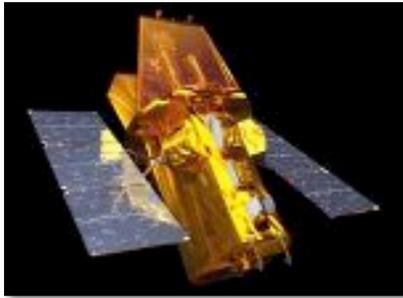
## 2. Astrophysics Explorer U.S. Participating Investigators

Program Element for the Research Opportunities in Space and Earth Sciences 2012 NRA (APEX USPI ROSES-2012 PE) – NNH12ZDA001N-APEX USPI

for the purpose of soliciting potential Explorer Program Mission of Opportunity (MO) investigations in which **investigators participate as a Co-I for an instrument, experiment, or technology demonstration** that is being built and flown by a sponsor agency other than NASA. The provision of flight hardware is not solicited through this USPI solicitation.

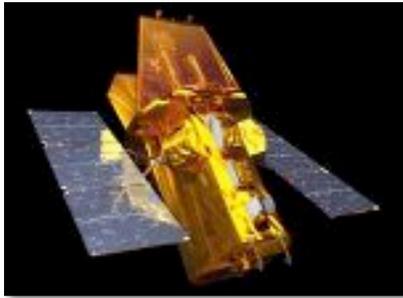
# Proposal Opportunity Period and Schedule

Milestone	Target Date
Notice of Intent to Propose	October 12, 2012
Proposal Submission Deadline	December 14, 2012 11:59 pm Eastern Time
Letters of Commitment due (w/ proposal)	December 14, 2012
Selections announced (target)	June 2013
Commitment need date for a Partner MO	December 31, 2016
Launch Readiness for Small Complete Missions	NLT December 31, 2018

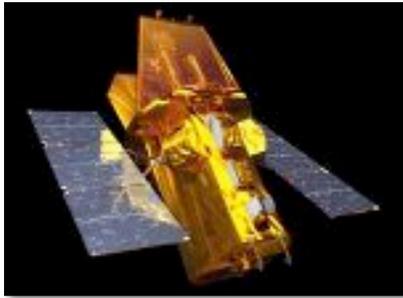


Proposals must be submitted electronically via NASA's master proposal data base system, the NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES), at <http://nspires.nasaprs.com/>.

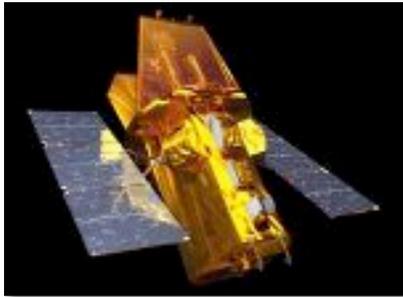
The proposal must be received no later than 11:59 p.m. Eastern Time on December 14, 2012.



- Investigations may target any astrophysics scientific investigation that advances NASA's astrophysics objectives.
- NASA's strategic goals in astrophysics are to “Discover how the universe works, explore how the universe began and developed into its present form, and search for life elsewhere.” Further information on NASA's strategic goals may be found in NASA Policy Directive (NPD) 1001.0A, *The 2011 NASA Strategic Plan*, available through NODIS or the Program Library.
- The NASA Science Mission Directorate (SMD) addresses these strategic goals by conducting programs of astrophysics science designed to address the following science research objectives:
  - Understand the origin and destiny of the universe, and the nature of black holes, dark energy, dark matter, and gravity;
  - Understand the many phenomena and processes associated with galaxy, stellar, and planetary system formation and evolution from the earliest epochs to today;
  - Generate a census of extra-solar planets and measure their properties.



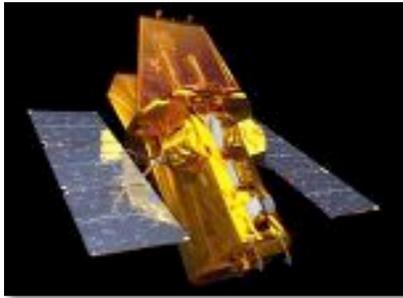
**Astrophysics Explorer Missions of  
Opportunity Program Element Appendix L  
for the Second Stand Alone Missions of  
Opportunity Notice (APEXMO SALMON-2  
PEA L) – NNH12ZDA006O Appendix L  
Requirements and Highlights**



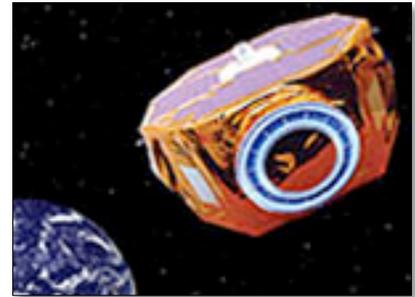
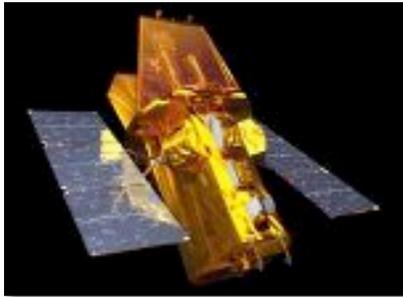
## Introduction

MO investigations traditionally have been solicited in conjunction with NASA Science Mission Directorate's (SMD) AOs for Principal Investigator (PI) led missions [e.g., Discovery, Explorer, Earth System Science Pathfinder (ESSP), Mars Scout, and New Frontiers], but this is MO only.

SALMON-2, a five-year omnibus AO, incorporates PEAs for general MO proposal opportunities, as well as focused proposal opportunities for specific flight opportunities. The AO includes U.S. and non-U.S.-led mission opportunities.

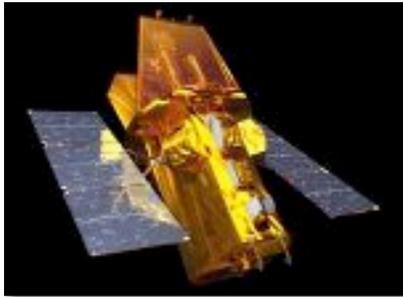


- SALMON-2 is intended to provide more frequent opportunities for science and technology investigations on space flight missions that advance the high priority science, technology, and exploration objectives of NASA's Mission Directorates.
- Each PEA is a separate and independent solicitation, has its own solicitation number in NSPIRES, its own proposal due date, and its own funding available for selected investigations.
- e.g., NNH12ZDA006O Appendix L, is the APEXMO SALMON-2 PEA. Investigations are funded from the Explorer Future Missions budget line.



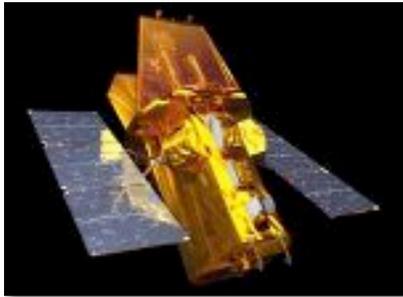
**Three Mission of Opportunity types may be proposed in response to this APEXMO SALMON-2 PEA:**

- **Partner Missions of Opportunity (PMOs)**
- **New Missions using Existing Spacecraft (NMESs)**
- **Small Complete Missions (SCMs) including:**
  - Investigations requiring flight on high-altitude scientific balloon platforms
  - Investigations on the International Space Station
  - Investigations launched as secondary payloads or launched as hosted payloads

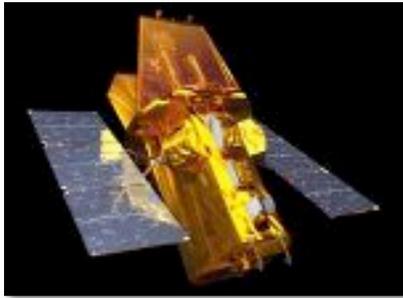


## Cost and Schedule Constraints

- \$60M PI-managed cost cap in Fiscal Year 2013 dollars
- \$30M PI-managed cost cap in FY2013 dollars for high-altitude scientific balloon missions
- For PMOs, PI must provide evidence that the sponsoring organization is funding the primary host mission, and that NASA commitment is required NLT December 31, 2016.
- For small complete missions, launch date is NLT December 31, 2018.

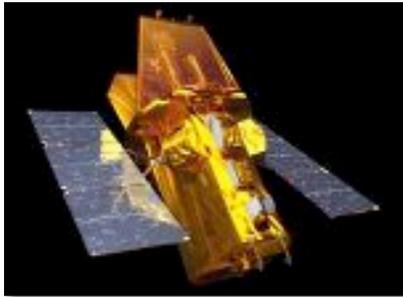


- Investigations intended to be flown on the European Space Agency (ESA) Euclid mission or Jupiter Icy Moons Explorer (JUICE) mission are not solicited in this PEA.
- PMO and/or USPI investigations for those missions are solicited through other NASA solicitations, which may be found at <http://nspires.nasaprs.com/>.



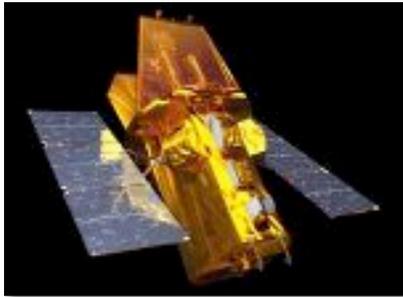
In addition to the requirements given in the SALMON-2 AO, all proposed PMO investigations must also demonstrate:

- (1) their formal relationship with the sponsoring agency's host mission (e.g., already selected contribution, invited contribution, or proposed contribution); and
- (2) the status of the host mission within the sponsoring agency (i.e., Pre-Phase A, Phase A, or Phase B), including the level of commitment that the sponsoring agency has made to complete the mission.



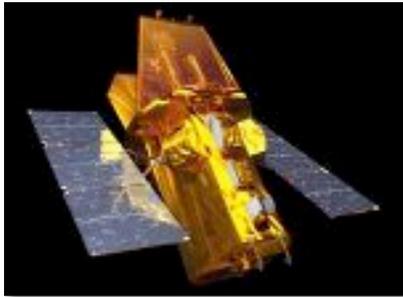
In addition to requirements given in SALMON-2, all PMO requiring flight on the ISS must *also* provide a Letter of Acknowledgement from the Space Station Payload Office.

- (1) a description of the formal relationship with the sponsoring agency's host mission for access and accommodation at the space station,
- (2) identification of known challenges and/or conditional provisions for access or accommodation of the host mission, and
- (3) a description of the level of technical interchange and negotiation required to mature the host mission's provisions for access and accommodation.



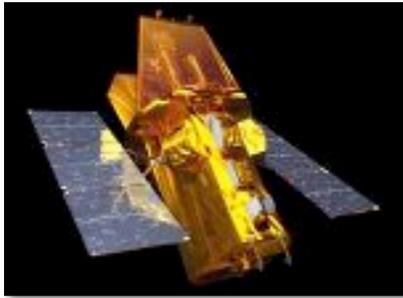
In addition to requirements given in SALMON-2, all proposed small complete missions, with the exception of ISS or Balloon MO, must also provide a Letter of Commitment from the program or agency providing access to space.

- (1) a detailed description of the proposed provisions for access to space, and
- (2) the status of those proposed flight provisions within the sponsoring program or agency (i.e., conditional, confirmed, conceptual, etc.) including the level of commitment that the sponsoring program/agency has made to support that flight opportunity.

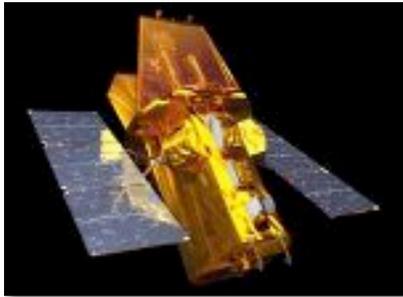


In addition to requirements given in SALMON-2, all small complete mission investigations requiring flight on the ISS must also provide a Letter of Feasibility from the Space Station Payload Office:

- (1) a preliminary assessment of the feasibility of proposed provisions for access to and accommodation on ISS,
- (2) identification of known challenges and/or conditional provisions for access or accommodation, and
- (3) a description of the level of technical interchange and negotiation required to mature the proposed provisions for access and accommodation.

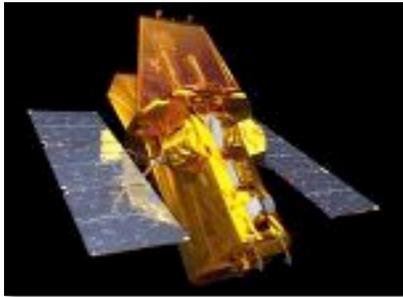


## **Additional Elements for Salmon-2 PEA investigations**



## Science Enhancement Options

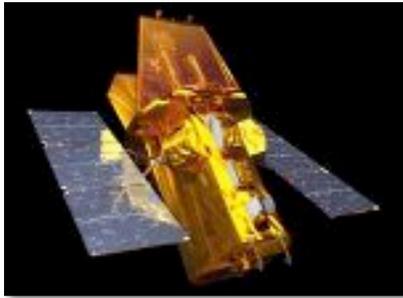
- Activities such as extended missions, guest investigator programs, general observer programs, participating scientist programs, interdisciplinary scientist programs, and/or archival data analysis programs, where appropriate, have the potential to broaden the scientific impact of investigations. Such optional activities may be proposed as Science Enhancement Options (SEOs).
- NASA considers any proposed SEO activities as optional.



## Science Enhancement Options

- Costs for proposed SEO activities must be defined, but will not count against the PI-Managed Mission Cost cap. Funding requested for SEO activities prior to Phase E should be minimized.
- As these proposed activities are optional and are not included within the cost capped baseline investigation, the science enabled by SEO activities is **not considered as part of the scientific merit of the proposed investigation.**

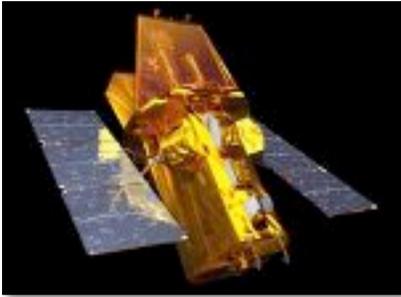
See SALMON-2 AO Section 5.2.5, Requirements 19-21



## **Student Collaboration**

Proposals may define a Student Collaboration (SC) that is a separate part of the proposed investigation.

The SC can take the form of an instrument development, an investigation of scientific questions, analysis and display of data, development of supporting hardware or software, or other aspects of the investigation.



## **Student Collaborations**

If a proposal contains a SC, the proposal shall demonstrate that the proposed SC is clearly separable from the proposed Baseline and Threshold Investigations, to the extent that the SC will not impact the investigation in the event that the SC is not funded; that the SC fails during flight operations; or that the SC encounters technical, schedule, or cost problems during development.

**The intrinsic merit of student collaborations will not be evaluated at this time.**

See SALMON-2 AO Section 5.7.2, Requirements 71-72

# Education and Public Outreach

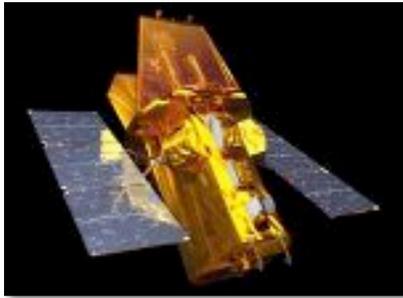
The quality of E/PO plans is not a consideration in the selection of proposals. Therefore, E/PO plans are not needed at this time.

**Requirement 68:** Proposals shall not designate an E/PO lead and shall not include a plan for a core E/PO program.

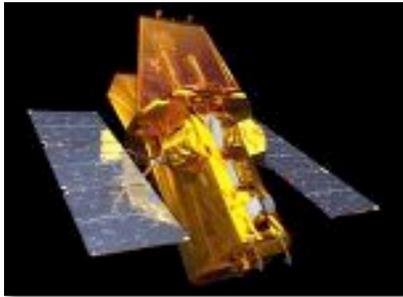
**Requirement 69:** Proposals shall identify the funding set aside for the implementation of a core E/PO program, & it shall be included in the PI-Managed Mission Cost.

**Requirement 70:** Statement of commitment from the PI shall be included.

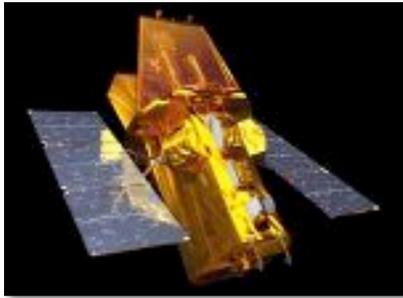
A preliminary plan for a core E/PO program will be submitted no later than KDP-B.



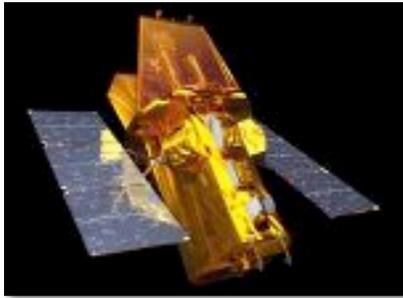
**Astrophysics Explorer U.S. Participating  
Investigators Program Element for the  
Research Opportunities in Space and Earth  
Sciences 2012 NRA (APEX USPI  
ROSES-2012 PE) – NNH12ZDA001N  
Appendix D.11  
Requirements and Highlights**



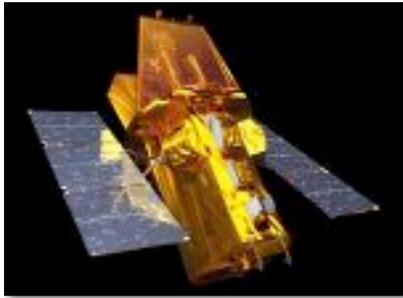
- The purpose is to solicit potential Explorer Program Mission of Opportunity (MO) investigations in which investigators participate as a **Co-I for an instrument, experiment, or technology demonstration** that is being built and flown by a sponsor agency other than NASA.
- Proposals submitted in response to the Astrophysics Explorer USPI ROSES PE must comply with the requirements in the ROSES-2012 NRA and in this Astrophysics Explorer USPI PE. Proposals submitted in response to this solicitation are not required to comply with the requirements in the SALMON-2 AO.



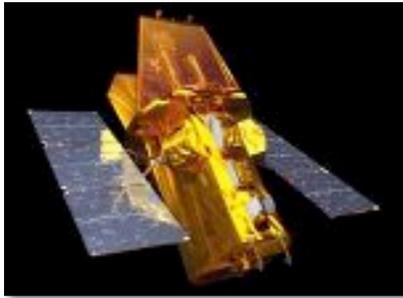
- Investigations requiring the provision of flight hardware are not solicited through this USPI solicitation.
- A proposed investigation as a USPI on a non-NASA mission or instrument may take any form that clearly and demonstrably enhances the scientific output of the mission, benefits the U.S. scientific community, and enables U.S. astrophysics science community access to a highly valued scientific data set.



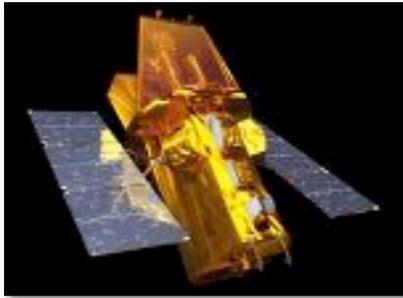
- The proposed investigations can vary in duration, to include just the prime science mission phase, or to begin at the post confirmation development phase (e.g., for calibration analysis) through the prime mission operational phase, depending on the science requirements of the investigation.
- All investigations shall include adequate time for data analysis and archiving following the conclusion of the prime mission phase.



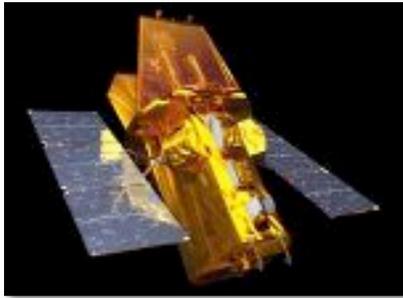
- This program element solicits new investigations only. Proposals whose intent or purpose is to extend or directly supplement existing investigations already funded for approved space flight missions or other NASA-supported research programs are not appropriate for this program element.
- Investigators who are members of the science teams of ongoing missions and who propose to use data from those missions must clearly demonstrate that the proposed research is distinct from their existing efforts.



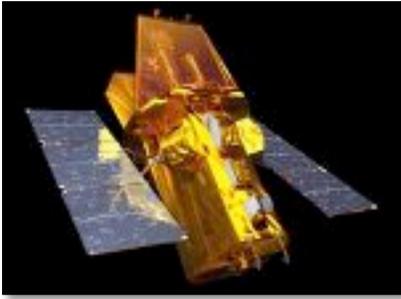
- For individual investigators, the cost for selected proposals is expected to be on the order of \$125K per selected investigation per year through the prime science mission phase, plus one year for additional data analysis and archiving for the baseline scientific investigation.
- For a team of investigators, the cost is expected to be on the order of \$125K per investigator per year, up to a maximum combined team total on the order of \$1M per year, through the prime science mission phase plus one year for additional data analysis & archiving.



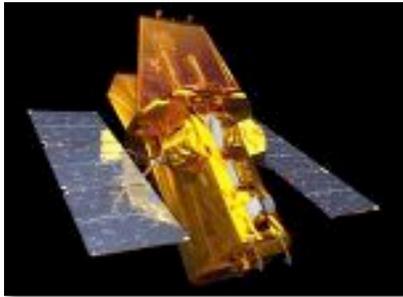
- Proposals should be for the entire duration of the proposed investigation. This may be no more than through the prime science mission, plus one year for additional data archiving for the baseline scientific investigation. The budget justification in the body of the proposal should cover this entire period.
- Awards will be for a maximum of five years.



- If the proposed investigation is for more than five years, then a continuation proposal may be submitted for a new award covering a period of up to five additional years. The progress and accomplishments of the initial five years of the investigation will be reviewed as part of the decision making process for the continuation award.
- The budget for only the first five years of the investigation should be entered into the NSPIRES or Grants.gov electronic budget forms.

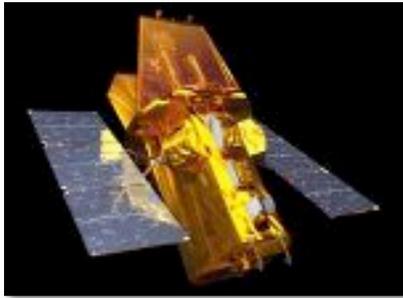


# Programmatic Factors



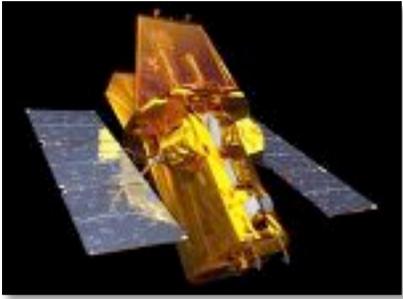
NASA expects to select nominally one Astrophysics Explorer Mission of Opportunity. If multiple selectable investigations are proposed with combined costs within the available funding (approximately \$60M), NASA may select more than one proposed investigation.

The decision between these selection options will be based upon the proposals received in response to the Astrophysics Explorer MO program element appendix of the SALMON-2 AO, and to the Astrophysics Explorer USPI program element of the ROSES NRA.



A single selection meeting will select proposals, and all Astrophysics Explorer selections will be funded from the same Astrophysics Explorer future mission budget;

- there is no separate budget for PMO, SCM, or NMES Explorer MOs
- there is no separate budget for USPIs.



**Questions?**