



Established Program to Stimulate Competitive Research (EPSCoR)



NASA EPSCoR ([RII Track-4:@NASA](mailto:RII-Track-4@NASA))

POCs: Ali Shaykhian, Ph.D.

M: 321-289-0512

Dawn Martin, Ph.D.

(321) 747-8093

email: Agency-EPSCoR-RII-Track-4@mail.nasa.gov

<https://nasa.sharepoint.com/sites/RII-Track-4/SitePages/Home.aspx>



EPSCoR Research Infrastructure Improvement Track-4 (RII Track-4):

- Provides awards to build research capacity in institutions
- Transform the career trajectories of investigators
- Further develop individual research potential
- Collaborations with investigators from the nation's premier private, governmental, or academic research centers



RII Track-4 (Continued):

- Catalyze the development of research capabilities and the creation of new knowledge
- Broaden direct participation of demographically diverse individuals, institutions
- Impact and potentially transform the recipient's research career trajectory
- Initiate new collaborative relationships/expand existing partnerships in ambitious new directions, or to make use of unique research facility



Who May Submit Proposals:

Proposals may only be submitted by the following:

- Institutions of Higher Education (IHEs) - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, justify why the project activities cannot be performed at the US campus.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4



RII Track-4 offers two sub-tracks:

- RII Track-4:NSF
 - Focuses on any area of science or engineering that NSF supports
- RII Track-4:@NASA
 - Focuses on faculty from institutions with high enrollments of students from underrepresented populations in STEM

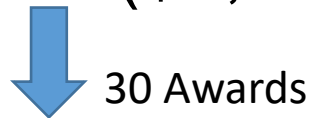
The period of performance of awards is up to 2-years



National Science Foundation (NSF)

RII Track-4

Track-4:NSF (\$9,000,000)

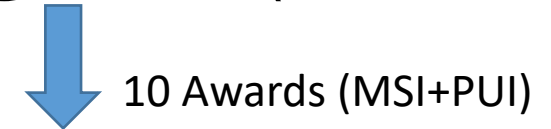


30 Awards

Research Collaborations with private,
governmental, academic institutions



Track-4:@NASA (\$3,600,000)



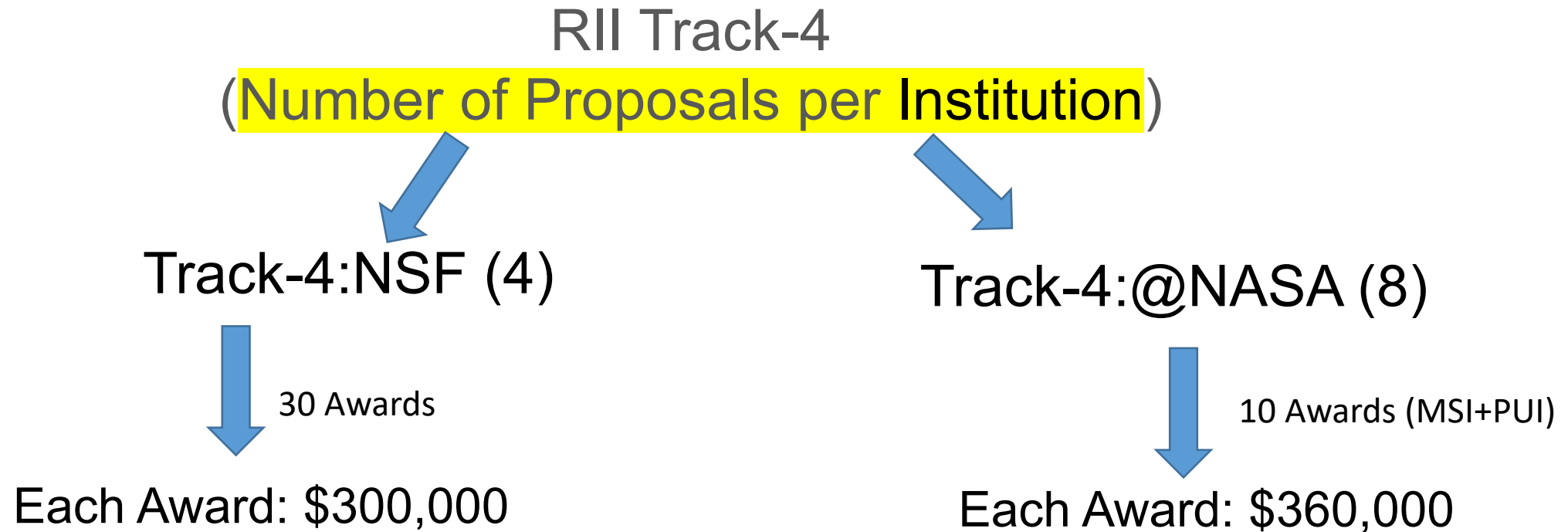
10 Awards (MSI+PUI)

Research Collaborations with
NASA Scientists/Engineers



Period of Performance: 24 months

NSF+ NASA: \$12,600,000 Research Investments to benefit research infrastructure!





Principal Investigators:

- Only single-PI (no co-PIs)
- Faculty - early-career, career-track appointment
- Assistant or Associate Professor rank (or equivalent)
- May not concurrently hold other NSF awards of equal caliber

In both sub-tracks, the RII Track-4 provides opportunities for the participation of one trainee, who must be an **undergraduate** or **graduate student** enrolled full-time in an accredited degree program, or a **postdoctoral researcher** from an EPSCoR jurisdiction. Staff members, such as technicians or lab assistants could be considered as trainees when properly justified.



Principal Investigators:

- Letter of Support from the PI's supervisory administrator

RII Track-4, Faculty Fellows collaborating with NASA are required to:

- be Lawful Permanent Residents
- U.S. Citizenship may be required for selected NASA research facilities
- Know, fellowship is contingent upon matching the applicant with a NASA Engineers/Scientists



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



Who May Submit Proposals:

In addition, for RII Track-4:@NASA opportunities, PIs must be employed by an institution that is from at least one of the five categories:

1. Proposals submissions are permitted from Minority Serving Institutions (MSIs)
2. Proposals submissions are permitted from institutions of higher education that primarily serve populations of students with disabilities.
3. Proposals submissions are permitted from women's colleges.
4. Proposals submissions are permitted from two-year colleges.
5. Proposals submissions are permitted from Primarily Undergraduate Institutions (PUIs).



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



Track-4:@NASA includes Institutions with high enrollments of students from underrepresented populations

MSIs:

- Historically Black Colleges and Universities (HBCUs)
- Hispanic-serving institutions (HSIs)
- Tribal colleges or universities (TCUs)
- Alaska Native-serving institutions
- Native Hawaiian-serving institutions
- Predominantly Black Institutions
- Asian American and Native American Pacific Islander-serving institutions
- and Native American-serving nontribal institutions.

PUI:

PUIs are accredited colleges and universities (including two-year community colleges) that have awarded 20 or fewer Ph.D./D.Sci. degrees in all NSF-supported fields **during the combined previous two academic years.**

Please see the U.S. Department of Education's definitions and lists of eligible postsecondary institutions ([MSI definitions and eligibility information](#))



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4

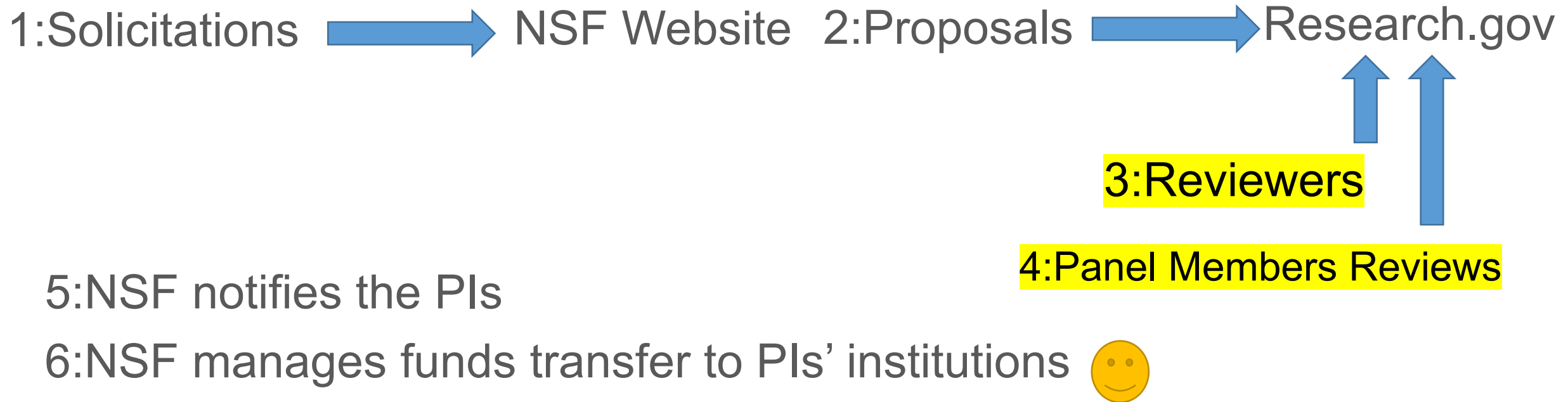


Solicitations → Proposals → Awards





RII Track- 4:NSF & RII Track- 4:@NASA



Note: Research.gov familiarization (demo): <https://web.demo.research.gov/proposalprep/#/proposal-prep>



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



How does it work?

NASA Scientists/Engineers share with us their Research Focus Areas (RFAs)

NASA Scientists/Engineers serves as research Collaborators, Mentors, or TMs

NASA Scientists/Engineers review the Research Investigators' proposals

NASA Scientists/Engineers are required to spend 1-6 months with Research Investigators

Time spent with Research Investigators can be continuous or sporadic

Information Exchange is done through EPSCoR RII Track-4 SharePoint site

<https://nasa.sharepoint.com/sites/RII-Track-4/SitePages/Home.aspx> (NASA Scientists/Engineers)

RFAs are of important priority to NASA



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



How does it work?

- Research Investigators review the NASA Research Focus Areas (RFAs)
- Research Investigators identify RFAs of their interests
- Research Investigators submit a short form (US Citizenship, academic rank, short resume)
- EPSCoR office reviews all submissions for eligibility requirements
- When match is found:
 - An introductory meeting between NASA Scientist/Engineer and Research Investigator will be arranged

<https://www.nasa.gov/stem/epscor/rii-track-4/index.html> (Research Investigators)



How does it work?

EPSCoR office process the NASA Research Focus Areas (RFAs)

Serves as a go-to between Research Investigators and NASA researchers

- Provides Guidance to Research Investigators (NSF proposal requirements):
 - Review requirements
 - Panel Selection
- Will conduct multiple workshops



Examples: Research Focus Areas (RFAs)

- Model Zoo” of pretrained biological models for transfer learning on space biology datasets
- Utilization of Machine Learning Approaches for Efficient Estimation of Vector Magnetic Fields from SDO/HMI and SoHO/MDI
- Advanced Lithium-Ion Battery Cells: Wide operating temperature, low temperature, high temperature, high specific energy/high energy density cells, specialized electrolytes
- Electrochemical Sensors: Includes electrochemical impedance spectroscopy, dielectric spectroscopy.
- Molten Regolith Electrolysis: High temperature electrolysis of lunar and Martian soils to generate oxygen gas and metals.
- CO2 Reduction: Electrochemical conversion of CO2 to various products including carbon monoxide and ethylene.
- Chemical Heat Sources: High specific enthalpy systems including lithium-sulfur hexafluoride reactors for long-lived heat for planetary and lunar missions
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- Development of Uranium based Fuels for Nuclear Thermal Rocket Propulsion
- Solar power from the cell to the array level, ground and in-space testing of photovoltaic systems, mission support of solar powered spacecraft
- Satellite and Ground Communication systems
- Algorithm development for, and applications of, optical/thermal imagery for studying freshwater and coastal regions
- Technology development for enabling small satellite rendezvous, proximity operations, and capture for close free-flying inspection of a high-value asset and cargo transfer. Innovative reliable flight-ready low-cost sensors to enable rendezvous and proximity operations
- Earth Science Remote Sensing
- Remote Sensing of Land Use/Cover Changes, Vegetation (forestry, agriculture), Fires



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



RII Track-4 Proposal Preparation!



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



Proposal Preparation

- Only single-PI Proposals
- Project Description (compelling way and describe how the activities will lead to long-lasting impacts to the PI's research career trajectory)
- Not exceed 10 pages (including text as well as any graphic/illustrative materials)
- Expected outcomes & timeline for meeting the project goals and objectives
- Intellectual Merit
- Broader Impacts
- Project Summary (1 page maximum)
- References Cited - bibliographic citations (no page limit)
- Biographical Sketch
- Budget Pages and Budget Justification
- Current and Pending Support
- Facilities, Equipment, and Other Resources



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



Proposal Preparation

Project Description (10 pages maximum):

- should present the activities for the proposed fellowship in a clear, detailed, compelling way and describe how the activities will lead to long-lasting impacts to the PI's research career trajectory
- must articulate the motivation and context for the proposed fellowship project using language understandable to a scientific audience with broad disciplinary expertise
- the research plan for achieving the goals and objectives should be presented in sufficient detail to facilitate reviewers' assessment of the proposal
- should specify the expected outcomes from the fellowship
- should include a timeline for meeting the project goals and objectives
- explain clearly how the PI will specifically benefit from the unique opportunities provided by the fellowship
- should explain in detail the role of the host site in achieving the research goals and objectives
- how the benefits to the PI's research career will be sustained beyond the award period
- describe the fellowship project's expected Intellectual Merit and Broader Impacts
- the narrative should describe the project's research-focused activities and how these activities will enhance the PI's individual research capacity beyond the duration of the fellowship period
- contain, as a separate section within the narrative, a section labeled "Broader Impacts"
- articulate the benefits to the PI's home institution and/or jurisdiction that are expected to derive from the fellowship project

Please review the solicitation for additional details



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



Proposal Preparation

Budget Pages and Budget Justification:

Prepare budget pages for each year of support and a budget justification (not to exceed five pages)

Because the fellowship-related travel (transportation and living expenses) is expected to represent a significant component of the budget, PIs should provide sufficient detailed documentation to justify the requested expenses.

Please review the solicitation for additional details



Proposal Preparation

Facilities, Equipment, and Other Resources:

Provide a description of the relevant facilities, equipment, and other resources at the home institution or within the home jurisdiction if applicable

Only the PI's resources should be described, with emphasis on those resources needed for the project's work and especially any equipment that will be transported for use at the host site.

Any facilities, equipment, and other resources that belong to the host site and are needed for the project should be described in the project description and not in this section.

Please review the solicitation for additional details



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



Proposal Preparation

Budgetary Limitations:

- Total funds requested may not exceed \$300,000; and should have a total duration of up to 24 months
- Budgets may include up to six months of salary and fringe benefit support for the PI over the course of the fellowship
- Up to a total of six months of salary and fringe benefit support (including tuition at the home institution, if appropriate) is also allowed over the course of the fellowship for one student participant or postdoctoral researcher
- Clearly describe and justify travel expenses, to cover both the PI and one additional trainee
- Multiple trips between the home institution and the host site are allowed
- The living expense charges (Lodging, Meals, and Incidental Expenses) may not exceed the per diem rates set by the US GSA
- Additional direct costs are allowed (shipping, purchasing materials and/or supplies, publication charges, equipment, facility fees, attending conferences, or other similar costs which are directly related to the research activities)
- RII Track-4:@NASA awardees will receive additional \$60,000 from NASA EPSCoR, coordinated through the designated **jurisdiction's director**, and should help to build the awardees' research infrastructure and capacity
- Collaborators at the host institutions are not eligible to receive salary or fringe benefit support under this award

Host institutions may receive payment for accommodations provided to the PI or student-level participant during the fellowship visit; these expenses may include lodging, meals, and incidental expenses. Host institutions may also receive payment for services directly related to research activities during the fellowship visit; such costs must be consistent with established fee structures at the host institution. Up to \$10,000 may be requested for the host collaborator for travel related to the fellowship project which includes visit to the PI's home site and/or participation in conferences where the collaborative work is presented.

Please review the solicitation for additional details



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



Proposal Preparation

Please review:

NSF Proposal & Award Policies & Procedures Guide (PAPPG) for additional details:

https://www.nsf.gov/publications/pub_summ.jsp?ods_key=papp

Please review the solicitation for additional details



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



RII Track-4 Review Criteria!



Review

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge
- What is the potential for the proposed activity to advance knowledge and understanding within its own field or across different fields (Intellectual Merit)
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes
- What is the potential for the proposed activity to benefit society or advance desired societal outcomes (Broader Impacts)?



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



Review

- To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
- Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale?
- Does the plan incorporate a mechanism to assess success?
- How well qualified is the individual, team, or organization to conduct the proposed activities?
- Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



Review

- What evidence is presented to demonstrate that the proposed research outcomes can be achieved within the constraints of the fellowship period, **with the work being performed primarily at the host site?**
- How will the fellowship have a transformative impact on the trajectory of the PI's research career both during the period of the award and beyond?
- How will the fellowship yield tangible benefits to the home institution and/or jurisdiction beyond the individual benefits to the PI?
- What evidence is there that the home institution **and the host site are each** committing the necessary resources, both scientific and administrative, to lend confidence that the fellowship project will be successful in achieving its intended outcomes?



RII Track-4



Timeline!

Solicitation Release Date: November-December 2022

Proposals Due Date: April 2023

Awards are announced: September-October 2023



Faculty Fellowships, EPSCoR Research Infrastructure Improvement RII Track-4:@NASA



Questions!



EPSCoR (improve efficiency!)



Ali Shaykhian, Ph.D.
AGENCY-EPSCOR: agency-epscor@mail.nasa.gov

EPSCoR Reporting, Operations and Technical Monitor Manager



EPSCoR (improve efficiency!)



- Technical Monitors
- Annual/Final Research Progress Performance Report/Financial Reports
- Contact lists
- Inquiries to/from NSSC
- Always respond to our requests
- AGENCY-EPSCOR agency-epscor@mail.nasa.gov
- Inter-Jurisdictions collaborations



EPSCoR – Annual/Final Progress Performance Reports



1. EPSCoR Project Office emails request to the Jurisdictions

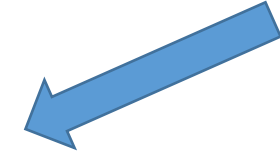
2: Research Progress Performance Report



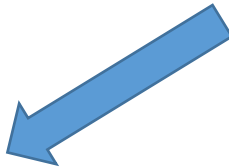
AGENCY-EPSCOR & NASA Shared Services Center (NSSC)



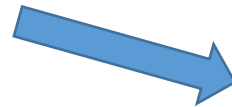
3. EPSCoR SharePoint



4: Technical Monitors Review



5. EPSCoR Project Manager



6. Contact Jurisdictions (if needed!)



Should know (PoP): Annual Performance Reports are due **60** days prior to each year's anniversary date.
Final Reports are due **120** days after the performance end date.
No-Cost Extensions are due **60** days prior to performance end date.



NASA EPSCoR -Technical Monitors



Technical Monitors:

- Each research project has a NASA Technical Monitor (TM)
- TMs are Subject Area Experts within the Mission Directorates/NASA research Labs
- TMs provides guidance and technical advice to the research team
- TMs review annual/final reports and provide feedback on project's progress to the EPSCoR project office
- TMs visit the research site to interact with research team in person
- Increasing the P.I. and research team's awareness of related/relevant research in NASA



NASA EPSCoR -Technical Monitors



Technical Monitors are not responsible ...

- EPSCoR project office is responsible to ensure the awards are administered
- EPSCoR project manager is responsible to concur with significant changes to the research
- NSSC Grants Officer is responsible to approve significant changes to the research
- NSSC is responsible to approve all No-Cost Extensions (NCEs)
- 2nd (and after) NCEs must be concurred by the EPSCoR Project Manager



EPSCoR – Contact Lists



Help us to reduce spam!

- Research Progress Performance Report - Contact List
- Financial Reports Contact List

EPSCoR office copies all individuals in your contact list requesting information

Please **review** your contact lists, inform us of any changes



EPSCoR – NSSC



Please always copy:

AGENCY-EPSCOR agency-epscor@mail.nasa.gov in all your communications with NSSC

- Follow up with your own communications (on occasions, things happen to disappear!)
- Let us know if/when we need to follow up with your inquiries



EPSCoR – communications



- Please respond to our requests
- We have NO interests to spam you
- Please respond to our requests – multiple inquiries take our time
- Did you know that, we now have over 280+ active awards
- AGENCY-EPSCoR agency-epscor@mail.nasa.gov should be your go-to for all communications
- Our goal is to respond to all inquiries no later than 48-hours



EPSCoR – Inter-Jurisdictions collaborations



- Research Investigators must be from EPSCoR Jurisdictions
- Science Investigators may wish to include Non-EPSCoR Jurisdictions' researchers
- What I know, all Research Investigators must be from EPSCoR Jurisdictions
- If not enough expertise available in your jurisdiction to perform the proposed research
 - Reach out to other EPSCoR Jurisdictions and seek partnering with your research proposal
- Inter-Jurisdictions collaborations may benefit to all Jurisdictions



RII Track-4



Questions!