Demystifying EPSCoR Opportunities

Office of Research Development

October 9, 2025

Division of RESEARCH
Research Development

Agenda

- Demystifying EPSCoR – Dr. Dan Noneaker, Clemson
- SC EPSCoR – Dr. Nadim Aziz, SC EPSCoR
- SC NASA EPSCoR – Dr. Steve Creager, Clemson

Division of
RESEARCH
Research Development

Demystifying EPSCoR

Dr. Dan Noneaker

SC EPSCoR Committee

Division of
RESEARCH
Research Development

DEMYSTIFYING EPSCoR

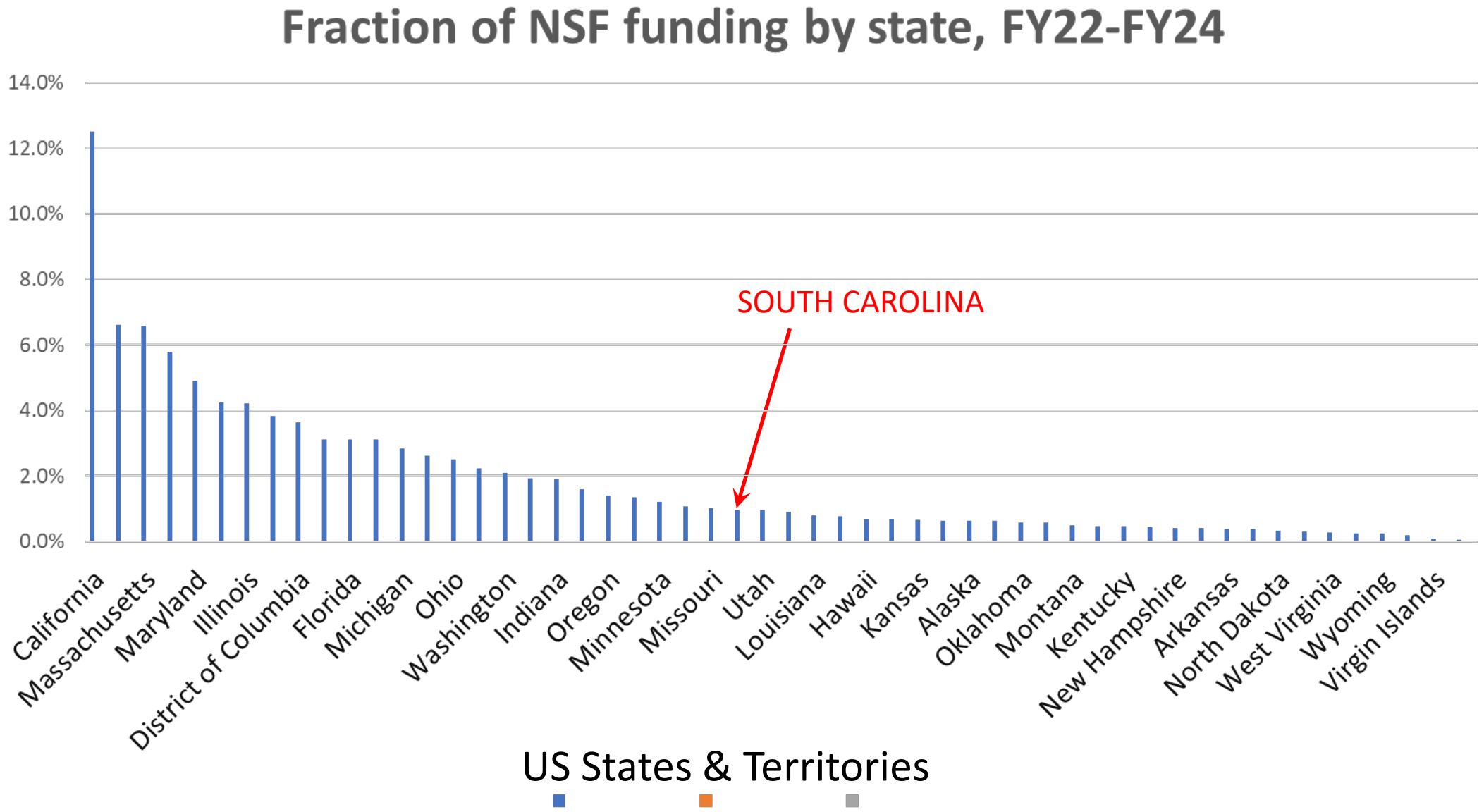
Dr. Nadim Aziz
SC EPSCOR

Dr. Steve Creager
Clemson University

Dr. Dan Noneaker
Clemson University

SC EPSCoR

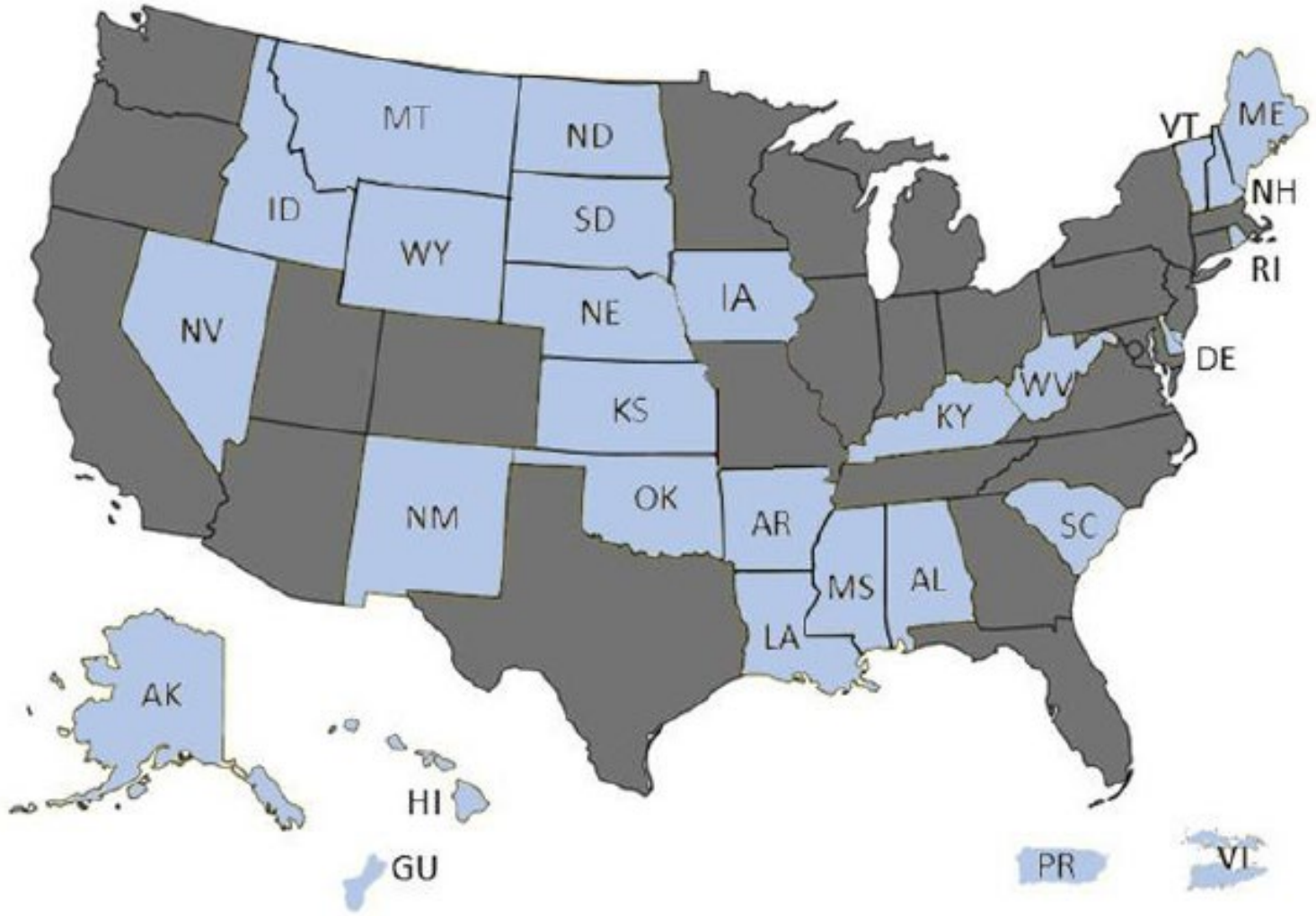
NASA EPSCoR South Carolina


Fraction of NSF funding by state, FY22-FY24
14.0%
12.0%
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
SOUTH CAROLINA
California
Massachusetts
Maryland
Illinois
District of Columbia
Florida
Michigan
Ohio
Washington
Indiana
Oregon
Minnesota
Missouri
Utah
Louisiana
Hawaii
Kansas
Alaska
Oklahoma
Montana
Kentucky
New Hampshire
Arkansas
North Dakota
West Virginia
Wyoming
Virgin Islands
US States & Territories

Motivation, History of EPSCoR/IDeA Programs

- **Concern: geographical concentration of federal R&D funding**
- **1977: National Science Board study highlights concern**
- **1979: NSF Experimental Program to Stimulate Competitive Research (EPSCoR) funded ($1 million)**
- **1988: US statute establishes purpose for EPSCoR**
- **1991-1996: Four additional EPSCoR agencies (DOD, DOE, NASA, USDA) & NIH Institutional Development Award (IDeA)**
- **2017: "Experimental" changed to "Established" in title**
- **Each state/territory qualifying for an agency's EPSCoR/IDeA program is designated a *jurisdiction* within that program.**

NSF EPSCoR Jurisdictions



Funding of EPSCoR and IDeA by Agency

AGENCY	FY23 ENACTED	FY24 ENACTED	FY25 CR	FY26 HOUSE APPROPs	FY26 SENATE APPROPS
NSF	$245 M	$250 M	$250 M	$250 M	$255 M
NIH	$426 M	$431 M	$431 M	TBD	TBD
DOD	$20 M	$20 M	$20 M	TBD	$30 M
DOE	$35 M	$35 M	$35 M	$35 M	TBD
NASA	$26 M	$26 M	$26 M	$26 M	$26 M
USDA	$68 M*	$67 M*	$67 M*	15%*	15%*
TOTAL	**$820 M**	**$828 M**	**$828 M**		

Each rounded to nearest million. (Rounding error in TOTAL.) FY26 appropriations status as of July 24.
*15% of NIFA AFRI total.

NSF EPSCoR Programs

- **NSF EPSCoR (FY25: $250M, 28 jurisdictions)**
  - **Research Infrastructure Improvement (RII) programs**
  - **EPSCoR Research Fellowships**
  - **Co-funding for EPSCoR-jurisdiction proposals to other NSF programs**

NIH IDeA Programs

- **NIH IDeA (FY25: $427M, 24 jurisdictions)**
  - **IDeA Networks of Biomedical Research Excellence (INBRE)**
    - **USC School of Medicine Columbia administers state's award**
  - **Centers of Biomedical Research Excellence (COBRE)**
  - **IDeA Clinical and Translational Research Program**
  - **IDeA Regional Entrepreneurship Development (I-RED)**
  - **Co-funding for R01 and R15 awards**

National Institutes of Health

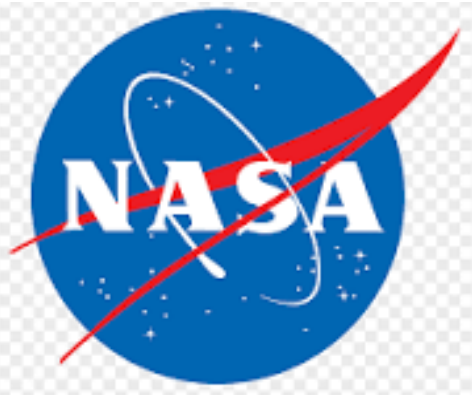
DOD EPSCoR (DEPSCoR) Programs

- **DEPSCoR (FY25: $25M, 37 jurisdictions)**
  - **Research Collaboration Thrust**
  - **Capacity Building Thrust**
  - **Co-funding for DOD DURIP, YIP programs**

DOE EPSCoR Programs

- **DOE EPSCoR (FY25: $35M, 27 jurisdictions)**
  - **Implementation Grants**
  - **Building EPSCoR-State/National Laboratory Partnerships**
  - **Co-funding of DOE Office of Science Early Career Awards**

NASA EPSCoR Programs



- **NASA EPSCoR (FY25: $26M, 27 jurisdictions)**
  - **SC NASA EPSCoR Office: College of Charleston**
  - **More detail later in presentation**

USDA EPSCoR Programs

- **USDA EPSCoR (FY25: ~$60M, 26 jurisdictions)**
  - **Food and Agricultural Science Enhancement (FASE) Grants**
  - **15% of total Agriculture and Food Research Initiative (AFRI) funding**

SC EPSCoR

Dr. Nadim Aziz

Director of SC EPSCoR

Division of RESEARCH Research Development

Helping Increase South Carolina's Research Capabilities

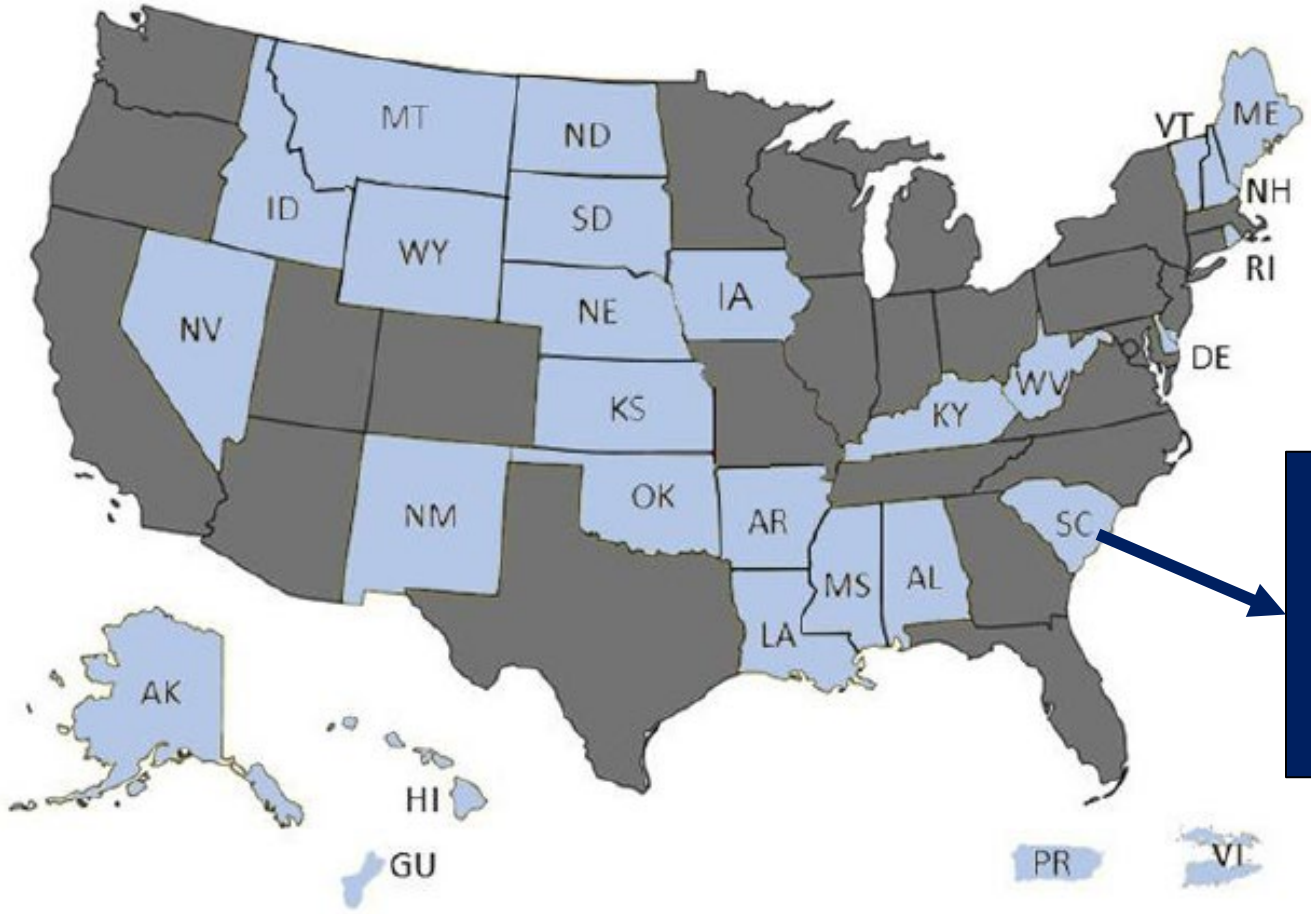
Nadim M. Aziz

SC EPSCoR

www.scepscor.org

NSF EPSCoR
ADVANCING GEOGRAPHIC DIVERSITY IN STEM

Jurisdictions

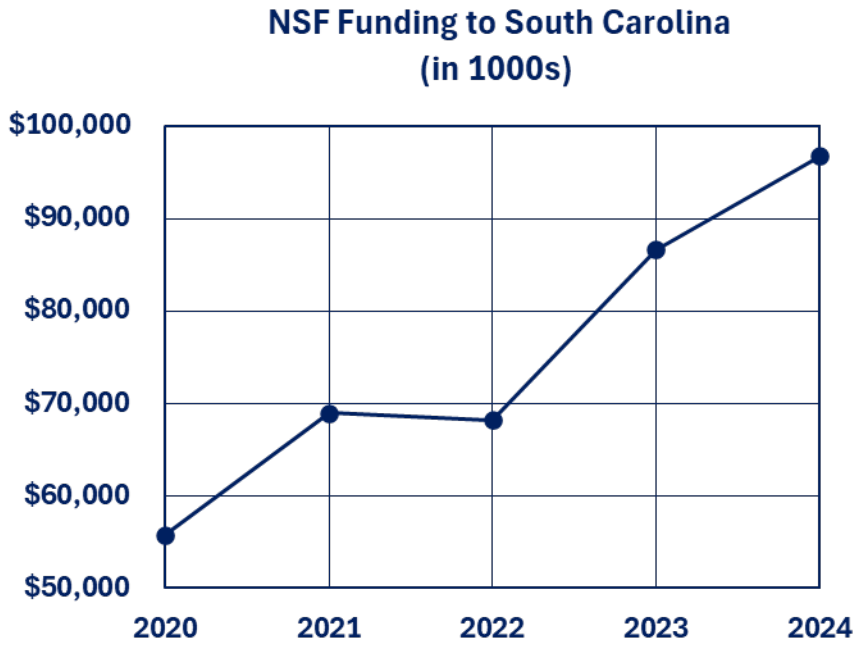


SC EPSCoR Mission

Improve South Carolina's Research Capabilities

NSF EPSCoR Eligibility

- **Jurisdiction must receive less than 0.75% of all NSF funding**
  - Calculated over the previous five years
  - Subtract NSF EPSCoR RII and Conference/Workshop funding
  - Subtract NSF funding to other federal agencies in the jurisdiction
- **SC received (FY20 - FY24)**
  - NSF funding = $376,327,000
  - NSF EPSCoR funding = $25,579,000
  - NSF funding to federal agencies in SC= $77,466,000
- **Total NSF funding = $40,132,476,000**
- **SC % of adjusted NSF funding = 0.68%**



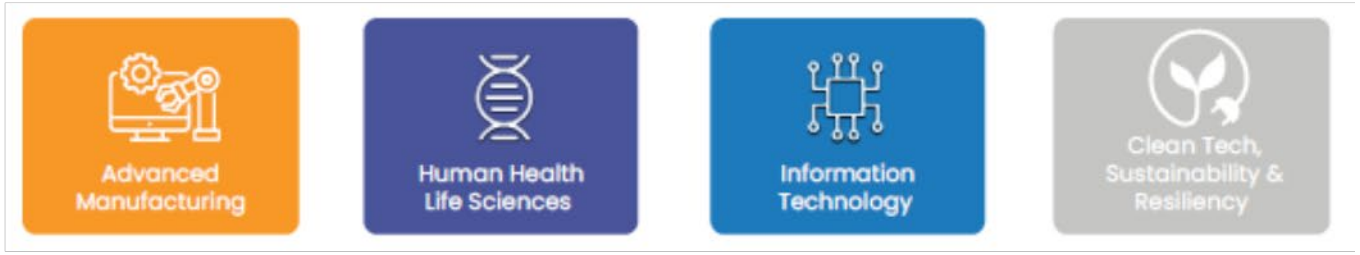
SC EPSCoR State Committee

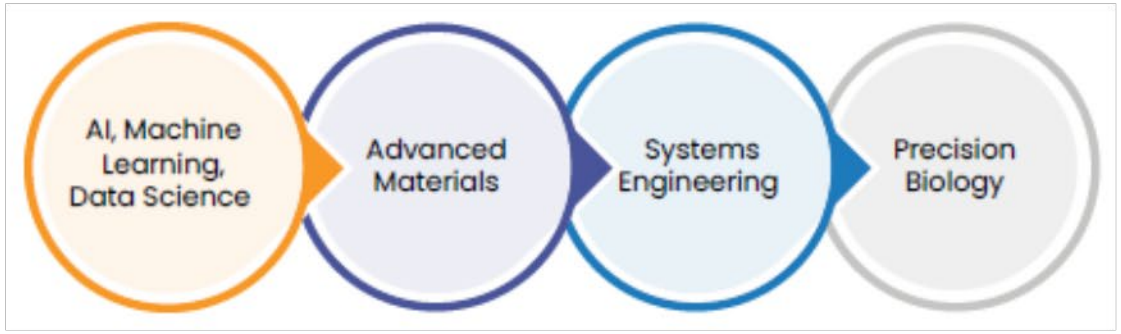
Timothy Stemmler, Chair	Vice President for Research	Medical University of South Carolina
Nadim Aziz	Director	SC EPSCoR
Mark Barnes	Science & Technology Deputy Associate Laboratory Director	Savannah River National Lab
Sonja Barkley	Manager of Innovation and Entrepreneurship	South Carolina Department of Commerce
Ken Deans	President and CEO	Health Sciences of South Carolina
Tanju Karanfil	Senior Vice President for Research, Scholarship and Creative Endeavors	Clemson University
William Kirkland	President and CEO	South Carolina Research Authority
Mike Matthews	Associate Vice President for Research	University of South Carolina
Prakash Nagarkatti	Senior Research Advisor to the President	University of South Carolina
Daniel Noneaker	Associate Dean for Research	Clemson University
Seth Pritchard	Interim Dean, School of Natural and Environmental Sciences	College of Charleston
Susie Shannon	President and CEO	SC Council on Competitiveness
Kelly Steinhilper	Vice President for Communications and Strategy	South Carolina Technical College System
Louis Whitesides	Vice President for Research	South Carolina State University
Private HBCUs	Vacant	Vacant

Vision 2030: South Carolina Science and Technology Plan

Four Areas for Action

- High Tech Industry Growth
- Innovation and Entrepreneurship
- Research Competitiveness
- STEM Education (K-20)





NSF EPSCoR
ADVANCING GEOGRAPHIC DIVERSITY IN STEM

Investment Strategies

- Focused EPSCoR Collaborations (**FEC**). Requires collaboration with other EPSCoR Jurisdictions *(Topic: Building capacity towards use-inspired research)*
- Faculty Research Fellowships for junior faculty
- **E-CORE** – Supports jurisdictions in building capacity in one or more targeted research infrastructure cores that underlie the jurisdiction's research ecosystem
- **E-RISE** – Supports the incubation of research teams and products in a scientific topical area that links to research priorities identified in the submitting jurisdiction’s approved Science and Technology (S&T) Plan.
- EPSCoR Graduate Fellowship Program (**EGFP**)

NSF EPSCoR Collaborations for Optimizing Research Ecosystems (E-CORE)

E-CORE aims to build capacity in one or more targeted research infrastructure cores within an EPSCoR jurisdiction's research ecosystem.

- $10M over four years (renewable)
- Diverse academic institutions and government, industry, and nonprofit partners
- Leverage partnerships to meet core research infrastructure needs
- Grow self sustaining research ecosystems

Address challenges and opportunities in research infrastructure
Build capacity
Develop pathways to broaden participation

NSF EPSCoR Research Incubators for STEM Excellence (E-RISE)

E-RISE aims to developing and implementing sustainable networks of diverse research teams to collaborate on critical jurisdictional research priorities.

- $8M over four years (renewable)
- Research capacity-building within a chosen research topic;
- Development of a skilled workforce
- Culture of collaboration and engagement
- Integrate the research with societal impacts
- Promote sustainability

Build a Jurisdiction-wide network teams of researchers
Develop high quality hypothesis or problem-driven research projects
Develop effective STEM education and workforce development opportunities

Since 2017, SC was awarded 2 NSF EPSCoR RII Track 1 Awards leading to the hiring of 21 faculty members at research universities, PUIs and HBCUs.

(Total faculty hires since 2009: 43)

Statewide Faculty Hires by Track 1 Funds 2017 - 2025

SC EPSCoR Source of Funding and Operation

- **State Appropriations**
  - Most SC EPSCoR funds are from the state
  - Supports activities to increase South Carolina research capabilities
  - Supports operation
- **Federal Funds**
  - From the NSF EPSCoR Track 1 awards
  - Supports operation
- **Operation**
  - Housed at the South Carolina Research Authority (SCRA)
  - Clemson University is fiscal agent for the Track 1 since 2023
  - USC is still the fiscal agent for a few projects from the previous Track 1

SC EPSCoR Office

Nadim Aziz
(Director)

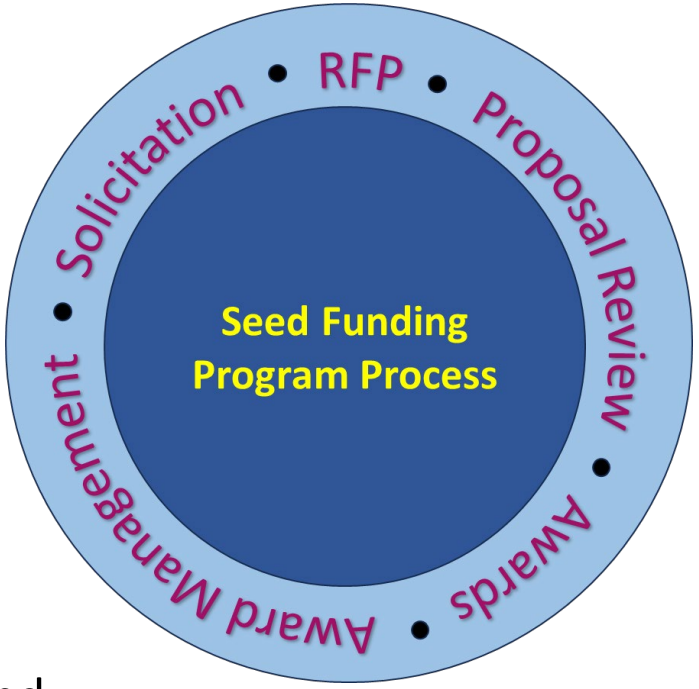
Megan Souter
(Grants and Contracts Manager)

Steve Ramirez
(Communications Manager)

Admin. Coordinator (Vacant)

SC EPSCoR Funding Programs

- **GAIN - G**rants for **A**pplications in **I**ndustry and **N**etworking - to encourage research by junior faculty from research universities in areas of the Track 1 project.
- **GAIN-CRP - G**rants for **A**pplications in **I**ndustry and **N**etworking **C**ollaborative **R**esearch **P**rogram - to encourage research collaboration between research universities and PUIs in areas of the ADAPT in SC project.
- **SPARK - S**TEM **P**athways for **A**dvancement, **R**esearch, and **K**nowledge program that aims to increase the number of students interested in STEM degrees.
- **Phase-0** - to encourage and support South Carolina small businesses in their proposal development activities to compete effectively for SBIR and STTR Federal funding.
- Other initiatives depending on available resources and need



Seed Funding to Support ADAPT in SC and S&T Plan (2 years)

Program	Focus	Max Amount per Proposal*	Proposals Funded	Recent Changes
GAIN	Research PI (Single Investigator)	$60,000	6	Additional $15,000 allowed for Clinical/Industry Collaborator
GAIN CRP	Research PI + at least 1 Co-PI (CRU/PUI Collaboration)	$70,000	7	Additional $15,000 allowed for Clinical/Industry Collaborator
SPARK	Increasing interest in STEM degrees	$25,000	5	Award amount increased to $25,000
Phase-0	Small Business	$10,000	5	No Change

*Indirect Cost and student tuition are not allowed

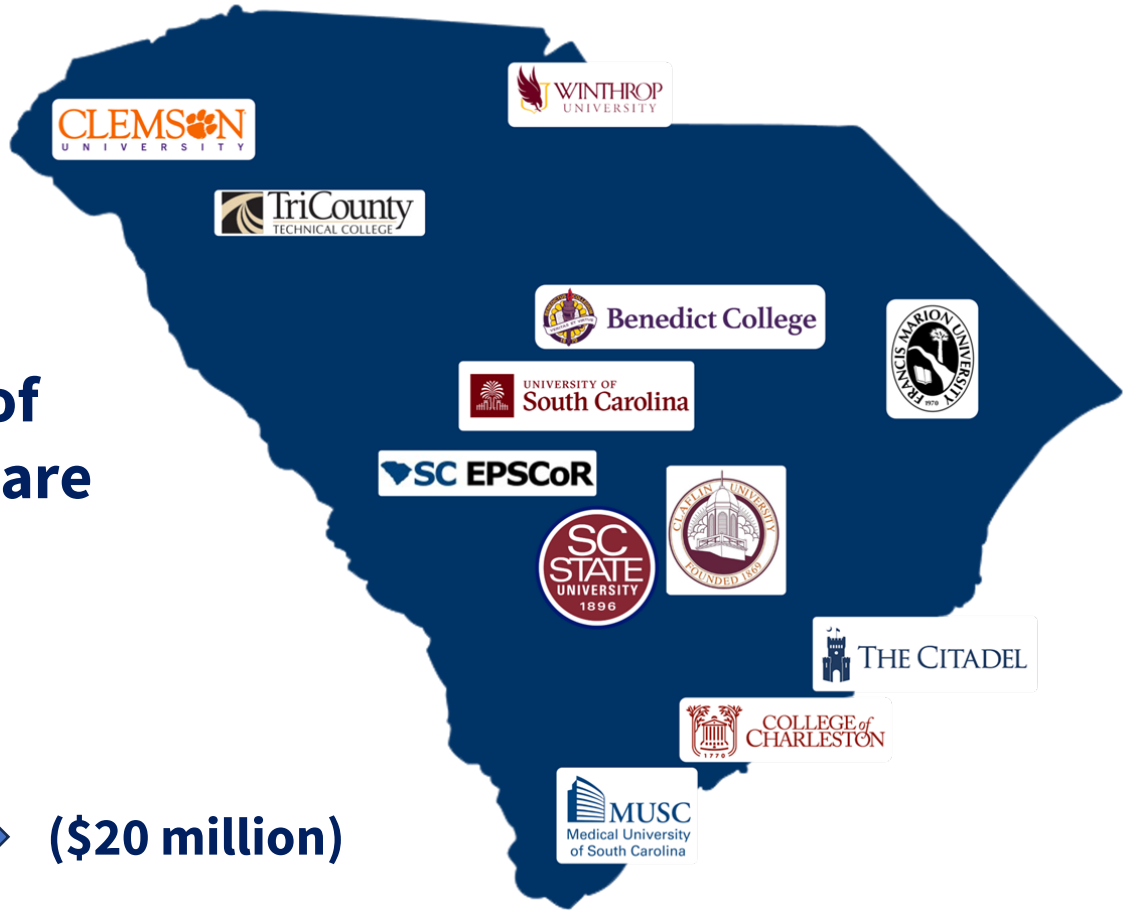
GAIN Program

- **Purpose of the GAIN program**
  - Provide seed funds to investigators to pursue funding from federal sources and others
- **Topics**
  - Must be aligned with the **ADAPT in SC** Project
- **Who May Apply?**
  - Single investigators from Clemson, USC or MUSC
  - Early career faculty – less than 10 years in academic position
  - Allows the inclusion of a clinician or and industry collaborator
- **Funding Amount per Award**
  - $60,000 (for up to 18 months)
  - Up to an additional $15,000 can be included for a clinician or the industry collaborator.

GAIN CRP Program

- **Purpose of the GAIN CRP program**
  - Provide seed funds to investigators to pursue funding from federal sources and others
- **Topics**
  - Must be aligned with the **ADAPT in SC** Project
- **Who May Apply?**
  - Faculty from any SC college or university
  - Must be a collaboration between R1 and PUI
  - Allows the inclusion of a clinician or an industry collaborator
- **Funding Amount per Award**
  - $70,000 (for up to 18 months)
  - Up to an additional $15,000 can be included for a clinician or the industry collaborator.

ADAPT in SC



AI-enabled Devices for the Advancement of Personalized and Transformative Healthcare in South Carolina

Supported by the National Science Foundation Award #OIA-2242812 → **($20 million)**

Cost-Share → **($4 million)**

ADAPT in SC Project Areas

Thrust 1

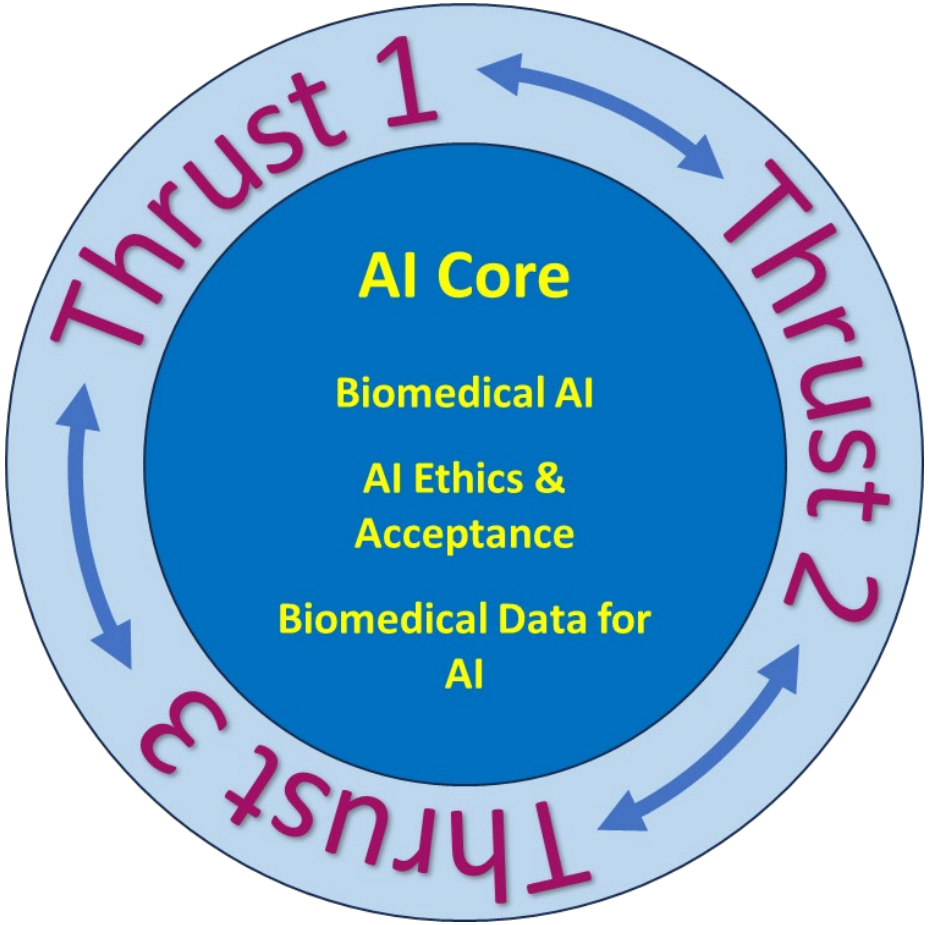
XAI-Enabled Biomedical Devices for **Diagnostic and Planning** Applications

Thrust 2

DL-Imaging Model Enabled Biomedical Devices for Personalized **Prognostic and Treatment** Applications

Thrust 3

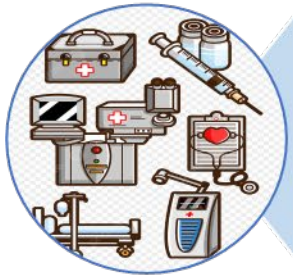
DT-Enabled Biomedical Devices for **Rehabilitation and Therapy**



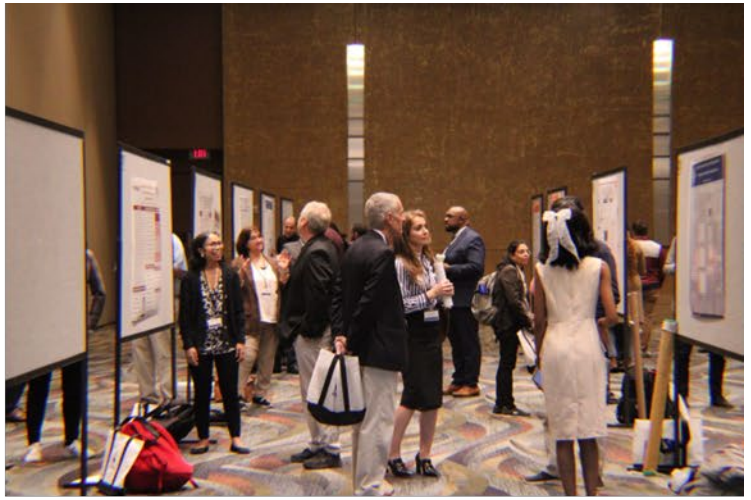
ADAPT in SC Project Areas

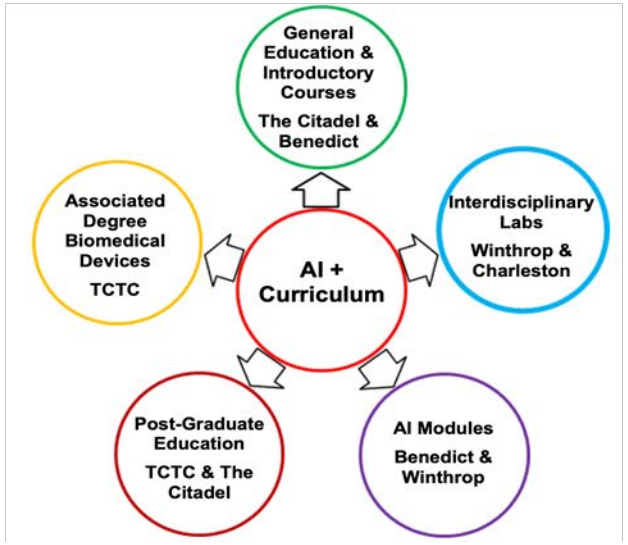
Education and Workforce Development

Broadening Participation



Industry Engagement





GAIN and GAIN CRP Research Topics

- **Biomedical AI**

  Development of theoretical foundations of biomedical AI, AI-ready data acquisition and preprocessing, multimodal data fusion technologies, deep learning algorithms, physics-informed ML models, and software tools to facilitate the use of mechanistic and AI models, sometimes with limited amounts of data.

- **XAI-enabled Biomedical Devices for Diagnostic and Planning Applications**

  Use of explainable AI (XAI) to improve the explainability of the diagnostic or treatment decisions made from multimodal clinical data to provide insights into important causal factors and to obtain domain experts' trust, high prediction accuracy, and safe, continuous workflows from initial diagnosis to treatment end.

GAIN and GAIN CRP Research Topics

- **DL-Imaging Model-Enabled Biomedical Devices for Personalized Prognostic and Treatment Applications**

  Creation of DL models for AI-enabled biomedical devices for prognosis and/or treatment from limited data. The research should aim to advance the field of AI-enabled medical devices for prognosis and/or treatment. The primary outcome should be fundamental knowledge that governs generating high-performance, generalizable DL algorithms from limited data.

- **DT-Enabled Biomedical Devices for Rehabilitation and Therapy**

  The use of AI-enabled digital twins (DTs) to develop a system for an individual patient so that various available rehabilitation treatment regimens or active medical treatment pathways can be monitored and analyzed, and the outcome inferenced.

SPARK Program

- **Purpose of SPARK program**
  - Provide seed funds to support activities that increases student's interest in STEM
- **Topics**
  - Must be aligned with *Vision 2030: South Carolina Science and Technology Plan*
  - Engaging undergraduate students in research, conferences, meetings and symposia, other creative ideas
- **Who May Apply?**
  - Faculty from any SC college or university
- **Funding Amount per Award**
  - $25,000 (for up to 18 months)

Phase-0 Program

- **Purpose of Phase-0 program**
  - Provide funds to investigators to submit SBIR/STTR proposals
- **Topics**
  - Must be aligned with Vision 2030: South Carolina Science and Technology Plan
- **Who May Apply?**
  - Small businesses from South Carolina
- **Funding Amount per Award**
  - $10,000 (for up to 18 months)
  - If topic is aligned with the ADAPT in SC project, the PI may request an additional $3,000 for and undergraduate student internship

Proposal Submission Deadlines

Program	Focus	Proposals Due
GAIN	Research PI (Single Investigator)	**September 11, 2025**
GAIN CRP	Research PI + at least 1 Co-PI (CRU/PUI Collaboration)	**December 4, 2025**
SPARK	Increasing interest in STEM degrees	**October 9, 2025**
Phase-0	Small Business	**January 15, 2026**

Special Initiatives

Stimulus Research Program (2017)

To increase research collaboration between research universities and PUIs/HBCUs

(Two-year awards at $300k/award)

Funded Four Projects involving 10 colleges and universities

Faculty Research Development Academy (2024 -)

To provide faculty with the necessary skills and resources to enhance their research productivity and competitiveness in securing external funding

Total 22 faculty Participants from 12 PUIs and HBCUs

Major Equipment Program (2025)

To provide funds to support the purchase of research equipment by faculty

($50K/Award Max)

Funded 17 awards to 2 Research Universities and 8 PUIs and HBCUs

NSF EPSCoR RII E-CORE Proposal (2025)

To develop a capacity-building network to serve all SC 4-year institutions ($10M for 4 years)

11 PUIs and HBCUs

SCRA / SC EPSCoR is the lead organization

Stay Connected with SC EPSCoR

- **Biweekly e-Newsletter**
  - Focus articles related to the ADAPT in SC project
  - Seed funding announcements
  - Announcement of new funding initiatives
  - NSF information
  - Other jurisdiction related information
- **Monthly Webinar Series**
  - Faculty and Student Research
  - Industry partners
  - Technology Transfer and IP
  - Others

ADAPT in SC SC EPSCoR

The ADAPT in SC RII Track-1 Project is supported by the U.S. National Science Foundation Award #OIA-2242812

August 19, 2025

View this email in your browser

Seed Funding Awards Announced!

The SC EPSCoR Program is pleased to announce the following GAIN and GAIN CRP Awards. These two seed funding programs are to encourage research in areas related to **ADAPT in SC.** The GAIN Program is limited to early career faculty researchers at South Carolina's comprehensive research universities. This year, four GAIN awards were made as follows:

Data-driven, AI-guided design and development of micro-batteries for implantable medical

Questions?

Nadim.Aziz@scra.org

Megan.Souter@scra.org

Steve.Ramirez@scra.org

www.scepscor.org

SC NASA EPSCoR

Dr. Steve Creager

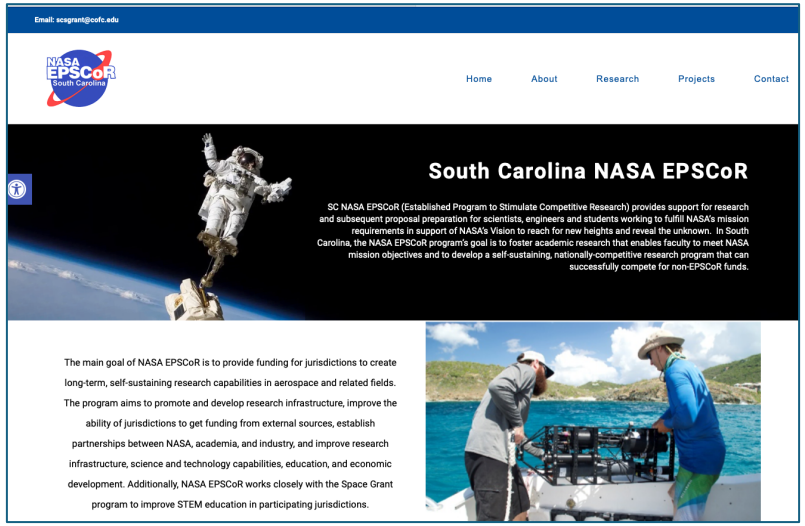
Clemson Liaison for the SC NASA Space Grant Program

Division of RESEARCH
Research Development

SC NASA EPSCoR

Presented by Steve Creager, Associate Dean in SCIENCE and Clemson liaison for the SC NASA Space Grant program

SC NASA EPSCoR



https://scnasaepscor.charleston.edu

SC NASA Space Grant

https://scspacegrant.charleston.edu

CAUTION: This material is pending approval of the FY26 budget.

NASA Has Five Mission Directorates

ARMD

Aeronautics

NASA explores technologies that reduce aircraft noise and fuel use, get you gate-to-gate safely and on time, and transform aviation into an economic engine at all altitudes.

STMD

Space Technology

NASA technologies developed for spaceflight benefit our everyday life. The Artemis program proves and matures what those technologies can do and reduces risk for exploration of Mars and beyond.

SMD

Science

NASA and the nation's science community use space observatories conduct scientific studies of the Earth from space to visit and return samples from other bodies in the solar system, and to peer out into our galaxy

ESDMD

Exploration Systems Development

NASA's Artemis program is defining and creating the steps path from Earth back to the Moon and on to Mars, including the Orion capsule, the Space Launch System, Exploration Ground Systems, the Gateway, and Human

SOMD

Space Operations

NASA's work in beyond low-Earth orbit includes commercial launch services to the International Space Station, exploration systems, space transportation systems, and broad scientific

Office of STEM Engagement (OSTEM)
Separate from the Mission Directorates

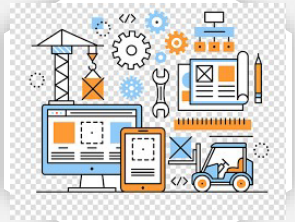
01

Next Gen Stem
Focus on K-12 STEM activities that stimulate interest in Space Careers

02

MUREP
Awards assist faculty and students in research and provide authentic STEM engagement related to NASA missions

03



Space Grant
Opportunities for higher education students that support and enhance science and engineering education and research

04

EPSCoR
NASA Research opportunities supported by faculty, undergraduate, and graduate students

05

New Generation of Aerospace Engineers and Scientists

STEM INSPIRE - ENGAGE - EDUCATE - EMPLOY
The Next Generation of Explorers

NASA EPSCoR Components

01

Research Infrastructure Development (RID), which funds the Research Grant Program (RGP) in SC

02

NSF Research Infrastructure Improvement (RII) – Track 4 @NASA (Faculty Fellowships)

03

Research (The "$750K" program)

04

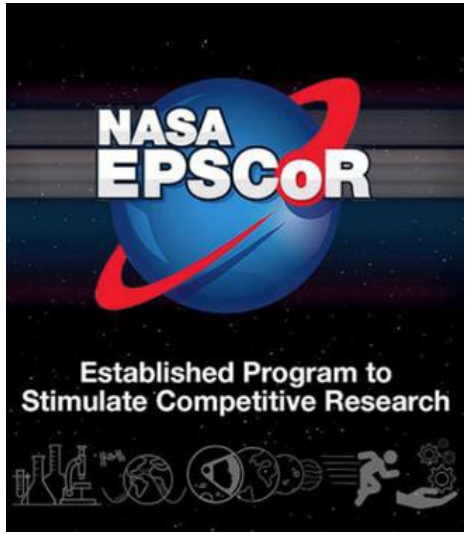
Rapid Response Research (R3)

05

International Space Station (ISS)

Increasing Technology Readiness Levels (TRLs)

NASA EPSCoR Funding; National Totals 2024-2025



28 RID Awards ($5.6M)

~ $200 K each (made to states)

16 Research Awards ($11.6M)

~ $750 K each (made to individuals)

40 Rapid Response Research (R3) Awards ($4M)

~ $100 K each (made to individuals)

5 ISS Flight Opportunity Awards ($500K)

~ $100 K each (made to individuals)

NASA / NSF EPSCoR Partnership

10 FY24 NSF-NASA Research Fellows @NASA
&
5 NSF-NASA R3
(NASA matching funds $600,000)

NASA, NSF Collaborate to Strengthen Research Capabilities

Fifteen research investigators will advance their science and technology projects while contributing to NASA's research priorities through an agency collaboration with the U.S. National Science Foundation (NSF).

NSF awarded **$4.5 million** in funding through its (EPSCoR) program to strengthen research infrastructure and NASA is providing $600,000 in matching funds

The partnership provides NSF EPSCoR Research Fellows access to the space agency's expert workforce and unique facilities and equipment. Fellows will learn new techniques, develop new connections, and advance their research, all while boosting the research capacity at their institutions.

South Carolina NASA EPSCOR Funding 2024 – 2025

Research Grant Program (RGP)

- Award size approx. $35K each from NASA plus match, typically 2:1
- Six seed grant projects in 24-25, four in 25-26.
- Research areas for current awards: AI, Astrophysics, Earth Science, Engineering and Physics

Rapid Response Research (R3)

- Award size $100K, no match needed
- Two current active awards in SC
  - CO_2 Capture & Utilization
  - Composite materials
- SC allowed only one applicant per year in a national competition. We select the applicant via internal competition

Basic Research ("The $750K program")

- Award size $750K from NASA plus $375K match (2:1)
- Three awards in SC since 2019
  - Physics-based design & manufacturing
  - Producing pure O_2 from CO_2 & Storing electricity
  - Peroxide-producing microbial fuel cells
- SC allowed only one applicant per year in a national competition. We select the applicant via internal competition

2025-2026 SC Updates

PROGRAMS THAT PROBABLY WILL CONTINUE;

Basic Research Program ($750K per award)

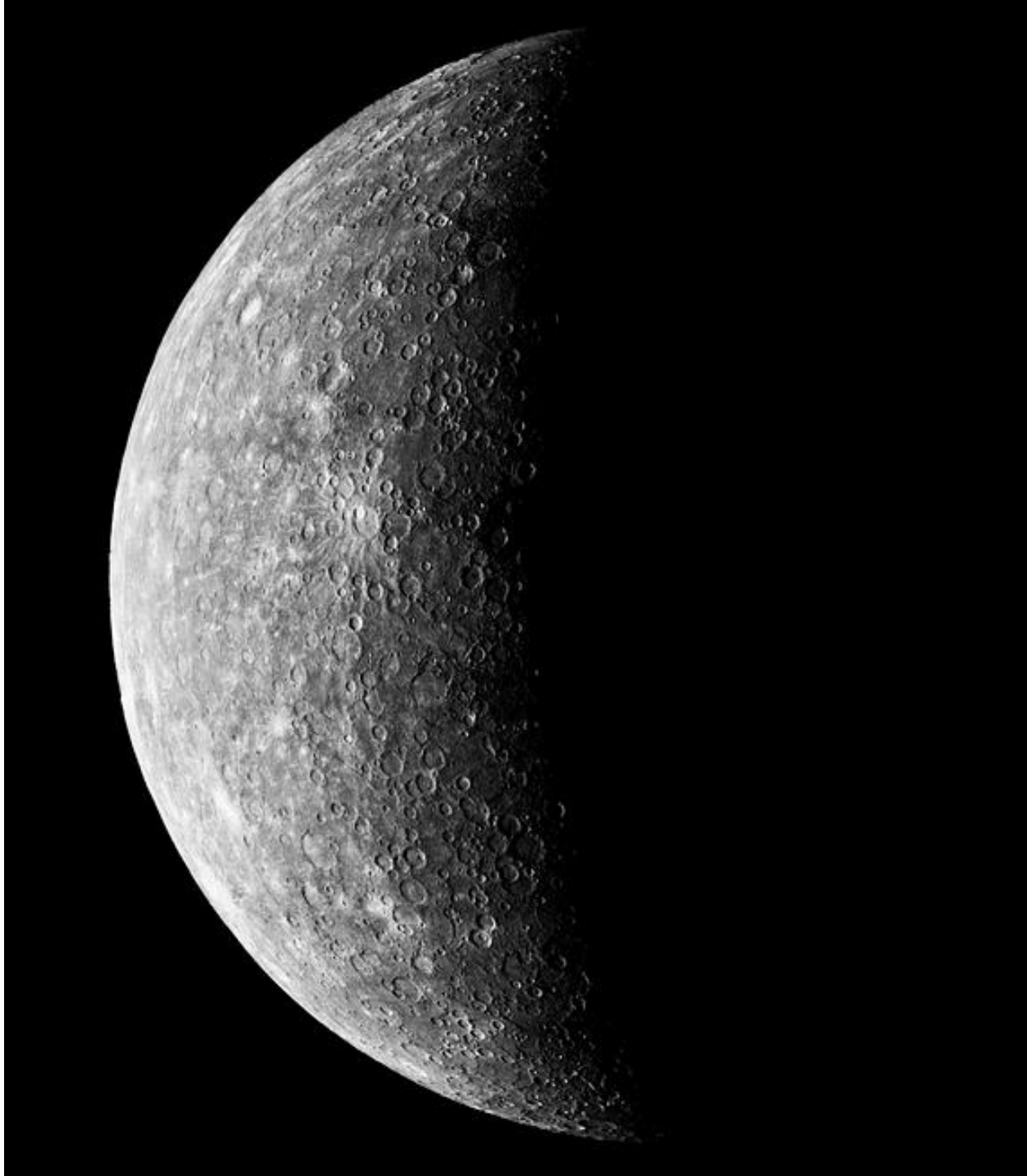
- In the past, announcement came in Sept with proposals due in Oct. This year is different…
- Announcement expected in January 2026 with proposals likely due Feb 2026
- The continuance of this program is pending due to federal budget considerations

Research Grant Program (RGP, $35K per award)

- Call for proposals expected in January 2026

PROGRAMS CURRENTLY ON PAUSE

Rapid Research Response (R3)
ISS



SC NASA Space Grant programs

Mission: *"…We promote activity in research, education, and public service related to NASA"*

Research and Education Awards Program (REAP)

- Research facilitation award (up to $20K)
- Education research award (up to $8K)
- Curriculum development award (up to $4K)
- Travel award (up to $2K)

Awards for 12 months, requires 1:1 cost sharing

Palmetto Academy (for faculty)

- Funding request can vary between $15K and $32K depending on number of students to be supported.
- Requires 1:1 cost sharing

Student opportunities

- Graduate Research Fellowship (up to $16K from NASA, requires 1:1 match)
- Kathryn Sullivan Earth and Marine Science Fellowship
- Undergraduate Student Research Award
- Technical College Research Award
- Ray Green Technology Internship
- NASA student internship
- Palmetto Academy Research (for students)

Reminder

All of this is pending survival in the FY 26 budget!

Questions?

Division of
RESEARCH
Research Development