



Louisiana Space Grant / NASA EPSCoR Program 2019 - 2021



T.G. Guzik, Director
Fall 2021 LaSPACE Council Meeting
October 29-30, 2021
East Baton Rouge Parish Main Library



Space Grant / NASA EPSCoR Management



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2019-2020 started “typical” but quickly became a challenge



- Oct - Dec 2019 2019 LaSPACE Council meeting at LSU, **Announce HASP 2020 standdown**, EPSCoR research annual reports, EPSCoR RAP, ISS, R3 RFP, **SG FY2020-2024 awarded**, RockOn 2020 RFP
- Jan - Feb 2020 SG annual & data summary, Submit R3 proposals, EPSCoR research annual report, Award RockOn 2020, Artemis Challenge proposals, SG Aug #1 proposal, EPSCoR/IDeA & SG Washington meeting
- Mar - Apr 2020 EPSCoR RAP awards, Liftoff Teacher awards, EPSCoR RID 2019-2022 Aug proposal, EPSCoR FY20 Research proposal, **COVID restrictions shutdown institutions across Louisiana**, SAFOS award, HIS/LURA / GSRA / LaACES/Senior Design/SAR RFP, RID / SG annual reports, **EPSCoR R3 & RID Aug awards**, EPSCoR research annual report
- May - Jun 2020 **All meetings virtual**, **SG Aug #1 awarded**, EPSCoR research annual reports, SMD Science Activation proposals, **Monthly COVID reports**
- July - Aug 2020 LURA/GSRA/HIS/LaACES/Senior Design/REA awards, SG Transition, **EPSCoR Research FY20 awarded**, ACES-65 flight, HASP 5 year proposal to SMD APD
- Sept - Oct 2020 **HASP 5 year awarded**, RAP / ISS / Research RFP, SG Aug #2 proposal, EPSCoR RID / Research / ISS reports, HASP 2021 CFP



Conditions are improving for 2020-2021



Oct - Dec 2020

Institutions allowing limited access to campus, Virtual LaSPACE Council meeting, EPSCoR research/R3/ISS reports, La EPSCoR project launched to ISS, **SG Aug #2 awarded**, RAP awards,

Jan - Feb 2021

HASP 2021 applications, SG annual & data summary, EPSCoR R3/ISS/SFO proposals, RockOn 2021 awarded, SG Aug #3 proposal

Mar - Apr 2021

SG virtual meeting, Joint Sea & Space Grant virtual meeting, Virtual OSTEM meeting, HIS/LURA/GSRA/LaACES/Senior Design/SAR RFP, annual, RID / SG annual reports, LaACES T/V test, RockOn virtual workshop, Summer Internship awards, EPSCoR FY21 Research proposal, MUREP EONS proposal

May - Jun 2021

LaACES FRR & ACES-66 flight, Science Activation Eclipse Proposal, **SG Aug #3 awarded**, LURA/GSRA/HIS awards, EPSCoR state virtual meeting, EPSCoR/IDeA Foundation virtual meeting, Virtual OSTEM

July - Aug 2021

End monthly COVID reports, LaACES/Senior Design/REA awards, HASP integration, SG Transition, **EPSCoR Research FY21 awarded**, EPSCoR 5 Year RID proposal

Sept - Oct 2021

HASP flight, **SG Fall 21 in Wyoming**, **EPSCoR 5 Year RID awarded**, AG Aug #4 proposal, SAFOS, 2021 LaSPACE Council Meeting at EBRPL



NASA Internship, Fellowship, and Scholarship Awards



HBCU Institutional Scholars (HIS) program:

- Support mentoring and engagement of students at LaSPACE HBCU affiliates.
- Awards from \$20,000 to \$40,000 with no match requirement
- 2020 awards to SUBR and SUNO.
- 2021 awards to SUBR, SUNO, and Grambling.

Graduate Student Research Assistance (GSRA) program:

- Five awards in 2020 to LaTech, LSU, and Tulane.
- Seven awards in 2021 to LaTech, LSU, and ULL.

LaSPACE Undergraduate Research Assistantship (LURA) program:

- Eleven awards in 2020 to LaTech, LSU, McNeese, SELU, and ULL.
- Eleven awards in 2021 to LaTech, LSU, McNeese, SELU, and ULL.

NASA Summer Internship:

- For 2020 and 2021 we focused on placing students at Stennis Space Center
- Three students from LSU, SELU, UNO during 2020.
- Two students from LSU during 2021.



Louisiana Space and Sea grant Opportunities (LaSSO)



This new program is a collaborative effort between the Louisiana Sea Grant and Space Grant programs.

Modeled after the Space Grant LURA program for supporting undergraduate involvement in research.

Proposed research is clearly aligned to a program or group within the NASA Science Mission Directorate Earth Sciences Division **AND** a NOAA Mission Research Priority or Division.

2021- 2022 is the pilot version of this program

- Awards of \$4,000 for a 9 month period with no match requirement
- Split awards between Space Grant and Sea Grant
- Made three awards to Nicholls State, NSULA, and ULL

If successful, we plan to continue and possibly expand this program.



Higher Education Awards

These programs are focused on providing college and university students with a realistic simulation of work within an aerospace project.

As these program emphasize hands-on activities and team work they were most affected by the COVID restrictions.

With institutions shutting down in spring 2020 Senior Design, LaACES, RockOn had to go virtual or just cancel.

Starting fall 2020 LaACES was developed into a full virtual program

- Workshop for faculty mentors provided guidance and expectations
- Participants were expected to attend Zoom sessions Tuesday & Thursday evening, but sessions were recorded and all material was made available online
- As COVID restrictions eased in spring 2021 we were able to have limited participation in the thermal/vacuum test and LaACES flight operations

We are continuing the virtual sessions and recording for 2021-2022, but more laboratory participation is now feasible



Louisiana Aerospace Catalyst Experiences for Students (LaACES)



2019-2020 Academic Year:

- Supported Delgado Community College, McNeese State University, Northwestern, Southeastern, and ULL
- ACES-65 flew payloads from Delgado, Northwestern and Southeastern on August 3, 2020

2020-2021 Academic Year:

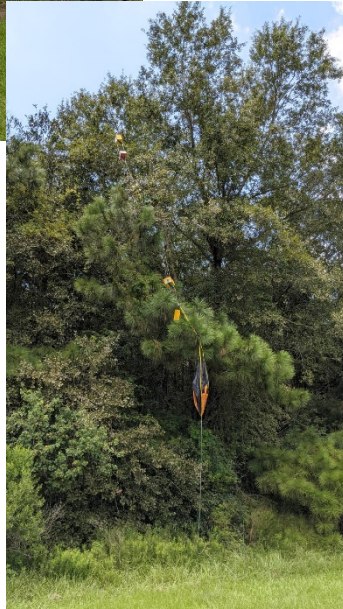
- Supported Delgado, Loyola, Northwestern, & Southeastern in a full virtual program
- Required PDR, CDR, and FRR documents, FRR presentations, and post-flight science result presentations
- ACES-66 flew payloads from Loyola, Northwestern, and Southeastern on June 6, 2021

2021-2022 Academic Year:

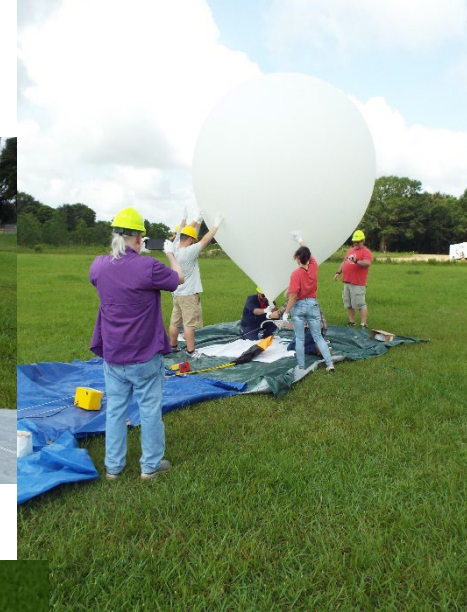
- Providing support for Loyola, Northwestern, Southeastern, McNeese, and ULL
- Continuing the use the hybrid format developed during 2020-2021

LaACES Flights 2020 & 2021

ACES-65 8/3/20



ACES-66 6/6/21





Further Higher Education Awards



Senior Design awards:

- Very popular and over subscribed program that supports most supplies / materials / travel for senior design projects.
- Made ten 2020 awards to LaTech, LSU, McNeese, SELU, and UNO
- Made nine 2021 awards to LaTech, LSU, McNeese, SELU, and ULL

RockOn!:

- Entry level sounding rockets opportunity workshop
- RockOn workshop was cancelled in 2020 due to COVID restrictions
- Held a virtual workshop during spring 2021 where every participant constructed a sounding rocket payload
- The “extra” payloads were flown on HASP in September 2021
- Supported 2021 teams from LSU, McNeese, NSULA, and ULL

SAFOS:

- Support (up to \$25k) for advanced flight opportunities as funds are available
- Provided support for a RockSat-C project at SELU



RockOn! 2020 and 2021

This program, run by Colorado Space Grant, features a workshop in June at Wallops Flight Facility where 25 to 30 teams of three students each build an instrument to measure various physical parameters that is then launched on a sounding rocket into space (i.e. > 100 km).

For 2020 we planned to support 4 teams of 3 to attend the June 2020 workshop. But due to COVID the 2020 workshop was cancelled.

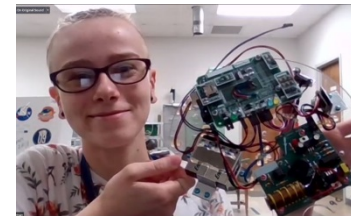
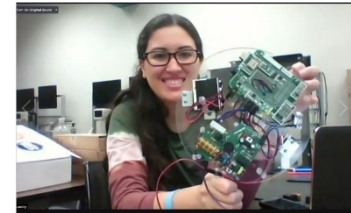
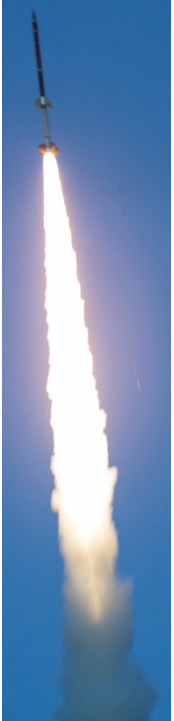
For 2021 RockOn! was virtual and held over an extended period.

- Five teams of three from McNeese, ULL, NSULA and LSU were supported.
- The virtual workshop extended from April to June 2021 with each person socially distanced and building their own RockOn! payload.
- Many more payloads were built than could be accommodated on the rocket.

HASP collaborated with RockOn! to provide a ride for 23 payloads.

- The sounding rocket payloads reached an altitude of > 118 km for ~ 10 minutes.
- The HASP payloads reached an altitude of > 37 km for > 14 hours.

RockOn! 2021



K-12 / Public Outreach 2020

LaSPACE provides some support for K-12 teachers & public outreach

- Teacher professional development
 - Six teachers were to be supported at the TXSG Grant LiftOff 2020 workshops which were cancelled due to COVID-19 impacts.
- Public outreach
 - Shining stars on the bayou, Drs. Chad & Kaisa Young from Nicholls, were awarded funding for their outreach project entitled “Communicating STEM Opportunities to Bayou Region Students.”
 - The Youngs quickly adapted to the early pandemic restrictions to successfully provide outreach virtually.



10/27/21a



LaSPACE 2021 Council Meeting



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K-12 / Public Outreach 2021

- Teacher professional development
 - Due to continued pandemic impact, only two teachers attended the virtual TXSG LiftOff 2021 workshops with three deferments to 2022
- Public Outreach
 - Chad Young zeroes in the focus of the Nicholls Chemistry Roadshow outreach efforts for minority students in the Bayou Region
 - The MARS Truck hiatus ended with its 1st public appearance since 2019 at the Baton Rouge Mini Maker Faire in October 2021



10/27/21a



LaSPACE 2021 Council Meeting



Research Infrastructure Support



The Research Enhancement Awards (REA) are used to develop research competitiveness, new projects or directions, and to foster collaborations and is supported usually by Board of Regents funds.

- As required by the BoR, all proposals are evaluated by out-of-state reviewers.
- For 2020:
 - FY20 RFP was released on 4/17/20 and NOIs were due 5/29/20
 - Nineteen (19) proposals were submitted by the 6/15/20 due date
 - Seven awards were made to LaTech, LSU, and LSU-HSC
- For 2021:
 - FY21 RFP was released on 4/1/21 and NOIs were due 5/21/21
 - Fifteen (15) proposals were submitted by the 6/11/21 due date
 - Seven awards were made to UNO, LSU, LaTech, and Tulane



Summary of 2020 Competition

For the 2020 GSRA, LURA, HIS, Interns, Senior Design, REA, RockOn, LaACES, and SAFOS competitions there were 62 proposals submitted by 15 affiliates and 44 awards were made.

Institution	# proposals	% of proposals	# awards	% of awards	Funds awarded	% of funds
Delgado	1	1.6%	1	2.3%	\$11,000	2.1%
Dillard	0	0.0%	0	0.0%	\$0	0.0%
Grambling	0	0.0%	0	0.0%	\$0	0.0%
LaTech	13	21.0%	10	22.7%	\$141,759	27.2%
Loyola	1	1.6%	1	2.3%	\$6,775	1.3%
LSU	14	22.6%	11	25.0%	\$145,833	28.0%
LSU-HSCS	1	1.6%	1	2.3%	\$34,855	6.7%
McNeese	6	9.7%	3	6.8%	\$14,000	2.7%
Nicholls	1	1.6%	1	2.3%	\$5,029	1.0%
Northwestern	2	3.2%	1	2.3%	\$7,384	1.4%
SELU	5	8.1%	5	11.4%	\$26,264	5.0%
SUBR	2	3.2%	2	4.5%	\$64,278	12.3%
SUNO	1	1.6%	1	2.3%	\$20,000	3.8%
Tulane	1	1.6%	1	2.3%	\$8,000	1.5%
ULL	9	14.5%	4	9.1%	\$24,000	4.6%
ULM	1	1.6%	0	0.0%	\$0	0.0%
UNO	4	6.5%	2	4.5%	\$11,300	2.2%
Xavier	0	0.0%	0	0.0%	\$0	0.0%
TOTAL	62	100.0%	44	100.0%	\$520,477	100.0%



Summary of 2021 Competition

For the 2021 GSRA, LURA, HIS, Interns, Senior Design, REA, RockOn, LaACES, and SAFOS competitions there were 63 proposals submitted by 14 affiliates and 53 awards were made.

Institution	# proposals	% of proposals	# awards	% of awards	Funds awarded	% of funds
Delgado	0	0.0%	0	0.0%	\$0	0.0%
Dillard	0	0.0%	0	0.0%	\$0	0.0%
Grambling	1	1.6%	1	1.9%	\$25,000	4.3%
LaTech	16	25.4%	12	22.6%	\$122,768	21.3%
Loyola	1	1.6%	1	1.9%	\$11,683	2.0%
LSU	16	25.4%	14	26.4%	\$164,118	28.5%
LSU-HSCS	1	1.6%	0	0.0%	\$0	0.0%
McNeese	5	7.9%	5	9.4%	\$27,697	4.8%
Nicholls	2	3.2%	2	3.8%	\$10,528	1.8%
Northwestern	3	4.8%	3	5.7%	\$16,928	2.9%
SELU	5	7.9%	4	7.5%	\$45,649	7.9%
SUBR	1	1.6%	1	1.9%	\$25,000	4.3%
SUNO	1	1.6%	1	1.9%	\$20,000	3.5%
Tulane	1	1.6%	1	1.9%	\$34,319	6.0%
ULL	9	14.3%	7	13.2%	\$37,394	6.5%
ULM	0	0.0%	0	0.0%	\$0	0.0%
UNO	1	1.6%	1	1.9%	\$35,000	6.1%
Xavier	0	0.0%	0	0.0%	\$0	0.0%
TOTAL	63	100.0%	53	100.0%	\$576,084	100.0%



Louisiana NASA EPSCoR RID



The NASA EPSCoR Research Infrastructure Development (RID) grant under Board of Regents has three subprograms: TAP, RAP, and SAR

Travel Award Program (TAP):

- Provides support for Louisiana researchers to travel to NASA centers to establish collaborations
- All NASA centers were closed since spring 2020 to all but the most essential personnel. As a result we have not issued any TAP awards since 2019

Research Award Program (RAP):

- Seed money for establishing a research project with NASA
- 2020 RFP released 11/4/19, 9 proposals were submitted, and three awards (UNO, LaTech, and ULL) were made in March 2020
- 2021 RFP released 9/3/20, 9 proposals were submitted, and six awards (Tulane, LSU, LaTech, and ULL) were made in December 2020
- 2022 RFP released 10/1/21, NOI due 12/3/21, proposals are due 1/7/22

Summer Assisted Research (SAR) program:

- Support faculty at non-research intensive institutions for summer research
- 2020 RFP released 3/9/20, only one proposal was received and that one was non-compliant.
- The SAR program was not competed during 2021



NASA EPSCoR RID Funding Status



We ended the 2015-2019 RID on 6/30/21. Submitted the final report.

The current 2019-2022 RID was augmented in 2020 to \$125k (year 1), \$150k (year 2), and \$175k (year 3).

The RID program has been expended and we responded to a new solicitation during 2021

- Five years of funding from 7/1/2022 through 6/30/27
- NASA funding at \$200,000 per year for a total of \$1,000,000.
- The Louisiana Board of Regents will continue its in-cash cost share of \$125,000 per year for the full five years for a total of \$625,000.
- Proposal was submitted on 7/12/2021 and was selected on 10/22/21

<https://www.nasa.gov/press-release/nasa-commits-28-million-to-underfunded-us-jurisdictions>

The new NASA EPSCoR Technical Advisory Committee will consist of T. G. Guzik (Chair), C. Fava / A. Ryan, J. Patton, M. Zappi, R. Keller, M. Khonsari, D. Bagayoko.



Louisiana NASA EPSCoR Research



These three-year \$1,500,000 research projects are supported by NASA (\$750,000) and the Louisiana Board of Regents (\$750,000).

One FY20 proposal was submitted on 3/26/20

- Zhiqiang Deng, LSU, “Satellite-Assisted Forecasting Environment for Improving Oyster Safety (SAFE Oyster)”
- Proposal was awarded on 7/24/2020 and started 9/1/2020

One FY21 proposal was submitted on 4/17/21

- Xiao-Dong Zhou, ULL, “... Solid-State Electrolyte for Safe and Ultra-High Capacity Batteries for NASA's Future Missions (Solid-State Battery)”
- Proposal was awarded on 7/28/2021 and will “start” on 11/1/2021

This makes 14 out of 15 Louisiana NASA EPSCoR Research proposals that have been awarded since 2007

Now working on FY22 competition

- Pre-proposal solicitation released by BoR on 8/18/21
- A required NOI was due 9/29/21 and pre-proposals are due 11/18/21



NASA EPSCoR Rapid Response Research (R3)



Rapid Research Response (R3) is intended to implement research within NASA and commercial programs to address technical issues.

- These are NOT general research projects.
- A list of specific tasks are provided in the R3 CAN and proposals must explicitly detail an answer to one of these specific tasks.
- Funding for one year at about \$100,000. Limited submission.

Process for FY2020:

- Notification released 10/4/19, NOI due 10/18/19, pre-proposals due 11/22/19.
- Submitted seven proposals on 1/15/20.
- Two were awarded (Guo @LSU, Lorenzo @ LSU).

Process for FY2021:

- Notification released 11/4/20, NOI due 11/20/20, pre-proposals due 12/18/20.
- Submitted five proposals by 2/4/21.
- Three were awarded (Raush@ULL, Radadia@LaTech, Mills@LaTech).

Process for FY2022:

- Notification released 10/22/21, NOI due 11/22/21, pre-proposals due 12/20/21.



Other NASA EPSCoR Programs



International Space Station (ISS) Flight Opportunity provides minimum funding to certify for flight hardware already developed under a NASA EPSCoR program.

- \$100,000 over three years. Limited to one proposal per jurisdiction.
- The one we received to date (Nestorova, LaTech) had the apparatus successfully launched to the ISS on 12/5/20.
- Submitted one ISS proposal on 2/24/21, but this was not selected for award.
- FY22 RFP was released 10/18/21, notification of interest due 11/1/21.

Suborbital Flight Opportunity (SFO) provides funding to develop and fly a payload on a suborbital vehicle.

- \$250,000 over three years for the science payload plus flight services.
- Submitted one SFO proposal on 2/24/21, but this was not selected for award.
- Currently the FY22 SFO is being negotiated at NASA.
- This will be limited to one proposal per jurisdiction, so we will need to implement a pre-proposal process once the situation at NASA is clarified.



Meetings / Conferences / Field Ops

(**Boldface indicates face-to-face events**)



- 10/18/19 **Fall 2019 LaSPACE Council Meeting (at LSU)**
- 2/24-27/2020 **Spring 2020 EPSCoR/IDeA, Hill visits, and Space Grant National Meeting Joint Board Meeting (as Washington DC)**
- 7/21, 22/2020 Space Grant Transition Meeting (Virtual)
- 8/3/2020 **ACES-65 flight operations (limited participation in Louisiana)**
- 10/1/2020 LaSPACE Council meeting (Virtual)
- 10/8/2020 Fall 2020 Space Grant Workshop (Virtual)
- 3/4/2021 Spring 2021 Space Grant Workshop (Virtual)
- 3/12/2021 Joint Space / Sea Grant Meeting (Virtual)
- 3/18/2021 OSTEM Better Together for Stakeholder Success (Virtual)
- 4/16/2021 **LaACES 2021 thermal / vacuum system test & team presentations (at LSU)**
- 4/28/2021 LaSPACE Funding Opportunities meeting (Virtual)
- 5/17/2021 LaACES 2021 FRR Presentations (Virtual)
- 6/12/2021 **ACES-66 flight operations (with participants in Louisiana)**
- 6/24/2021 LaACES 2021 Science Presentations (Virtual)
- 6/24/2021 OSTEM Better Together for Mission Success (Virtual)
- 7/22, 26/2021 Space Grant Transition Meeting (Virtual)
- 7/26/2021 **HASP 2021 Integration and System Testing (at CSBF / Palestine, TX)**
- 9/2-18/2021 **HASP 2021 Flight Operations (at Fort Sumner, NM)**
- 9/29/2021 **Fall 2021 Space Grant Nation Meeting (at Jackson, WY)**
- 10/29/2021 **LaSPACE Council meeting at Baton Rouge Library (at Baton Rouge, LA)**



Reporting and Proposals for 2020

- 1/15/2020** **EPSCoR R3 FY2020 Seven Proposals Submitted**
- 1/30/2020 SG FY19 Expenditure, OEPM, Student Tables (NNX15AH82H)
- 2/10/2020** **Submit two Artemis Challenge Proposals**
- 2/13/2020** **Submit LaSPACE 2020-2024 Augmentation #1 Proposal (80NSSC20M0110)**
- 2/19/2020 2nd Year Progress Report for NASA EPSCoR project 80NSSC18M0062 (Zappi, LSU)
- 3/11/2020 Submit EPSCoR RID 2019-2022 Augmentation (80NSSC19M0055)
- 3/26/2020** **EPSCoR Research FY2020 (Deng) Submitted**
- 4/8/2020 1st Year APD for LaSPACE 2020-2024 (80NSSC20M0110)
- 4/8/2020 5th Year APD for LaSPACE 2015-2019 (NNX15AH82H)
- 4/28/2020 1st Year Progress Report for NASA EPSCoR project 80NSSC19M0149 (Raush, ULL)
- 4/29/2020 5th Report for EPSCoR RID 2015-2019 (NNX15AK33A)
- 5/1/2020 1st Year Progress Report for EPSCoR RID 2019-2022 (80NSSC19M0055)
- 5/20/2020 5th Year Progress Report for NASA EPSCoR project NNX15AM61A (Cherry, LSU)
- 5/25/2020** **Submit SciAct SUPER as Co-I**
- 5/27/2020** **Submit SciAct Eclipse Balloon Proposal as Co-I**
- 6/1/2020** **First LaSPACE Monthly COVID-19 Report**
- 6/1/2020** **First NASA EPSCoR Monthly COVID-19 Report**
- 6/15/2020 4th Year Progress Report for NASA EPSCoR project NNX16AQ93A (Warner, LSU)
- 7/7/2020** **Submit 5 year HASP funding proposal to SMD APD**
- 7/8/2020 2020 SG / EPSCoR Review for ORED
- 9/28/2020** **Submit LaSPACE 2020-2024 Augmentation #2 Proposal (80NSSC20M0110)**
- 10/27/2020 5 1/2 Year Report for EPSCoR RID 2015-2019 (NNX15AK33A)
- 10/31/2020 3rd Year Progress Report for NASA EPSCoR project 80NSSC18M0028 (Xue, LSU)
- 11/1/2020 2nd Year Progress Report for NASA EPSCoR project 80NSSC19M0078 (Nestorova, LaTech)
- 12/9/2020 1st Year - 6 Month Report for LaSPACE 2020-2024 (80NSSC20M0110)



Reporting and Proposals for 2021

1/12/2021	SG FY20 Expenditure, OEPM, Student Tables (NNX15AH82H)
2/4/2021	EPSCoR R3 FY2021 Five Proposals Submitted
2/11/2021	Submit LaSPACE 2020-2024 Augmentation #3 Proposal (80NSSC20M0110)
2/23/2021	3rd Year Progress Report for NASA EPSCoR project 80NSSC18M0062 (Zappi, LSU)
2/24/2021	EPSCoR ISS FY2021 (Raush) Submitted
2/24/2021	EPSCoR SFO FY2021 (LiCata) Submitted
3/22/2021	1st Year Progress Report for NASA EPSCoR R3 project 80NSSC20M0150 (Lorenzo, LSU)
4/8/2021	LaSPACE 2015-2019 5th Year NCE APD (NNX15AH82H)
4/17/2021	EPSCoR Research FY2021 (Zhou) Submitted
4/22/2021	Submit LIFT Proposal to MUREP EONS as Co-I
4/27/2021	2nd Year Progress Report for EPSCoR RID 2019-2022 (80NSSC19M0055)
4/29/2021	2nd Year Progress Report for NASA EPSCoR project 80NSSC19M0149 (Raush, ULL)
5/13/2021	Submit SciAct NEBP Proposal as Co-I
6/1/2021	Last LaSPACE Monthly COVID-19 Report
6/1/2021	Last NASA EPSCoR Monthly COVID-19 Report
6/24/2021	Submit 2021 Rebudget Request for LaSPACE (NNX15AH82H)
6/25/2021	1st Year Progress Report for NASA EPSCoR project 80NSSC20M0216 (Deng, LSU)
7/12/2021	Submit NASA EPSCoR 2022-2027 RID Proposal
7/22/2021	2021 SG / EPSCoR Review for ORED
9/15/2021	1st Year Progress Report for NASA EPSCoR R3 project 80NSSC20M0149 (Guo, LSU)
9/27/2021	1st Year Progress Report for HASP project 80NSSC21K0109 (Granger, LSU)
10/20/2021	Submit LaSPACE 2020-2024 Augmentation #4 Proposal (80NSSC20M0110)
10/30/2021	EPSCoR RID 2015-2019 Final Report (NNX15AK33A)
10/31/2021	4th Year Progress Report for NASA EPSCoR project 80NSSC18M0028 (Xue, LSU)



High Altitude Student Platform 2020

HASP is a workforce development program for higher education students nationwide supported by the NASA Balloon Program Office and LaSPACE personnel.

- Had to stand down the HASP 2020 program on 11/1/19 due to cuts in the base LaSPACE funding.
- Given the issues with COVID-19 in 2020 we would not have been able to conduct the student payload integration nor the flight anyway.

Negotiated with the Astrophysics Division of the NASA Science Mission Directorate to support HASP.

- Submitted a “Single Source Project” proposal to SMD on 7/7/20.
- Requested support for five years at \$160,000 per year or a total of \$800,000
- Project was awarded on 9/8/20.

Full support for personnel, travel, refurbishment, balloon, helium, etc. for flights from 2021 through 2025 now provided exclusively by SMD.

Possibility of more funds to support modernizing HASP flight & ground systems.

HASP Restarted in 2021 with 11 Teams

Supported by NASA SMD APD, BPO, CSBF, and LSU Personnel

11 student teams selected for 2021 including 8 U.S. (1 Florida / North Dakota collaboration), 1 Puerto Rico, 1 Ontario Canada, 1 Peru South America

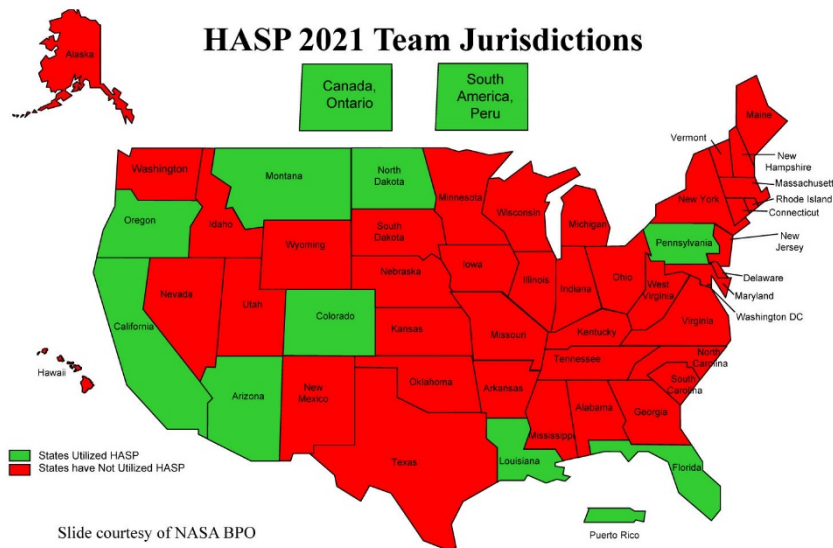
Several teams studying ionizing radiation including the impact of charged and neutral particle radiation on tissue equivalent gas.

Flight test of experimental hardware for larger future experiments, including cubesats and the 2024 Solar Eclipse Balloon Project.

Partnered with Colorado Space Grant and WFF to fly “extra” RockOn! 2021 sounding rocket student payloads as a piggyback.

Integration: 7/23 – 7/31 at CSBF

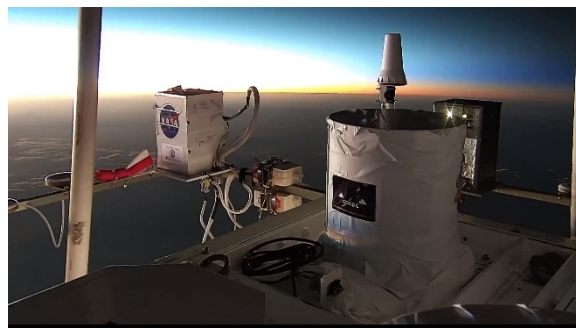
Flight Ops: 9/2 – 9/18 at Ft. Sumner



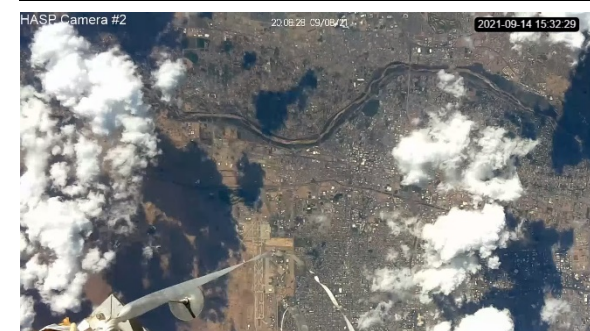
HASP 2021 Launched on 9/14/21 and had over 14 hours at float



10/28/21a



LaSPACE 2021 Council Meeting

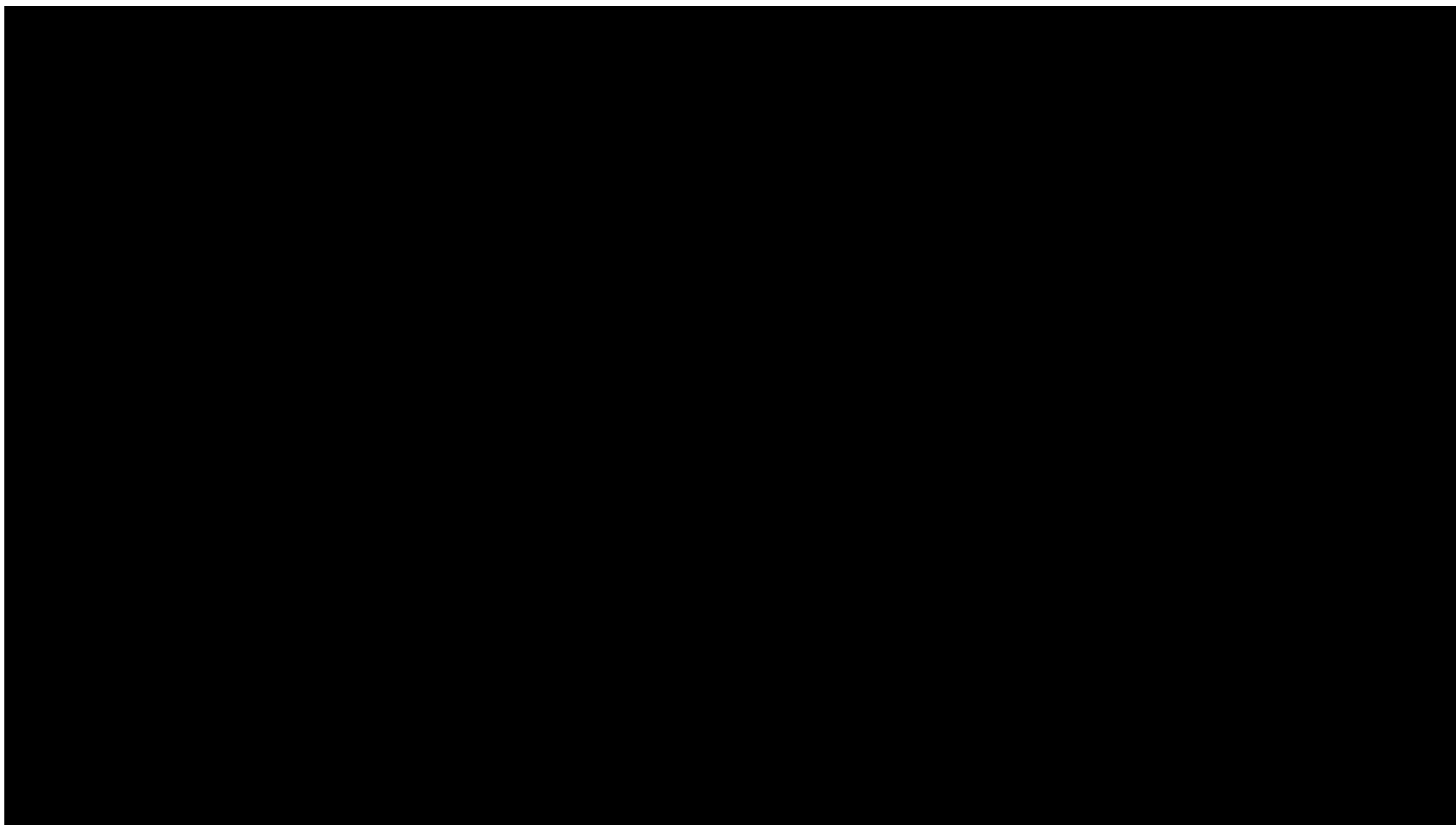


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HASP 2021 Launch and Flight in 360

<https://www.youtube.com/c/LouisianaSpaceGrant/videos>



There has been a change in the NASA leadership of the last year

NEW ADMINISTRATION

"For the first time since fiscal year 2017, the Administration's budget submission requests funding the Office of STEM Engagement, and proposes a significant increase to that account. The Committee supports this increase and includes funding to greatly expand NASA's Office of STEM Engagement." -- FY 2022 House Appropriations Committee Commerce, Justice, and Science Appropriations Bill

"As we go back to the Moon and on to Mars, I think it's going to excite another couple of generations of students. And as a result, we, the United States as well as planet Earth, are going to be the beneficiaries."

Sen. Bill Nelson
NASA Administrator

Jun. 15, 2021
Senate Appropriations Subcommittee on
Commerce, Justice, and Science Hearing on
Fiscal 2022 Budget Request for NASA



Pam Melroy
Deputy Administrator



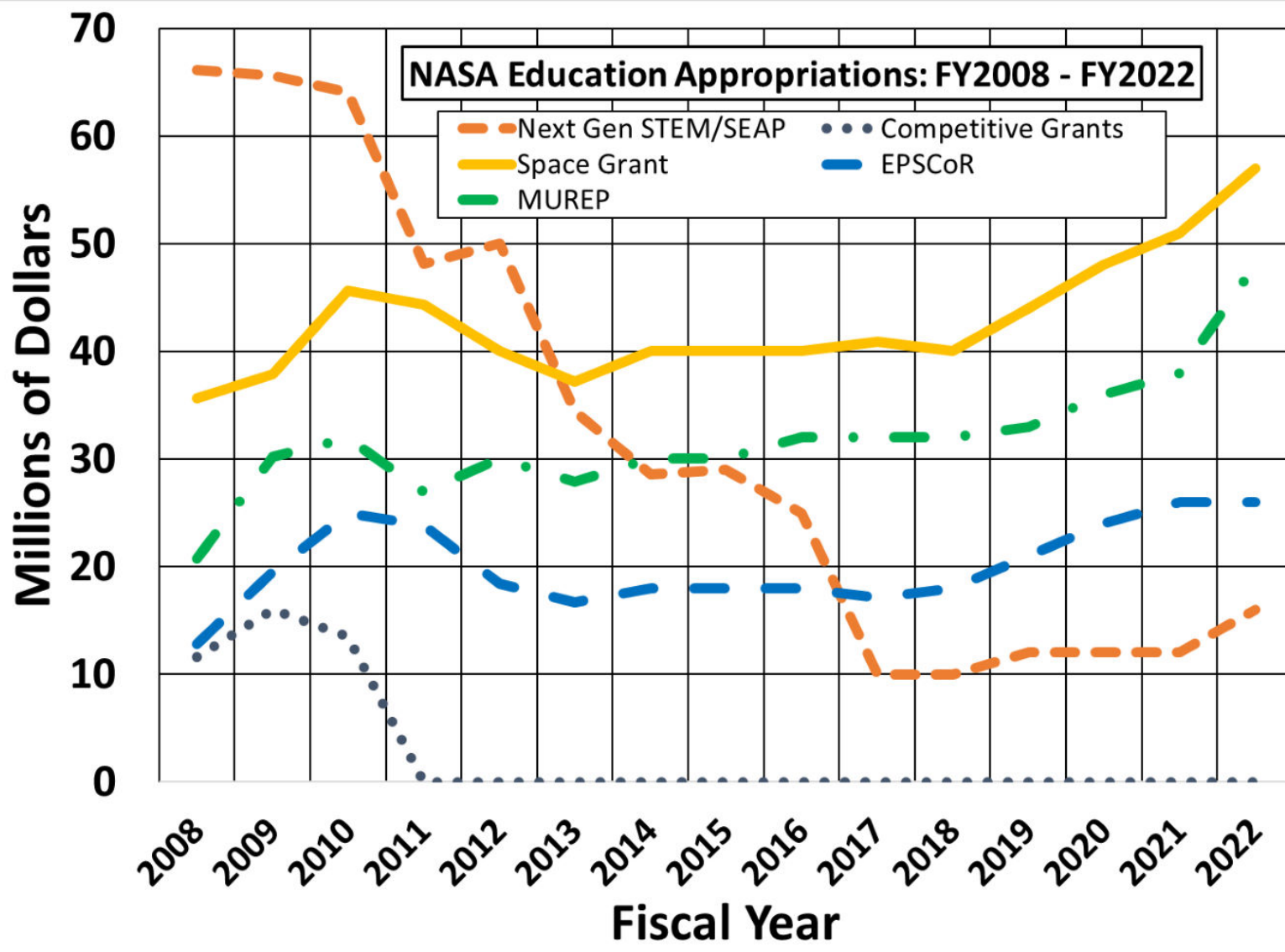
Robert D. Cabana
Associate Administrator



Current Status of the FY22 Budget

- Nice to have leadership that does not zero OSTEM every year.
- House FY22 appropriations
 - Space Grant \$60 million; NASA EPSCoR \$26 million; MUREP \$48 million; SEAP \$13 million (Total \$147 million)
 - Language to “allow each State consortium to receive \$1 million in base funding”
- Senate FY22 appropriations
 - Space Grant \$57 million; NASA EPSCoR \$26 million; MUREP \$48 million; SEAP \$16 million (Total \$147 million)
 - Language to limit programs to a 5% administrative cap and that “all 52 participating jurisdictions be supported at no less than \$850,000”
- In a Continuing Resolution (CR) to 12/3/21 (same funding as for FY21) and a debt limit extension to 12/3/21. (December will be fun!)
- Most of the “oxygen” in Congress is currently being consumed by the infrastructure / reconciliation bills.

Historical NASA Education Funding





Current Status of LaSPACE Funding



- The base level LaSPACE program is funded from 6/10/20 to 6/9/24.
- Have gone through a series of augmentations.
- Latest has two budgets (4A & 4B), but only one will be funded.

	Base	Aug #1	Aug #2	Aug #3	Aug #4A	Aug #4B	Year Total
	9/30/19	2/13/20	9/28/20	2/11/21	10/20/21	10/20/21	
2020-2021	\$700,000	\$60,000	\$0	\$0	\$0	\$0	\$760,000
2021-2022	\$685,000	\$0	\$85,000	\$30,000	\$0	\$0	\$800,000
2022-2023	\$685,000	\$0	\$85,000	\$30,000	\$100,000	\$150,000	\$900,000 or \$950,000
2023-2024	\$685,000	\$0	\$85,000	\$30,000	\$100,000	\$150,000	\$900,000 or \$950,000
Four Year Total	\$2,755,000	\$60,000	\$255,000	\$90,000	\$200,000	\$300,000	\$3,360,000 or \$3,460,000

How does OSTEM view its portfolio?

STEM ENGAGEMENT PROGRAM ELEMENTS

NASA'S MISSION THEMATIC AREAS



NASA STEM ENGAGEMENT PROJECTS

SPACE GRANT	<p>A national network of colleges and universities with over 1,000 affiliate institutions and organizations located in all 50 states, the District of Columbia, and Puerto Rico.</p> <p>Purpose: Expands opportunities for students to participate in NASA's aeronautics and space projects.</p>
EPSCoR	<p>The Established Program to Stimulate Competitive Research (EPSCoR) funds partnerships with government, higher education, and industry in 28 eligible jurisdictions (25 states and three territories).</p> <p>Purpose: Effects sustainable improvements in a state or region's research infrastructure, capacity, and competitiveness.</p>
MUREP	<p>The Minority University Research and Education Project (MUREP) supports minority-serving institutions (MSIs) to enhance research, academic, and technology capabilities.</p> <p>Purpose: Increases retention of underserved and underrepresented groups in STEM.</p>
NEXT GEN STEM	<p>Next Generation STEM (Next Gen STEM) creates K-12 and informal education STEM engagement initiatives aligned to NASA mission priorities.</p> <p>Purpose: Attracts and retains student interest in STEM careers, building a vibrant next-generation workforce.</p>

EDUCATIONAL TOOLS AND PLATFORMS
<p>Focus: Access and scalability</p> <ul style="list-style-type: none"> Suite of tools and platforms enabling student engagement and data collection <ul style="list-style-type: none"> NASA STEM Gateway (Phase 1 operational in early FY21) stem.nasa.gov intern.nasa.gov NASA STEM@Home

PERFORMANCE MEASUREMENT AND EVALUATION
<p>Focus: Outcomes and metrics</p> <ul style="list-style-type: none"> Learning agenda Targeted studies

STRATEGIC PARTNERSHIPS
<p>Focus: Scalability</p> <ul style="list-style-type: none"> Comprehensive approach to foster and stimulate strategic partnerships New strategy began in FY 2020

INTERNSHIPS AND FELLOWSHIPS
<p>Focus: Diversity and Inclusion</p> <ul style="list-style-type: none"> Enterprise model in collaboration with mission directorates and centers

ENABLING CROSS-CUTTING FUNCTIONS



STEM ENGAGEMENT BENEFICIARIES



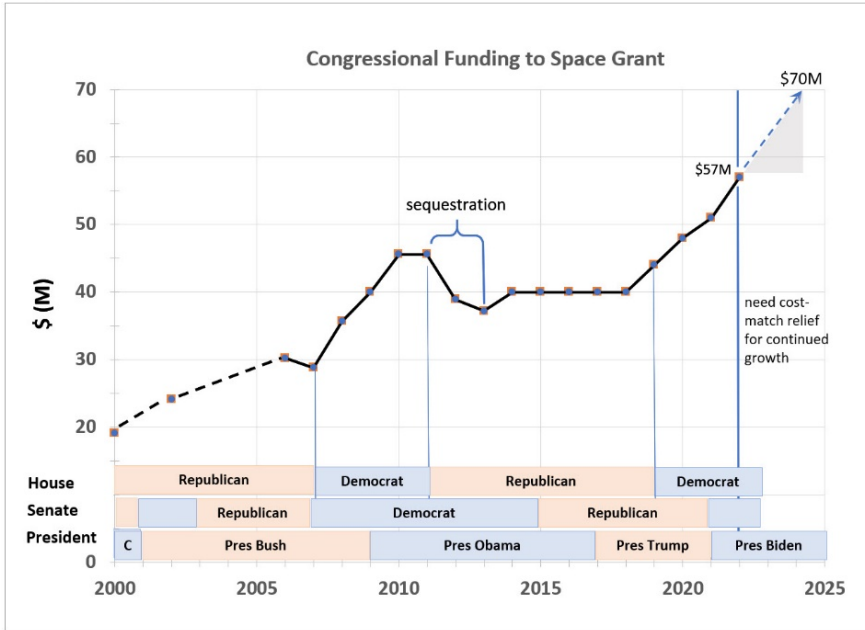
The primary OSTEM focus areas

FY 2022 FOCUS AREAS



- **Implement strategies to broaden student participation** to increase diversity, equity and inclusion in STEM through NASA opportunities and activities.
- **Continue to build productive strategic partnerships** and networks, expanding NASA's STEM ecosystem to magnify reach and impact.
- **Expand NASA contributions in engaging K-12 students** in STEM pathways, with an approach toward a continuum of experiences.

Future Funding



Could potentially be looking at \$1M or more per year in a few years.

Depends on how much OSTEM withholds for their administration and “special projects” regardless of what Congress appropriates.

Currently OSTEM “charging” about 18% despite Congressional language to keep such fees below 5%.

Another limitation to growth is what will be the cost share requirement from NASA.

Assuming the current NASA cost share requirement we could support a NASA award of about \$1.2M per year without needing more contribution from affiliates.

The new authorization language would potentially allow us up to ~\$1.9M per year.

All this is looking reasonably good, just need to keep Congress informed about all the work you are doing with your students under Space Grant and NASA EPSCoR.