

FY 2018 Year 4 Extension Annual Performance Document

Arkansas Space Grant Consortium Lead Institution:

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Consortium URL: arkansasspacegrant.org
Grant Number: NNX15AR71H

Lines of Business (LOBs): NASA Internships, Fellowships, and Scholarships; STEM Engagement; Institutional Engagement; Educator Professional Development

A. PROGRAM DESCRIPTION:

The National Space Grant College and Fellowship Program consists of 52 state-based, university-led Space Grant Consortia in each of the 50 states plus the District of Columbia and the Commonwealth of Puerto Rico. Annually, each consortium receives funds to develop and implement student fellowships and scholarships programs; interdisciplinary space-related research infrastructure, education, and public service programs; and cooperative initiatives with industry, research laboratories, and state, local, and other governments. Space Grant operates at the intersection of NASA's interest as implemented by alignment with the Mission Directorates and the state's interests. Although it is primarily a higher education program, Space Grant programs encompass the entire length of the education pipeline, including elementary/secondary and informal education. The Arkansas Space Grant Consortium is a Capability Enhancement Consortium funded at a level of \$570,000 for fiscal year 2018.

B. PROGRAM GOALS:

1. Fund Research Infrastructure Grants to affiliate institutions (20)
2. Fund Student Fellowship/Scholarship Grants (32)
3. Fund STEM/MSI Scholarship Fellowships (17)
4. Fund Workforce Development Fellowships (6)
5. Fund Collaborative Research Programs (5)
6. Continue to fund the Arkansas High Altitude Balloon Flight Team (1)
7. Fund the Arkansas CubeSat Flight Team (1)
8. Fund Outreach Awards (5)
9. Fund Guest Lecturer (1)
10. Hold Annual Symposium (1)
11. Continue to Collaborate with the National Space Grant Foundation's program for longitudinal tracking of awardees, and participate fully in reporting results to NASA

C. PROGRAM/PROJECT BENEFITS TO PROGRAM AREAS:

One of the greatest benefit we have here in the State of Arkansas is the camaraderie amongst our Consortium Affiliates. Our Board consisting not only of our campus affiliates, but also local government and private industry, have been working together for year to keep this program running smoothly. The ASGC Program office is fortunate to have a group of such dedicated individuals to aid us in this mission.

D. PROGRAM ACCOMPLISHMENTS:

- **NASA Internships, Fellowships, and Scholarships (NIFS): Total Awarded**

Fund the Student Scholarship/Student Fellowship Grants - 61 students were funds for different NIFS awards during the year. The majority of these students worked with faculty on Research Infrastructures and on Collaborative Research Projects at their related institutions.

Fund the STEM/MSI Scholarship/Fellowship – 17 STEM awards were present to under-representative students throughout our state. One student from Harding University, Alex Moore, is a Graphic Design Major. She learned about the ASGC funded projects in her Astronomy Class and wanted to do something to get the word out about the NASA related research being performed at Harding University. She worked with a physics professor to create the video. Now Harding University is using this video for outreach activities and recruitment.

Fund the Workforce Development Fellowships – Seven students from our state were awarded Workforce Development Fellowships. Of them, three were placed at NASA Centers while the others received local internships. Arkansas had an additional student Mr. Samuel Dobson who was awarded a WFD, but received a paid position at NASA Ames to work on the SARP project.

Fund the Aeronautic Enhancement Awards – Six individuals were award funds to apply to their Aviation Powerplant Technical Certificate or Airframe Technical Certificate. These \$2,000 award can pay for their full 18 month of school and can cover most of their certification examinations.

- **Higher Education projects:**

Fund the BalloonSat Program - Funded Year 4 at \$10,000 – No Smart Objectives
Fund the CubeSAT Program – Funded Year 4 at \$12,000 – No Smart Objectives

- **Research Infrastructure projects:**

Fund Research Infrastructure Grants to affiliate institutions - 38 awards were made across 17 campuses

Collaborative Research Program Awards (CRP) - Funded 5 teams consisting of 12 faculty members from eight campuses. Four of these team feel they have enough experience to apply for NASA EPSCoR and outside sources of funds to continue their research.

- **Precollege projects:**

ASGC chose not to directly participate in formal K-12 awards due to our status as a CAPENS/EPSCoR state. We did however use our State Match money to fund several Outreach programs that target the K-12 audience. We also attended the STEM Festival

and participated by sharing our research with the 5000+ k-12 students that were in attendance.

- **Informal Education projects:**

Fund Outreach Awards – Thirteen Outreach awards were funded. Several of these awards are for activities for the 50th anniversary of the Apollo 11 mission.

Fund Guest Lecturer - Mr. Willie Williams from Johnson Space Center in Houston, TX we invited to attend our symposium and discuss current ISS activities. At the last minute this trip was canceled. ASGC was fortunate to have great resources in our own state so we were about to take this time slot and had an informal planning session for the upcoming 2024 Total Solar Eclipse that will fall upon the majority of the state.

Annual Symposium – Arkansas Annual Symposium was a success as always. This was one of our largest events to date. 36 oral presentations were made, 44 posters presented and 82 abstracts published. There was a group of 24 middle school students present their research on airplane wings. We also had our initial planning meeting for the 2024 Total Solar Eclipse.

E. PROGRAM CONTRIBUTIONS TO NASA EDUCATION PERFORMANCE GOALS:

- **Diversity:** ASGC has only one HBCU, the University of Arkansas at Pine Bluff. ASGC offers STEM Scholarships to underserved minorities, including woman. We provide additional incentives in our state-wide competitions to teams that collaborate with this campus. ASGC offers STEM scholarships to underserved minorities, including women. The Diversity on our consortium Board is poor. There are only two female voting members with an additional three partners in aerospace members, of which one is African American. While ASGC encourages diversity in all that we do, Board positions are appointed by their campus administrations. We will continue our efforts in this regard.
- **Minority Serving Institution Collaborations:** Arkansas has only one HBCU, the University of Arkansas at Pine Bluff. We provide additional incentives in our state-wide competitions to teams that collaborate with this campus. ASGC offers STEM Scholarships to underserved minorities, including woman.
- **Office of Education Annual Performance Indicators:**
 - API3.3.3: STEM-18-1 – 20 underrepresented and 36 females (7 are both)
 - API3.3.5: STEM-18-5 – At our annual Symposium 36 oral presentations were made, 44 posters presented and 82 abstracts published. ASGC does publish the Arkansas Aerospace Proceedings annually. This is a peer reviewed publication. Unfortunately, at this time we do not have a final count of the number of paper being published this year.

F. IMPROVEMENTS MADE IN THE PAST YEAR:

We continually look to improve our relationships with industry in Arkansas. This year we added an additional affiliate partner, Dr. Robert Sproles from Spire Global, to join our monthly consortium meetings and add input.

We have enlisted the help of Maj Garrick St. Pierre, Civil Air Patrol (CAP) to become our liaison/coordinator between Arkansas Space Grant and the K-12 schools throughout the state of Arkansas. Maj. St. Pierre is the Director of Aerospace Education for the Arkansas Wing of the Civil Air Patrol and is also a STEM Educator at Cloverdale Middle School. This school uses research-based instructional strategies to provide enrichment opportunities in aerospace science and technology through accelerated achievement and proficiency in literacy, mathematics, and science.

G. CURRENT AND PROJECTED CHALLENGES:

We are currently gearing up to change our 2019-2020 award dates to as per the NASA HQ's office. This will shorten our allotted time from 12 months to 10 months with a hard end time. We are working with all our campuses to make sure each awardee completes their research and spend their funds in a timely fashion.

H. PROGRAM PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION:

Four-Year Higher Education Institutions (Affiliates) – Voting members

ASGC consist of 17 colleges and universities. A campus representative from each campus sits on our board and has a vote in all proposals funded through ASGC. Only these 4-year campuses can receive full benefit regarding research awards. All full affiliates receive some research funding each year awarded on a competitive basis, including RI, NIFS, and Higher Ed. They are also eligible for Outreach, Informal Ed, and other ASGC awards. Faculty and students are expected to present their research at the Annual Symposium each year.

Arkansas State University, Jonesboro
Arkansas Tech University, Russellville
Harding University, Searcy
Henderson State University, Arkadelphia
Hendrix College, Conway
John Brown University, Siloam Springs
Lyon College, Batesville
Ouachita Baptist University, Arkadelphia
Southern Arkansas University, Magnolia
University of Arkansas, Fayetteville
University of Arkansas at Fort Smith
University of Arkansas at Little Rock
University of Arkansas for Medical Sciences, Little Rock
University of Arkansas at Monticello
University of Arkansas at Pine Bluff
University of Central Arkansas, Conway
University of the Ozarks, Clarksville