NSGA
National Space Grant Alliance

Inspiring the next generation STEM workforce 2019

REQUEST FOR FY 2020 APPROPRIATIONS

Report Language —"The recommendation provides $120 million for NASA's Office of STEM Engagement, of which no less than $50 million shall be allocated to the National Space Grant College and Fellowship Program. The Committee allocates no more than 10% to an administrative fee for each program in the NASA Office of STEM Engagement. The Space Grant balance of no less than $45 million shall be allocated annually to jurisdiction consortia as base funding so that they may competitively distribute the funds to meet local, regional, and national needs."

SPACE GRANT HIGHLIGHTS

Space Grant, established in 1989, is a competitive, highly effective national partnership program responsive to NASA-aligned regional and national priorities.

Space Grant is administered by consortia in 52 jurisdictions—all 50 states, plus PR and DC. Consortia serve as catalysts in each jurisdiction to help grow the future STEM workforce and to meet needs for existing and new STEM-related jobs.

Space Grant initiatives include STEM programs with experiential learning through apprenticeships, internships, industry partnerships, and other hands-on experiences. Examples of experiential learning include: launch vehicle and payload development, engineering, and assembly; personal and commercial space flight operations; space science and engineering; UAV operations; remote sensing; aircraft maintenance; cybersecurity; and space flight design.

Space Grant is leveraging partnerships across state consortia and with NASA to recruit and retain students to build a diverse STEM workforce in academia, industry/business, and government. Space Grant funded students achieve an impressive 80% graduation rate.

JUSTIFICATION

The requested $50 million would:

- **Strengthen and promote our national network** of state-based systems in partnership with NASA, committed to developing and sustaining a diverse well-prepared STEM workforce.
- **Improve student accessibility** to an expanded range of STEM-based experiential learning opportunities, STEM researchers, and faculty mentors.
- **Broaden, extend, and accelerate participation** of underrepresented minorities and women in STEM-based academic fields and careers.
- **Advance the nation's STEM education & workforce pipeline** to further the progress of science and create knowledge that transforms the future and sustains our global leadership.

The NATIONAL SPACE GRANT ALLIANCE exists to enhance the capacity of the United States of America to carry out education, research, and public outreach activities in science, technology, engineering, and mathematics (STEM) disciplines, particularly in fields related to space, aeronautics, and earth system science.

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STEM WORKFORCE CRISIS

24th, 38th **U.S. LAGS IN STEM LITERACY.** U.S. 15 year old students ranking in science and math among 71 countries.

30th **U.S. RANKING OUT OF 35 OECD COUNTRIES IN ENGINEERING AS PERCENTAGE DEGREES AWARDED.**

14,000 **BOEING EMPLOYEES APPROACHING RETIREMENT (>AGE 61).** Expected to take 10-20 years to fully restaff.

225,000 **U.S. SPACE SCIENCE, ENGINEERING, AND TECHNICIAN JOB OPENINGS PREDICTED BY 2026.** Including 8,600 scientists and 172,000 engineers.

SPACE GRANT PARTICIPANTS

>1,000 **AFFILIATES and COLLABORATORS**

50 *– in all –* **STATES plus DC and PR**

Universities, community colleges, NASA field centers, industry, museums, and agencies

FY17

SPACE GRANT STUDENTS

>5,300 **COLLEGE STUDENTS** received Space Grant funding, including >1,000 community college students

83% of **Space Grant COLLEGE STUDENTS** remain in STEM fields

FY17

ENGAGEMENT WITH NASA

615 **Total Space Grant Consortium Programs with NASA Entities**

70% Involved **Mission Directorates**

21% Involved **Centers and Facilities**

9% Involved **Office of STEM Engagement**

FY17

DIVERSITY

29% **UNDERREPRESENTED PARTICIPANTS**

40% **FEMALE PARTICIPANTS**

FY17

FOR EACH NASA DOLLAR

>$1 **Contributed from Non-federal Sources**

FY17

OUTREACH

>43,000 **EDUCATORS ENGAGED**

>720,000 **PRECOLLEGE STUDENTS REACHED**

FY17

EXAMPLES OF STEM STUDENT INTERNSHIPS AND CAREER PLACEMENTS

SPACEX, BOEING, NASA, BLUE ORIGIN, UTC Aerospace, Gulfstream, Cessna, DELTA, Raytheon, Ford, THE AEROSPACE CORPORATION, LORD Aerospace Products, NORTHROP GRUMMAN, SPIRIT AEROSYSTEMS, 3M, Chevron, GM, NOAA, FAA, GE Aviation, LOCKHEED MARTIN, L3 communications, intel, Disney, ExxonMobil, SCALED COMPOSITES, AEROJET ROCKETDYNE, IBM, hp, Google, DOW, HALLIBURTON, U.S. AIR FORCE, U.S. ARMY, Orbital ATK, Johnson & Johnson, Schlumberger, EPA, SIKORSKY, Peace Corps, Honeywell, MERCK, Microsoft, amazon, JOHN DEERE, CATERPILLAR