



FY24 NASA OSTEM INTERNSHIP PROGRAM EVALUATION REPORT BRIEF

This report brief comprises key findings and recommendations from the NASA OSTEM Internship Program Evaluation. The purpose of the study was to understand the experiences of NASA OSTEM interns as well as alumni of the NASA OSTEM Internship Program one year after completion. Given this purpose, the NASA OSTEM Performance and Evaluation (P&E) team examined the experiences of OSTEM interns (1) Before the internship experience; (2) During the internship experience; and (3) One year following the NASA OSTEM internship experience.

METHODOLOGY OVERVIEW

Before

Internship Application and Recruitment (p.3)

EQ1: How are prospective interns recruited to NASA OSTEM Internship opportunities? How did recruitment strategies impact prospective interns' decision to apply?

EQ2: What are the characteristics of the applicant and intern pool in the NASA OSTEM Internship Program and how do they compare year over year?

During

Internship Experience (p.4)

EQ3: What short-term impacts are experienced by interns during the internship experience, and how does it vary by demographics, education level, institution type, and internship characteristics?

EQ4: How did participation in the NASA OSTEM Internship Program impact interns' future planning (i.e., education and career) one year after internship completion?

After

Outcomes One Year Following Internship (p.5)



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INTERN PROFILES

To amplify the interns' lived experiences during the internship, the evaluation team used data from focus group discussions to create three intern profiles. The profiles offer an insider view into an amalgamation of experiences shared by the interns. As data was analyzed, important categories related to differences in experiences emerged. These categories related to interns' majors, internship format (i.e., in-person, hybrid, virtual), and their descriptions of belongingness and STEM Identity.



Meet Pat!



Pat is an **undergraduate STEM major** who is currently enrolled at a **Minority Serving Institution (MSI)**. Pat has always dreamed of working for NASA and has always been interested in Space Exploration. Pat received good communication from the mentor in advance of the internship and was excited to travel to a new city and engage in an **in-person internship** on-site at a NASA Center / Facility. The NASA OSTEM Internship experience was everything Pat had ever dreamed of. Pat regularly participated in workshops, seminars, and even had the opportunity to attend a conference with their mentor. The internship had an immense impact on Pat's educational and career trajectory. In fact, Pat has decided to apply to graduate programs to continue studying aerospace engineering. For Pat, the NASA OSTEM Internship opened doors to new opportunities. Pat hopes to return to NASA someday.

Meet Alex!



Alex is an **undergraduate non-STEM major** who is currently enrolled at a **non-MSI** located near a NASA Center / Facility. Participating in a NASA OSTEM Internship had never crossed Alex's mind until an academic advisor brought the opportunity to their attention and encouraged them to apply. Due to their **internship being hybrid** (i.e., in-person / virtual), Alex only had to travel on-site periodically and for onboarding. Alex's equipment arrived in a timely manner in preparation for their first day. Alex often came onsite to participate in tours, workshops, and seminars. Participation in these experiences enabled Alex to feel as though they belonged in the NASA OSTEM internship community despite the hybrid format of the internship. While Alex felt a Sense of Belonging to the internship community, Alex enjoys their current non-STEM career path and intends to continue in that pathway.

Meet Jordan!



Jordan is a **graduate non-STEM major** who is enrolled at an **MSI**. Jordan first learned about the NASA OSTEM Internship Program through an event organized by NASA at their institution. The badging process was easy due to the proximity to Jordan's institution. However, Jordan experienced a significant delay in receiving their equipment. **As a virtual intern**, and due to the delay in receiving equipment, Jordan was not able to check their NASA email, which limited their ability to stay engaged with the internship community. Once Jordan received the equipment, Jordan was able to connect with their mentor and the intern community with ease, which enabled Jordan to engage in meaningful work. As Jordan considers future career plans as a non-STEM major, Jordan has many avenues to grow in their career and will consider both STEM and non-STEM related professions.



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Before the Internship Experience

Key Findings

The **key findings and recommendations** are based on information gathered from **listening sessions with personnel, intern focus groups, and data from NASA STEM Gateway** for FY22 and FY23.



Before

- Interns learned about NASA OSTEM internships through informal (e.g., **civil servants, peers, mentors**) and formal strategies (e.g., **information sessions, recruitment visits**).
- Across FY22 and FY23, **281,000 applications** were submitted, resulting in over **4,500 internships**.
- The number of virtual internships decreased from **61%** in FY22 to **28%** in FY23.
- Interns mentioned the **importance of having a trusted source (i.e., mentor, colleague, peer)** recommend the internship when deciding to apply to the NASA OSTEM Internship Program.
- On average, interns were located **approximately 850 miles** from the location of their internship.
- About **18%** of interns completed more than one internship.
- Interns recommended **increasing awareness of non-STEM NASA OSTEM internships**.



Key findings and recommendations focus on how interns learn about the NASA OSTEM Internship Program and the characteristics of the applicant and intern pools in FY22 and FY23.

NASA STEM Gateway System

- Implement a **data audit or send auto-reminder emails and/or text messages** to applicants to either continue or withdraw their applications.
- **Categorize the majors (STEM / non-STEM)** in the NASA STEM Gateway system.

Recruitment

- Increase awareness of **NASA's breadth of STEM capabilities** that require majors beyond space and aeronautics.
- **Enhance recruitment of female students** to the NASA OSTEM Internship Program.
- Continue to increase overall awareness of NASA OSTEM internships through **institutional connections** (i.e., faculty, student, and professional organizations), conferences, and social media campaigns.

Broadening Participation

- Consider the goals of the NASA OSTEM Internship Program to determine if recruitment strategies or campaigns to broaden awareness for **veterans and non-STEM majors** should be a priority.
- Continue to **examine characteristics of applicants and interns year-over-year**.

Recommendations



Consider

Key Findings



The **key findings and recommendations** are based on information gathered from **intern focus groups, the Internship Experience Survey, and NASA STEM Gateway** for FY22 and FY23.



During the Internship Experience

- **84%** of interns felt accepted, **96%** felt their thoughts and opinions were valued, and **93%** plan to continue in STEM profession.
- **83%** of interns felt the internship confirmed or enhanced their STEM Identity.
- **Authentic hands-on experiences** were the most influential experience.
- The internship influenced interns' **career path** and reassured their decision to **work in STEM**.
- Five challenges for onboarding include: **travel difficulties, timely communication, housing, equipment, and information on stipend**.
- Interns explained the following would support the onboarding experience: **an increase in communication, financial assistance for travel, onboarding, and badging, and available equipment at the beginning of the internship experience**.



Key findings and recommendations focus on interns' experiences during their internship (i.e., onboarding, professional experiences, Sense of Belonging, STEM Identity).

Onboarding

- Investigate the **equipment process** for interns to identify any potential barriers for interns' equipment to be available at the start of internship.
- Provide **travel grants** for interns with financial need to enable interns to travel to center for onboarding tasks (i.e., badging, travel to and from internship, housing) to mitigate possible barriers.
- Consider **further analysis of how challenges** (i.e., onboarding, travel to NASA Centers / Facilities) identified by focus group participants may impact some groups more heavily.

Professional Experiences

- Continue to provide all interns (i.e., virtual, in-person, hybrid, STEM, non-STEM) **direct, authentic, experiential activities and relationship-building / networking opportunities**.
- Continue to offer some **virtual internships or flexible hybrid internship opportunities** to provide access to the NASA OSTEM Internship Program.

Recommendations



Consider


During

After the Internship Experience

Key Findings

The **key findings and recommendations** are based on information gathered from the **Retrospective Internship Survey, National Student Clearinghouse Data, and NASA STEM Gateway** for FY22 and FY23.



- Most interns reported improved skill development in **11 professional areas**, and some skills improved with additional internship experiences.
- Interns who completed **two internships** reported significant improvements in their **problem-solving, collaboration, creative thinking skills, and graphs / charts reading** compared to those who completed just one internship.
- Interns who completed **three or more internships** reported significantly greater improvements in **critical thinking and critical reading** as compared to those who completed one internship.
- Interns indicated their internship experience **positively impacted** their education and career paths.
- **Real-world experience, critical thinking, collaboration, and project-based learning** were the lasting impacts most frequently reported by interns.
- Undergraduate students who accepted an internship during FY22 enrolled and persisted in college at **significantly higher rates** in the subsequent semesters following their internships (**79%**) compared to undergraduate students who were not selected for internship opportunities (**73%**).



Key findings and recommendations focus on how the internship experience (i.e., authentic, real-world professional experiences) impacted interns' professional skills and their education and/or career plans.

NASA OSTEM Internship Program

- Evaluate the goals of the NASA OSTEM Internship Program to determine **if depth** (e.g., 3+ internships) or **breadth of interns** (i.e., one internship for more interns) should be prioritized when **extending internship offers**.
- The results of the Retrospective Survey highlighted that completing **two internships** offered similar outcomes to interns completing three or more internships. Consider the following: Future evaluations could collect additional data using the Retrospective Internship Survey to provide more robust links between the number of internships and **impact with larger sample sizes**.

Recommendations



Consider



After