NASA OSTEM Internship Process Evaluation: Report Brief

FY22 Internship Process Evaluation

The Internship Process Evaluation examined the NASA Office of STEM Engagement (OSTEM) Internship Program application process. This report provides baseline evidence to inform future programmatic processes and actionable recommendations to support full and equitable participation of all students in STEM. This process evaluation analyzed the FY22 NASA OSTEM Internship Program *Applicant* and *Intern* data to understand the application process and compare demographic characteristics across the FY22 Applications and Interns. This study and the evidence generated from it play a critical role in achieving *Agency's Strategic Objective 4.3: Build the Next Generation of explorers/Engage students to build a diverse future STEM workforce* (NASA Strategy for Science, Technology, Engineering, Mathematics (STEM) Engagement 2020-2023).

Purpose

The purpose of the Internship Process Evaluation was to develop knowledge of the process used to apply for NASA OSTEM Internships, identify strengths and challenges in that process, and validate the *Applicant* and *Intern* pools to generate a baseline understanding of demographic characteristics of FY22 NASA OSTEM Internship *Applicants* and *Interns*.

Evaluation Design

This Internship Process Evaluation used a sequential approach to data collection (see Figure 1). Phase 1 of the study included descriptive quantitative data analysis. Results from Phase 1 informed the recruitment strategy for Phase 2 of the study, in which qualitative data were collected through semi-structured focus groups / interviews. This *Final Report Brief* brings together all findings and offers recommendations for enhancing the NASA OSTEM Internship application process.

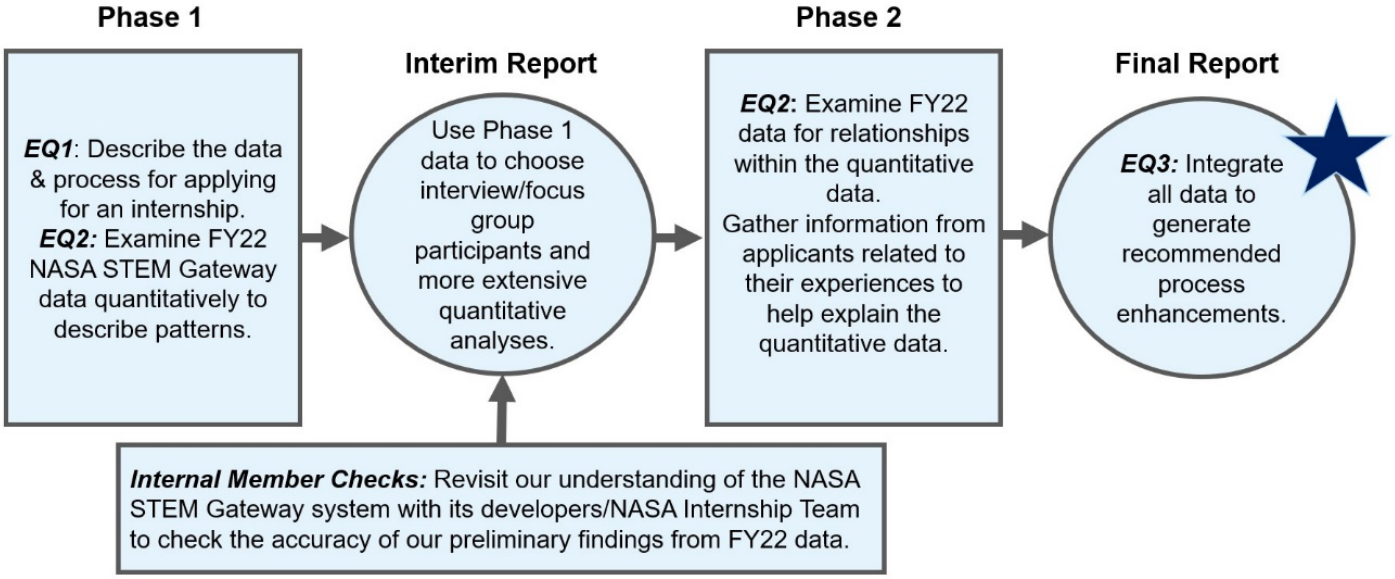


Figure 1. Research Activities Across Phases

Figure 2 lists the three evaluation questions, the data sources, and data analysis procedures.

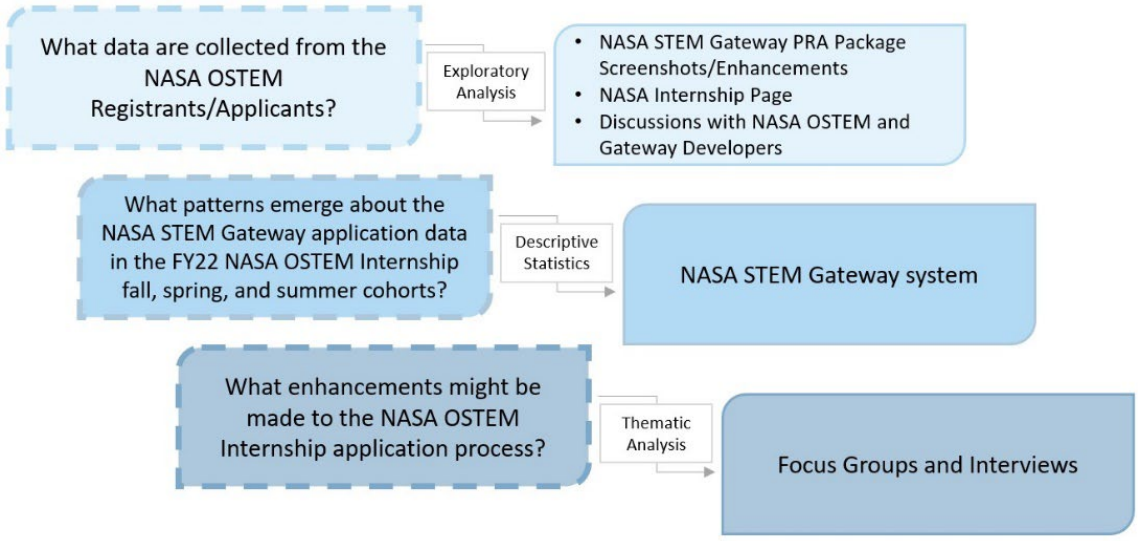


Figure 2. Evaluation Questions with Identified Data Sources and Analysis Procedures

WHAT DATA ARE COLLECTED IN THE NASA STEM GATEWAY SYSTEM?

Data are collected at all three steps of the OSTEM internship application process within the NASA STEM Gateway System (see Figure 3). When a profile is created, personal information, demographic information, and education/affiliate organization data are collected. As prospective Interns explore Internship opportunities, their eligibility is assessed prior to beginning an application.

Finally, when a prospective Intern applies for an Internship engagement opportunity, information is requested for ten categories, four of which are required (i.e., transcripts, personal interest statements, resumes, etc.).

Step 1: Create a Profile in NASA STEM Gateway

Personal Information:
Date of Birth, Country of Residence, Address, and Phone Number

Demographic Information:
Gender, Race, Ethnicity, Veteran Status, Disability Status, US Citizenship or Lawful Resident Status

Education or Affiliate Organization Information:
Applicant Type (High School, Community College, etc.), Grade Level, Education or Affiliate Organization, and Authorization for NASA Media Release

Step 2: Explore Internship Opportunities

Applicants can investigate available Internship opportunities

Eligibility is assessed:
Student/Educator, Lawful Permanent Resident or U.S. Citizen or Lawful Permanent Resident, Aged 16 or older

Step 3: Apply for an Internship

Information is requested for ten categories:

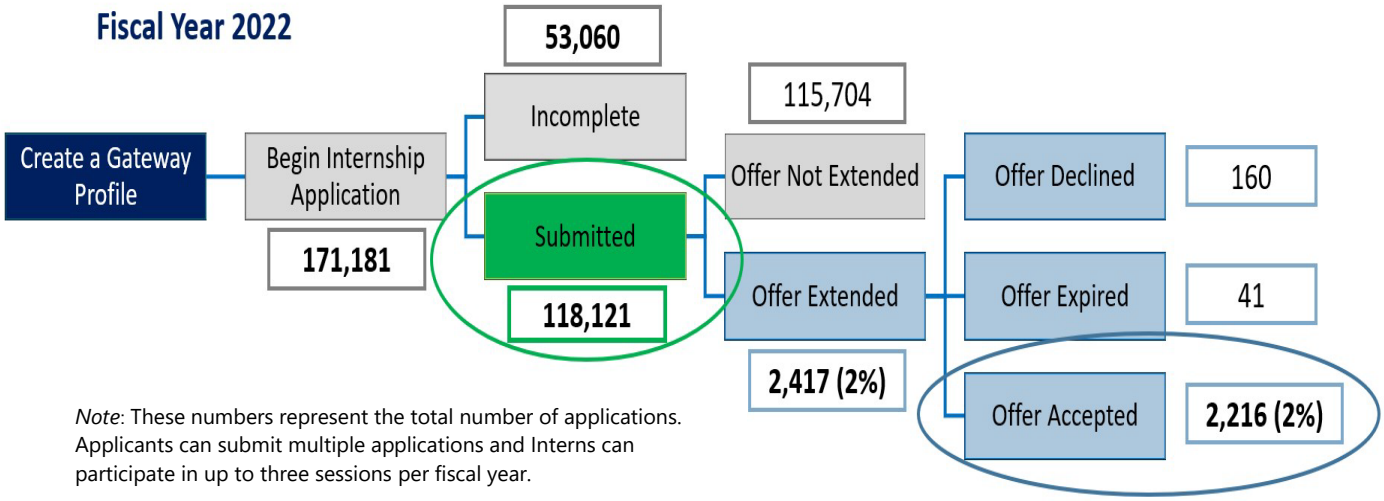
Four are required:
Education or Affiliate Organization, Transcripts, Internship Interests, Review and Submit

Six are optional:
GPA, Employment History, Other Experience, Resume, Skills, and Languages

Figure 3. Key Takeaways for Data Collected by NASA STEM Gateway System

WHAT PATTERNS EMERGE ABOUT THE NASA STEM GATEWAY DATA IN FY22?

A total of 171,181 applications were present in the NASA STEM Gateway system for NASA OSTEM Internships in FY22. Of that total 69% of the applications (118,121) were submitted. Of all submitted applications, 2% (2,417) received an offer and 2% (2,216) accepted the offer (see Figure 4).



Note: These numbers represent the total number of applications. Applicants can submit multiple applications and Interns can participate in up to three sessions per fiscal year.

Figure 4. Application Numbers and Categories

Findings are organized into two main sections: *Applications* and *Interns* (Figure 5). Figure 6 displays a detailed description (gender, ethnicity, race, data gathered from the focus groups, etc.) of *Applications* (in green) and *Interns* (in blue).

Demographic characteristics of *Interns* in the *Offer Accepted* category were compared to 2018 IPEDS STEM Postsecondary enrollment data for underrepresented minorities (URM) in STEM: Female, Hispanic/Latino, Black or African American, American Indian or Native Alaskan, and Native Hawaiian or Other Pacific Islander.

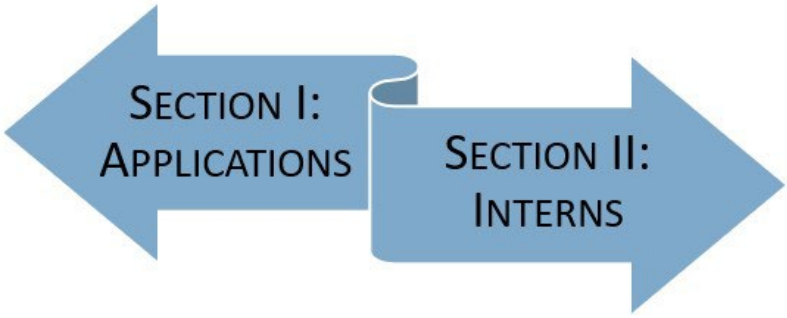


Figure 5. Organization of Findings

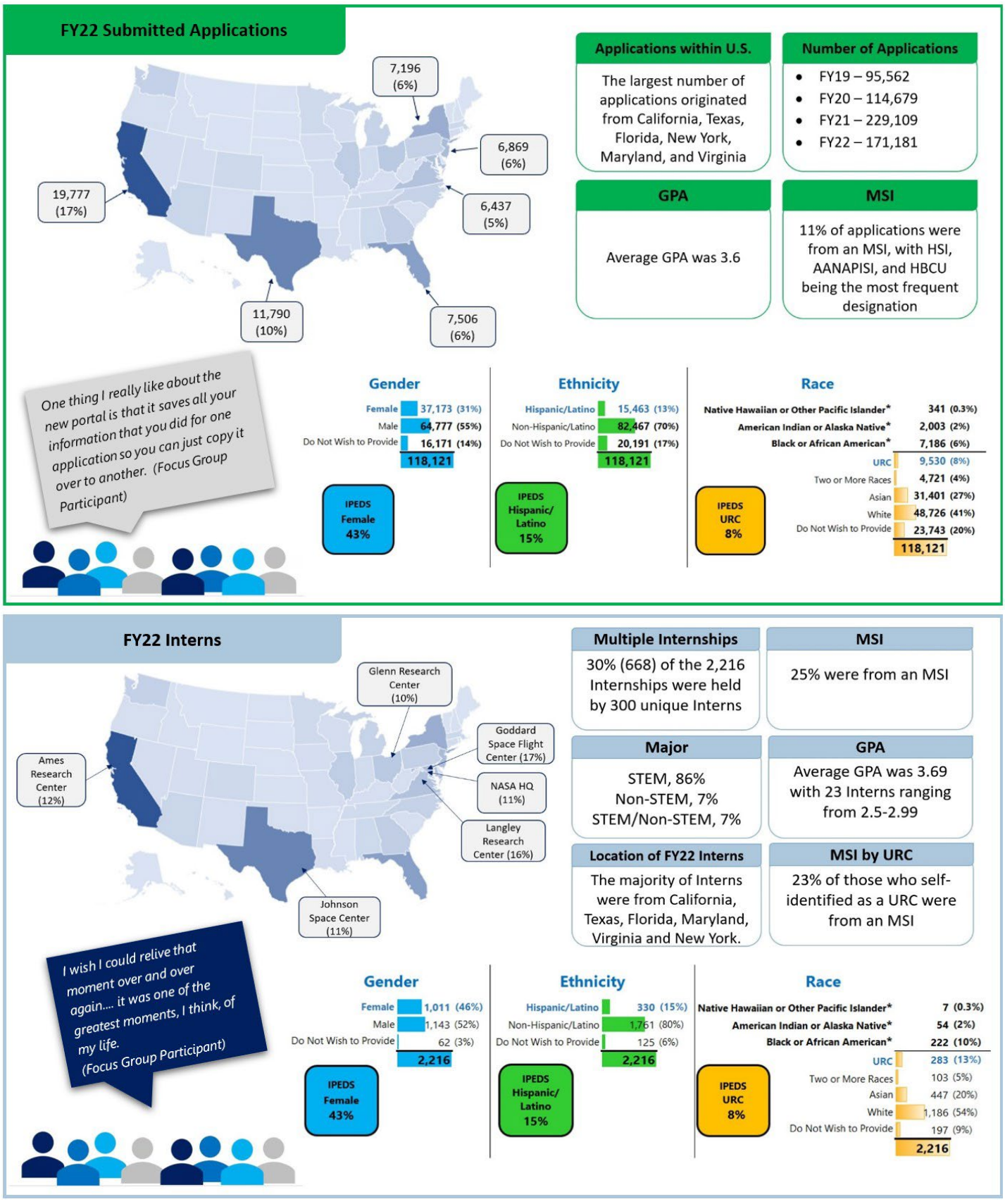


Figure 6. Characteristics of Submitted Applications and Interns

WHAT ENHANCEMENTS MIGHT BE MADE TO THE NASA OSTEM INTERNSHIP APPLICATION PROCESS?

User experiences with the NASA Internship application process were investigated in focus groups/interviews with individuals who had participated in the application process.

A total of 45 *Applicants/Interns* participated across ten focus groups and two interviews. The themes from focus groups and interviews focused on four main concepts: resources & support for submitting applications, communication received through the application process, challenges, and suggestions for the application process. A summary of the feedback received is located in Figure 7.

Resources and Supports	Communication Received	Challenges	Suggestions
• Individuals such as friends, family, mentors, teachers NASA Civil Servants, NASA Outreach Educators and NASA Contractors • Video tutorials • Previous resumes	• Verification of submissions • Being contacted by a mentor • Communications regarding not being selected • Internship offers • Unclear communication	• Inability to edit applications • Difficulty filtering through engagement opportunities • Unclear deadlines/details for the engagement openings • Not receiving updates on their application status	• A better timeline for communication • Desiring more detail in the engagement openings (e.g., skills required, education level, deadlines) • A streamlined process for editing applications and filtering through the openings based on qualifications, education level, and skills

Figure 7. Feedback form Focus Groups/Interviews

RECOMMENDATIONS

The following recommendations are offered for consideration for the NASA STEM Gateway system, the application process, to broaden participation in NASA OSTEM Internships, and future evaluation areas (see Figure 8).

Considerations for Immediate NASA STEM Gateway Implementation	Considerations for Future NASA STEM Gateway Implementation	Considerations Regarding the Application Process
1. Clarify GPA and citizenship status 2. Limit GPA values 3. If Do Not Wish to Provide is selected for demographics, remove other selection choices 4. Enable filtering options for engagement openings 5. Enable applicants to go back and forth/edit application 6. Create a codebook that defines variables of the NASA STEM Gateway database	1. Allow high school students to skip questions (e.g., major) 2. Include specific time frames to engagement openings 3. Use applicants' interests, skills, and qualifications to suggest openings. Allow mentors to filter using same criteria 4. Create dashboards to highlight data across sessions and FY (e.g., applications received and demographic data of participants)	1. Include details such as experience/skills required, qualifications required, and degree preferred into engagement opening 2. Create a timeline for communicating application status updates to applicants 3. Create a standardized interview process and timeline for applicants

Considerations for Broadening Participation	Considerations for Future Process Evaluations
1. Review existing recruitment strategies and eligibility requirements of the NASA OSTEM Internship Program, specifically at Centers/Facilities with high participation of underrepresented and underserved students 2. Create a toolkit to support applicants with application process 3. Evaluate how *Education or Affiliate Organization* information is captured to ensure accurate collection of data such as MSI designation 4. Categorize engagement openings as STEM or non-STEM	1. Conduct an Internship Process Evaluation in FY23 and FY24 to extend on this initial FY22 exploration to identify trends and evaluate efficacy of improvements across fiscal years 2. Expand the investigation to include mentor experiences and mentor engagement with NASA STEM Gateway 3. Examine the efficacy of existing recruitment strategies of the NASA OSTEM Internship Program, specifically at Centers/Facilities with high participation of underrepresented and underserved students

Figure 8. Recommendations