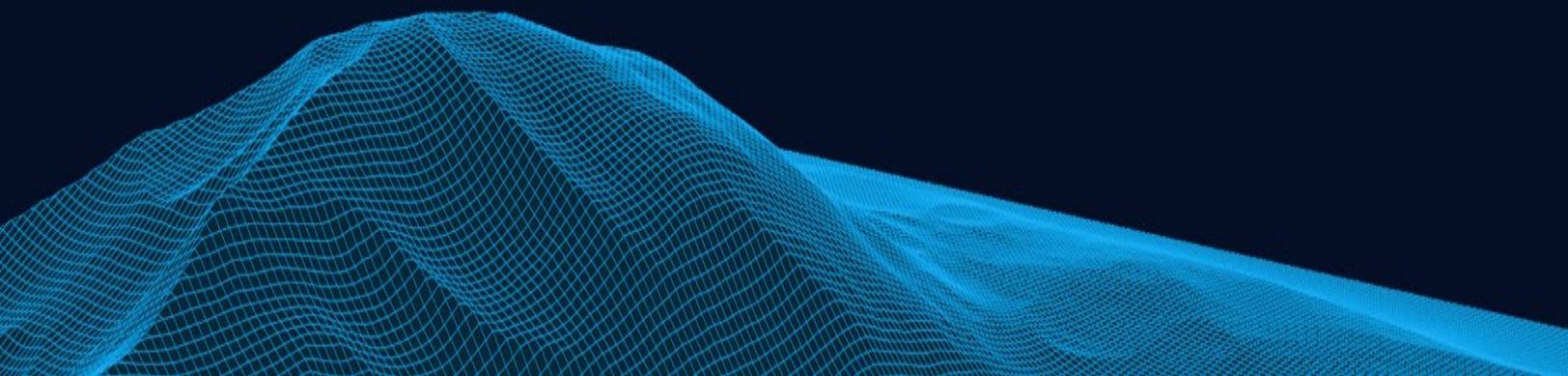


NASA STEM

Launching Tomorrow's Aerospace Workforce

FY25 INTERNSHIP PROGRAM EVALUATION

- FINAL REPORT BRIEF -



NASA OSTEM

FY25 INTERNSHIP PROGRAM EVALUATION

INTRODUCTION

NASA OSTEM internships are competitive awards that support educational opportunities and provide unique NASA-related research and operational experiences for high school and college students as well as educators. These opportunities serve interns by integrating them with career professionals, who guide them through mentor-directed tasks while promoting intern contributions to the operation of a NASA facility or advancing NASA’s missions. NASA OSTEM offers 10-16-week, part-time and full-time internship experiences onsite at a NASA center — such as at a NASA facility or contractor facility. Mentors can be civil servants, contractors, or academics conducting activities directly related to NASA’s ongoing missions. Internships are distinguished from other experiential learning opportunities by their focus on interns’ professional growth alongside mentor-directed, degree-related, workplace task completion.

This Learning Activity, the FY25 Internship Program Evaluation, builds on previous Internship evaluation activities. See [Figure 1](#).

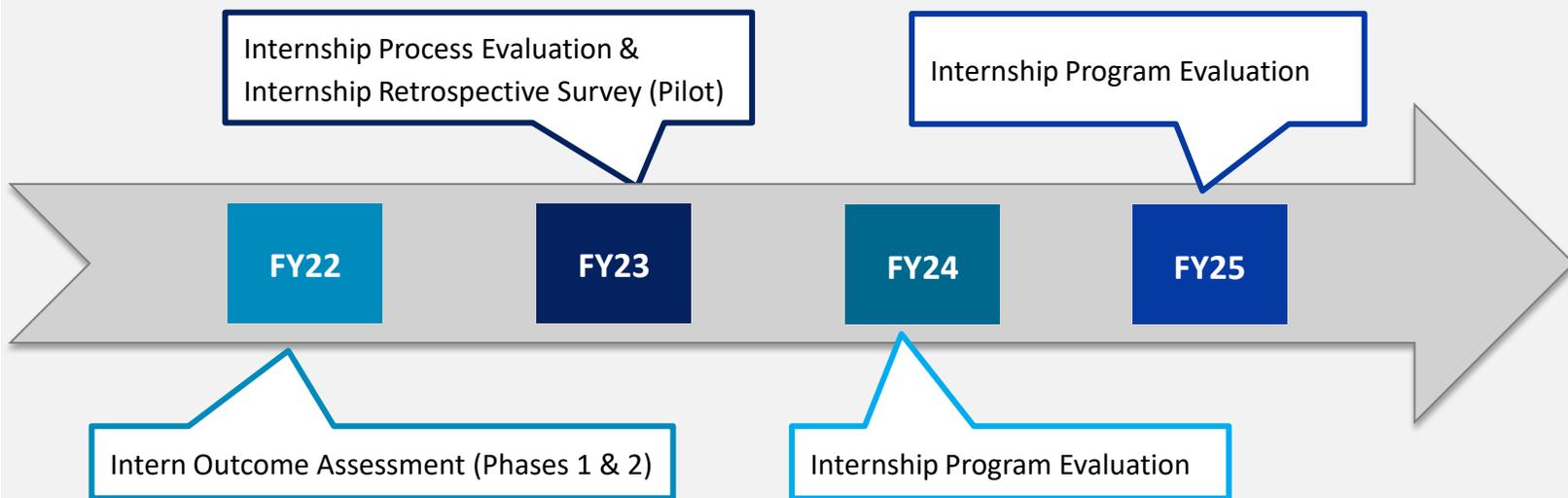


Figure 1. Internship Evaluation Activities

This Internship Program Evaluation informs NASA OSTEM’s Internship Program decision-making efforts by gathering key data from interns surrounding their intern experience at timepoints before their internship (i.e., mentor intern selection and applications), during their internship (i.e., STEM Identity and Sense of Belonging), and a year following their NASA OSTEM internship experience (i.e., impacts and outcomes). The findings presented in this report enhance the existing base of evidence that helps NASA, NASA OSTEM, and the Internship Program to understand the impacts of their investment.

METHODOLOGICAL OVERVIEW

OVERVIEW AND FOCUS

This **cross-sectional study** examined the internship applicant pool, the processes used to select interns, and the intern experience during and a year following a NASA OSTEM Internship. See **Figures 2 and 3** for evaluation questions, data sources, and methodological timing. See the FY25 Internship Program Evaluation Final Report Memo and the FY25 Internship Program Evaluation Methodology and Appendices for full details.

EVALUATION QUESTIONS AND DATA SOURCES

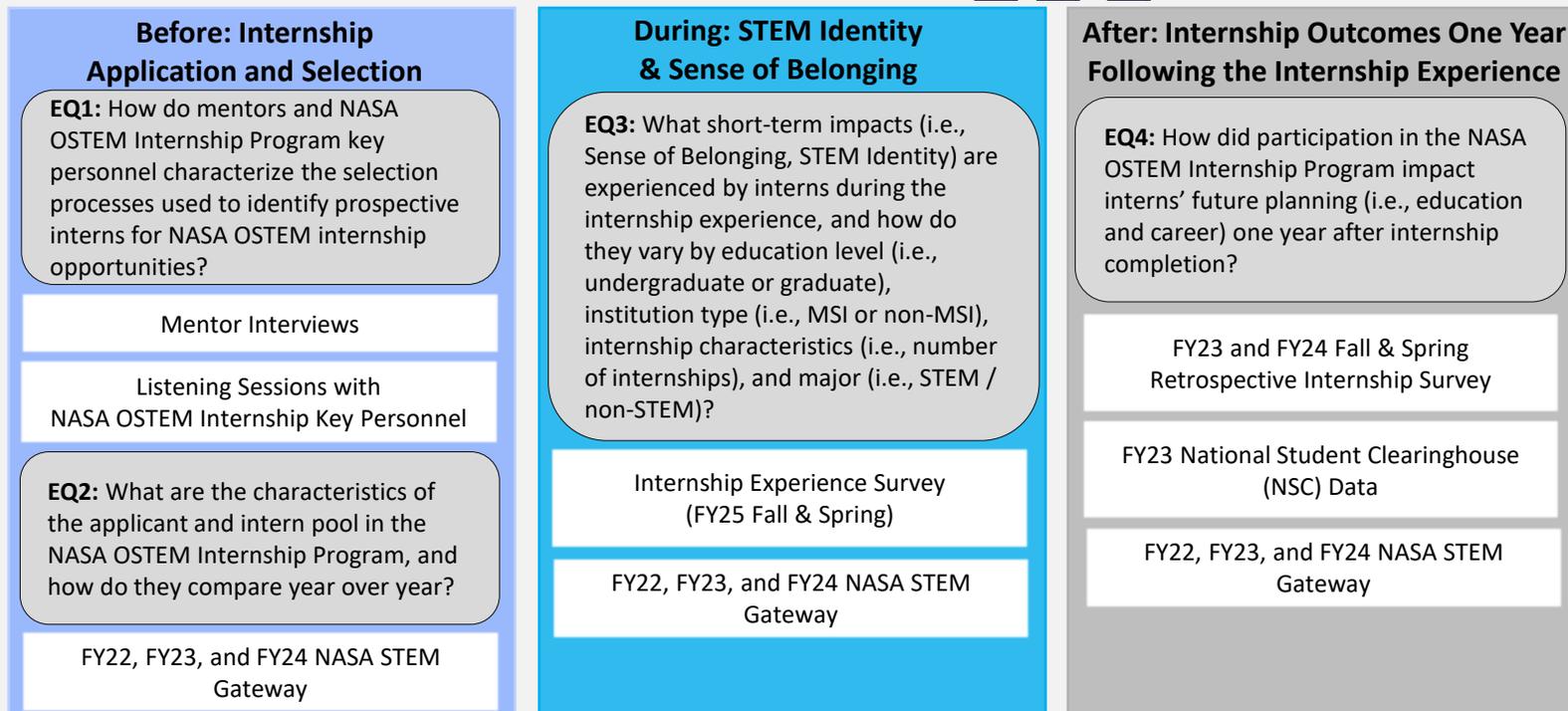


Figure 2. Evaluation Questions and Data Sources

METHODOLOGICAL TIMING

- 1 **Phase one:** Data was collected and analyzed from the NASA STEM Gateway system, National Student Clearinghouse, Internship Experience Survey, Retrospective Internship Survey, and Listening Sessions with NASA OSTEM Internship Program key personnel and mentor advisors
- 2 **Phase two:** An Interim Report was prepared based on phase one of the study, and preliminary findings were presented for internal member checks
- 3 **Phase three:** Data was collected and analyzed from the mentor interviews, an Internship Experience Survey, and a Retrospective Internship Survey
- 4 **Phase four:** Findings were compiled and presented to an Expert Review Panel (ERP), who provided external feedback and recommendations
- 5 **Phase five:** Integrated findings were generated for actionable recommendations in the form of memos — both comprehensive and Center / Facility specific

Figure 3. Phases of the Evaluation Study

EVALUATION QUESTION 1 (EQ1): How do mentors and NASA OSTEM Internship Program key personnel characterize the selection processes used to identify prospective interns for NASA OSTEM internship opportunities?

DATA SOURCES: 25 Mentor Interviews and 13 Listening Sessions with Personnel

PHASES OF INTERN SELECTION & MENTOR EXPERIENCE - EQ1 Key Findings

1 Planning for an Internship

- Mentors with 10+ years of experience described planning for the entire internship experience (i.e., by week, project, or goals) during this phase, which differs from less experienced mentors

2 Initial Review of Applications

- During initial review, mentors are more likely to consider funding and the needed project skills
- Mentors reported having difficulty using the NASA STEM Gateway System

3 Close Review of Applications

- During close review, mentors are likely to review resumes, coursework, and LinkedIn profiles
- Mentors noted difficulty accessing resumes due to the complexity of the online system

4 Interviewing

- Most mentors conducted interviews for finding a good fit between the intern and the project work
- Mentors noted that setting up interviews can be time-consuming

5 Final Applicant Selection

- Mentors reported ease with this final step of the process
- Mentors would prefer to receive notifications of where the process stands once they have submitted their selected interns (i.e., has the offer gone out, has the offer been accepted, has the offer been declined)

6 Mentor Experience

- The NASA OSTEM Internship Center Specialist is the most reported resource used by mentors
- Mentors note that communication, resource navigation, and the funding workflow/timeline were additional challenges and/or opportunities to improve efficiencies for mentors

Before

EQ1 Recommendations for Consideration

Improvements to the Process of Intern Selection

- Consult expert mentors to design templates and supports for novice mentors
- Create short 2-3-minute how-to videos for mentors
- Create a more user-friendly option for resume download
- Develop a process for applicants to indicate preferred availability for interviews during application
- Develop a tracker in the NASA STEM Gateway to inform mentors on the steps and stages after intern selections have been submitted
- Enhance the field in the NASA STEM Gateway where interns can document their skills to better support the application process and mentor selection of interns

Supports or Enhancements to the Mentor Experience

- Study the Mentor SharePoint User Interface (UX) to understand how mentors search for resources
- Conduct an assessment (e.g., survey) to understand how mentor attributes (e.g., years as a mentor, average number of applicants) impact mentors' experiences and needs
- Streamline the communication plan (e.g., timing, upcoming deadlines, funding information)
- Include mentors on intern communications post-hire so mentors better understand the interns' activities
- Reorganize the Mentor SharePoint site for improved resource navigation (e.g., interactive AI bot, search function)

EVALUATION QUESTION 2 (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?

DATA SOURCE: NASA STEM Gateway for FY22-25

Characteristics of Applicant and Intern Pools

EQ2 Key Findings

- The number of applications has increased each fiscal year, while the number of internships available has decreased slightly
- Overall, the percentage of interns pursuing STEM majors stayed consistent at around 90% across fiscal years
- Approximately 37-48% of all interns in the past four years held multiple NASA OSTEM internships
- The top five institutions that interns were affiliated with in FY22-24 were University of Central Florida, Georgia Institute of Technology, University of Maryland, University of California, and Purdue University

EQ2 Recommendations for Consideration

Characteristics of Applicants and Interns

- Continue disaggregating data (e.g., types of STEM majors that align with the aerospace industry, institutional patterns, non-traditional pathway participants) and provide reporting that offers longitudinal displays of applicant and intern characteristics
- Investigate the impact of returning interns to the NASA OSTEM Internship Program to inform programmatic decisions about depth (i.e., multiple internships) versus breadth (i.e., one internship for more interns)

EVALUATION QUESTION 3 (EQ3): What short-term impacts (i.e., Sense of Belonging, STEM Identity) are experienced by interns during the internship experience, and does it vary by education level (i.e., undergraduate or graduate), institution type (i.e., MSI or non-MSI), internship characteristics (i.e., number of internships), and major (i.e., STEM / non-STEM)?

DATA SOURCE: Internship Experience Survey

Sense of Belonging and STEM Identity

EQ3 Key Findings

- All interns (e.g., STEM degrees, non-STEM degrees, male and female interns) felt similar levels of belonging in their internship experience (M=35.33 out of 42).
- Interns with STEM majors had a higher sense of STEM identity (M=5.61 out of 7) than non-STEM majors (M=3.93). Male interns reported higher levels of STEM identity (M=5.59) than did female interns (M=4.98).

EQ3 Recommendations for Consideration

Sense of Belonging and STEM Identity

- Review the Internship Experience Survey to ensure future evaluation efforts are aligned to the programmatic needs of the NASA OSTEM Internship Program
- Continue efforts to strengthen the NASA OSTEM Internship Program to support interns' sense of belonging, STEM identity, and skills development



Before



During

EVALUATION QUESTION 4 (EQ4): How did participation in the NASA OSTEM Internship Program impact interns' future planning (i.e., education and career) one year after internship completion?

DATA SOURCES: Retrospective Internship Survey

Education and Career Impacts

- More than 90% of respondents agreed that participating in a NASA OSTEM Internship impacted their professional growth, career goals, and personal future plans. STEM and non-STEM majors were equally likely to agree on these impacts
- Former NASA OSTEM interns agreed that the internship experience had an impact on their education. The majority of former interns continued postsecondary education after the experience, with one-half of those in graduate programs
- 76-97% of all interns reported growth in important professional skills, with slight differences in emphases for STEM majors (e.g., desire for STEM knowledge and computer programming) versus non-STEM majors (e.g., creative thinking)

EQ4 Key Findings

EQ4 Recommendations for Consideration

Education and Career Impacts

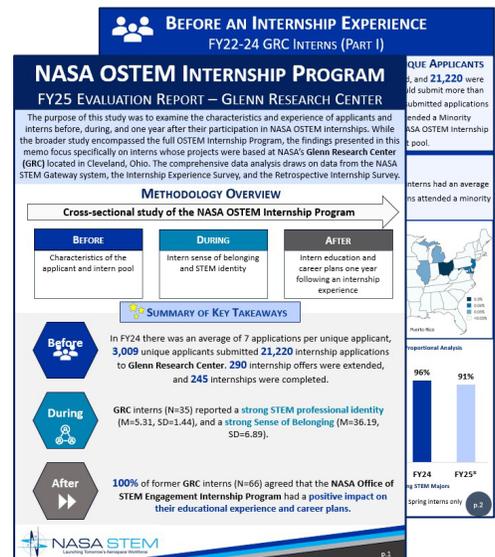
- Review the Retrospective Survey to ensure future evaluation efforts are aligned to the programmatic needs of the NASA OSTEM Internship Program
- Map internship experiences to aerospace workforce subsectors (e.g., IT, AI, engineering, drones, satellites) to enable investigations of intern progressions along aerospace workforce pathways (e.g., traditional and non-traditional)
- Investigate the utility of resources (e.g., the [ONET – STEM Occupations](#), NSF-NCSES) to match STEM majors with industry occupations to better align internship outcomes with industry needs

Evaluation Memos

A Final Report memo and set of Center / Facility memos were created in FY25 to promote programmatic decision-making for the Internship Program and individual Centers / Facilities.

“ This evaluation offers a clear, data-driven look at how the Internship Program shapes future STEM professionals. The findings highlight the strong sense of belonging interns develop and shows that participants credit the experience with positively influencing their career plans. It’s exciting to see how these results can guide our recruitment and help us continue delivering the high-impact, project-based opportunities that prepare interns for careers in aerospace and beyond. ”

- Center / Facility Internship Program Specialist



After

Memos

FY25 Internship Program Evaluation

This study examined the characteristics and experience of applicants and interns before, during, and one year after their participation in NASA OSTEM internships. Data to inform this summary of key takeaways and recommendations encompassed the Mentor Interviews, Listening Sessions with Key Personnel, NASA STEM Gateway, the Internship Experience Survey, and the Retrospective Internship Survey.

	Topic	Key Takeaways	Recommendations
EQ 1	Selection of Interns	Mentors generally follow a five-step process for reviewing applications and selecting interns with the necessary skills for the project (e.g., planning, initial review, close review, interviewing, and final selection).	Consider enhancing the selection of interns through more user-friendly ways to download resumes, streamlined processes to schedule interviews, and an enhanced skills field for internship openings.
	Mentor Experience	Communication regarding post-hire schedule and expectations for interns, navigation of the abundance of mentor resources, and the funding timeline for internships are aspects that present challenges for mentors during the process for selecting interns.	Consider conducting an assessment that addresses mentor needs (e.g., communication plans, navigation of resources) to further investigate ways to enhance the mentor experience.
EQ 2	Intern Majors	Data comparisons across FY22-25 indicated that, on average, 90% of interns are STEM majors. However, details on specific STEM majors were limited.	Continue disaggregating data (e.g., types of STEM majors that align with the aerospace industry, institutional patterns, and non-traditional pathway participants) to further investigate the Internship Program’s contributions to workforce development within the aerospace industry.
	Multiple Internships	Data comparisons across FY22-25 indicated that 37-48% of interns completed multiple NASA OSTEM internships throughout the last four years.	Consider investigating impacts and outcomes for returning interns versus single-term interns to inform programmatic alignment with OSTEM priorities and the Program’s contributions to aerospace workforce development.
EQ 3	Sense of Belonging	All interns reported a high level of Sense of Belonging (M=35.33 out of 42).	While data indicates interns’ Sense of Belonging and STEM Identity are at a high level, continue to explore these aspects to enable the Internship Program to validate and continue to cultivate intern Sense of Belonging and STEM Identity in the NASA community.
	STEM Identity	Interns reported a high sense of STEM Identity (M=5.3 out of 7). There were some nuanced differences with STEM majors (M=5.61) reporting a significantly higher STEM Identity than non-STEM majors (M=3.93) and male interns (M=5.59) reporting a slightly higher level than female interns (M=4.98).	
EQ 4	Education and Career Impacts	Interns indicated the NASA OSTEM Internship positively impacted their education plans and career goals.	Continue investigating education / career impacts and the development of professional skills in alignment with OSTEM priorities and further investigate the Internship Program’s contributions to workforce development within the aerospace industry.
	Impact on Professional Skills	Interns indicated the NASA OSTEM Internship positively impacted their development of professional skills (e.g., explaining their ideas to others verbally, problem solving, creative thinking).	