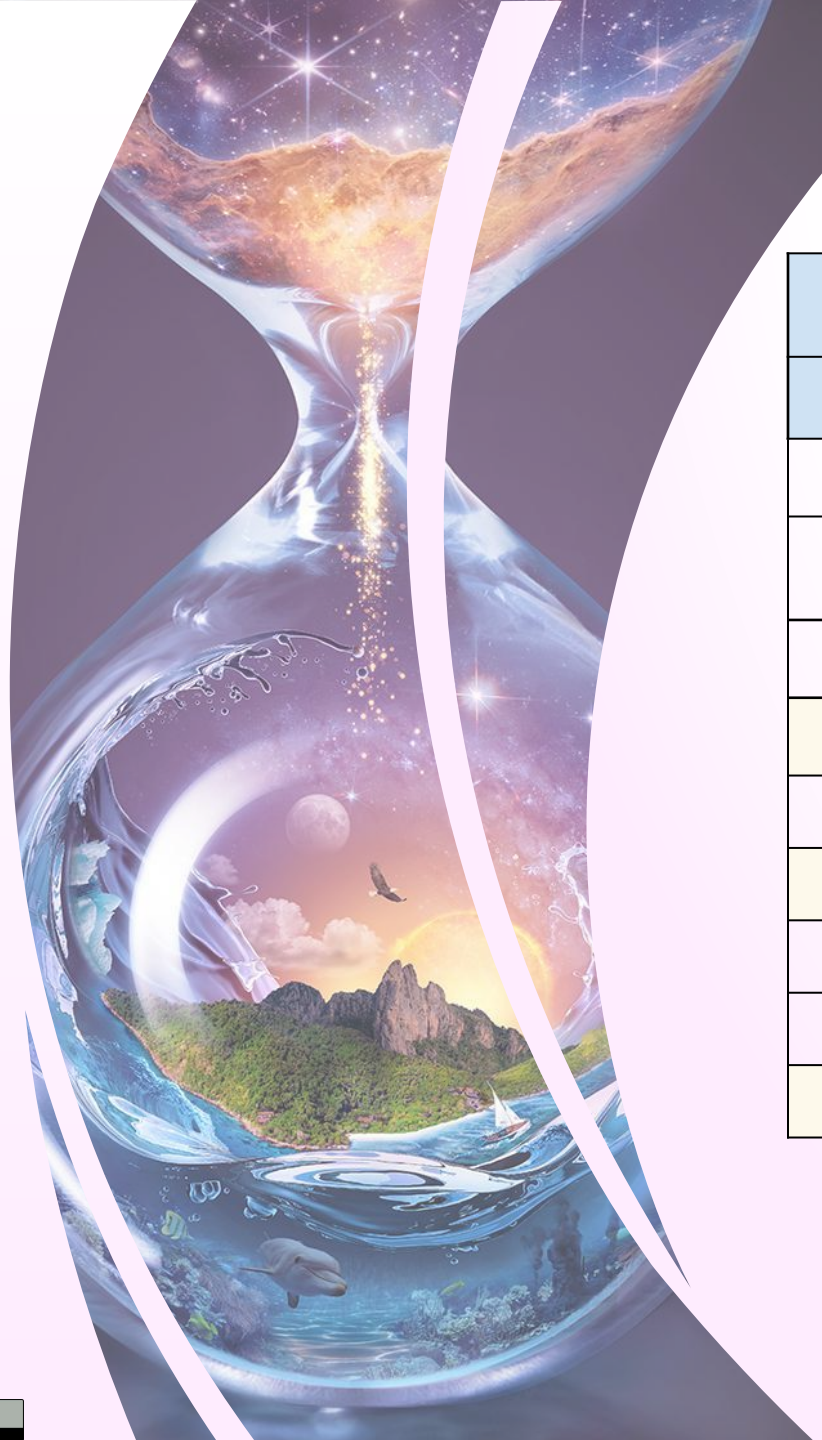
National Aeronautics and Space Administration

TOPS

June 2023

Community Panel

NASA HQ TOPS Core Team
Dr. Chelle Gentemann, Science Lead
Yvonne Ivey, Equity Lead
Dr. Holly Norton, Content Coordinator
Dr. Malcolm Glover, Community Coordinator
Kevin Murphy, Chief Science Data Officer



Agenda – Day Three

Friday June 16th, 2023 Doubling Participation		
Time (ET)	***Agenda Item***	***Presenter***
12:00 PM	TOPS Recruitment and Outreach	Amanda Adams
12:30 PM	2024 Engagement Strategy	Amanda Adams Paul Bremner
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4:10 PM	**Day 3 of Panel Ends**	

Welcome!

We are encouraging people to use #ToOPenSci and #IHeartOpenScience

Submit Feedback or Suggestions

Your inputs are essential to the success of our mission. Throughout this week's panel, please feel free to submit questions, feedback, or suggestions via the feedback tool.

You can use the QR code to access the feedback tool

TOPS Recruitment and Outreach

Amanda Adams
Transform to Open Science
Communications Lead

TOPS COMMS TEAM

Amanda Adams
Comms Lead

Adam Farragut
Strat Comm

Jaclyn Stursma
Digital Community

Brian Ressler
Digital Community

GOALS

01

Recruit 20,000 researchers and scientists to complete Open Science 101 curriculum by 2027. **(KPI-1)**

02

Increase awareness of open science principles, highlighting the greater impact of scientific efforts and more equitable access to science results.

03

Maintain and evolve the TOPS digital content and community using TOPS repositories and platforms such as GitHub, Jupyter Book, Zenodo.

04

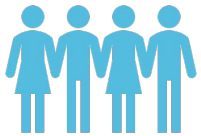
Elevate outreach to extended engagement with historically underrepresented groups. **(KPI-2)**

05

Engage with the aligned federal agencies and HELIOS institutions participating in a Year of Open Science

AUDIENCE

PRIMARY



Future TOPS Community

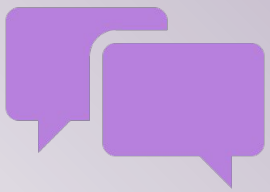
Recruitment of potential researchers to take TOPS Open Science 101 and become active members of the community

Goal of 20,000 researchers completed TOPS training by 2023

Current TOPS Community

Foster engagement among current researchers and scientists using GitHub and engaging in Open Science

SECONDARY



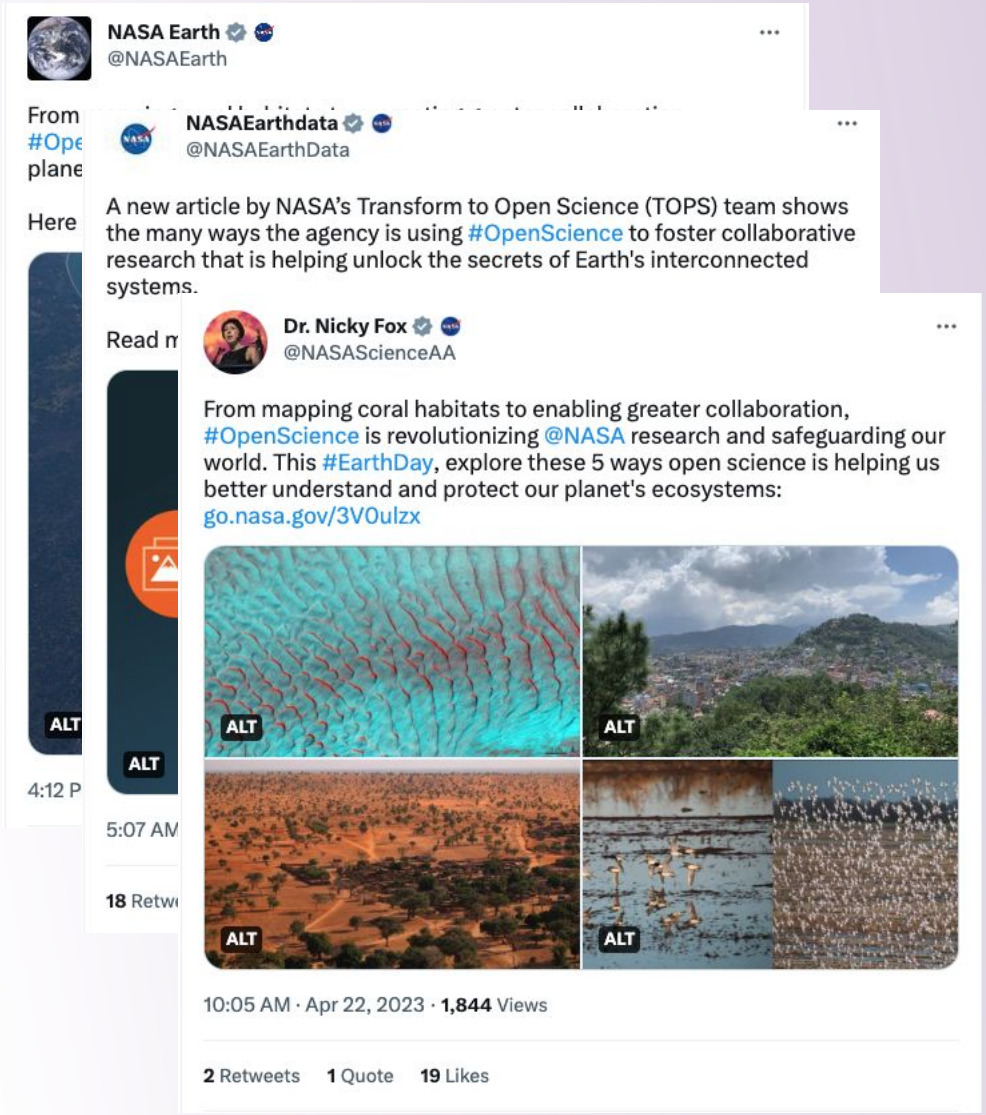
Open Science Advocates

The community that can help tell the story and share the successes and increase awareness of the humanitarian and planetary benefits of open science.

TACTICS

Building FUTURE TOPS Community

Future TOPS community members are researchers and scientists who have not yet enrolled in a TOPS Open Science 101 course. TOPS aims to badge 20,000 researchers and scientists in Open Science 101, driven by targeted communications efforts.



Social Strategy

Collaborate with existing NASA social media accounts to promote open science.

- Open science success stories
- Free training opportunities
- Monthly Forums
- Funding announcements
- Features - Ex. Earth Day

TACTICS

Strengthening and engaging CURRENT TOPS Community

Current TOPS community members are researchers and scientists who are actively participating in the GitHub community.

1. Sign up for the TOPS Monthly Newsletter to stay up-to-date with the curriculum, TOPS events and more (we are actively migrating this link to a constant contact link, so updated link to come)
2. Join the TOPS LinkedIn Group and share announcements, news and more with the open science community
3. Engage with other researchers doing open science on the TOPS GitHub discussion board
4. Follow the TOPS Blog for highlights and success stories of examples of open science in action
5. Have your own open science success story? We'd love to hear from you! Fill out our contact form to let us know how you're contributing to open science.

MEASUREMENT

- Number of researchers enrolling in Open Science 101
- Growth in community via TOPS controlled platforms
- Conference outreach metrics – QR Code
  - Increase attendance in workshops
- Number of registrants subscribing to TOPS newsletter

2024 Engagement Strategy

Amanda Adams
Transform to Open Science
Communications Lead

Paul Bremner
Transform to Open Science
Project Scientist

TOPS KPIs
KPI-1 Support 20K researchers to earn NASA's open science badge
KPI-2 Double the participation of historically excluded groups across NASA science
KPI-3 Enable five major scientific discoveries through open science principles

2024 Recruitment Strategy

The TOPS goal is to support the science community's transformation towards open science to accelerate scientific discovery while supporting and strengthening NASA SMD's DEIA initiatives and environmental justice work.

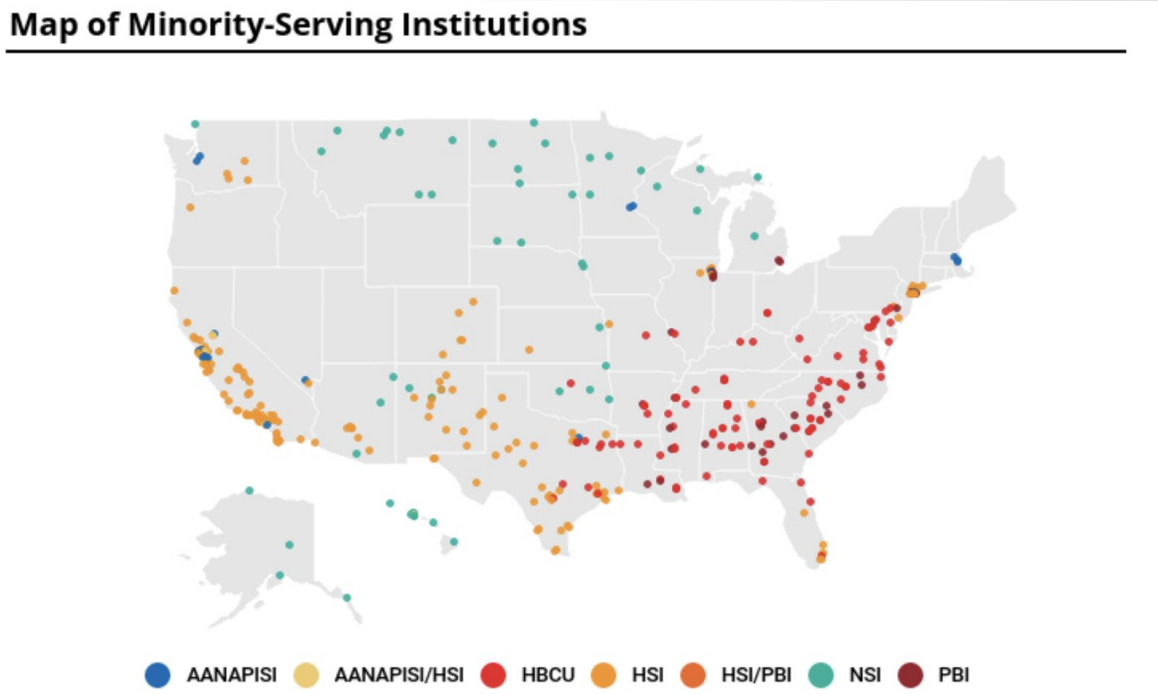
The TOPS team is targeting the general scientific community as well as focusing on underrepresented groups, with a priority audience of anyone that could, or does, receive NASA SMD funding for science activities.

2024 Conferences

The TOPS Team will be more selective with event attendance in 2024, based on expected number of attendees, diversity, and CSDO priorities.

- Build upon 2023 outreach strategy
- Utilize opportunities where NASA SMD already has an exhibit presence, reducing cost and expanding reach.
  - Hyperwall presentations
  - Network building
- Collaborate with TOPS Champions and TOPS network already attending events by incorporating the TOPS message into their content.

MSI and HBCU Engagement



- More direct engagement with MSIs and HBCUs
  - Participation in MUREP Road Tours
  - Leveraging geographic distribution of TOPS Champions
  - Focus on early-career researchers and undergraduate students

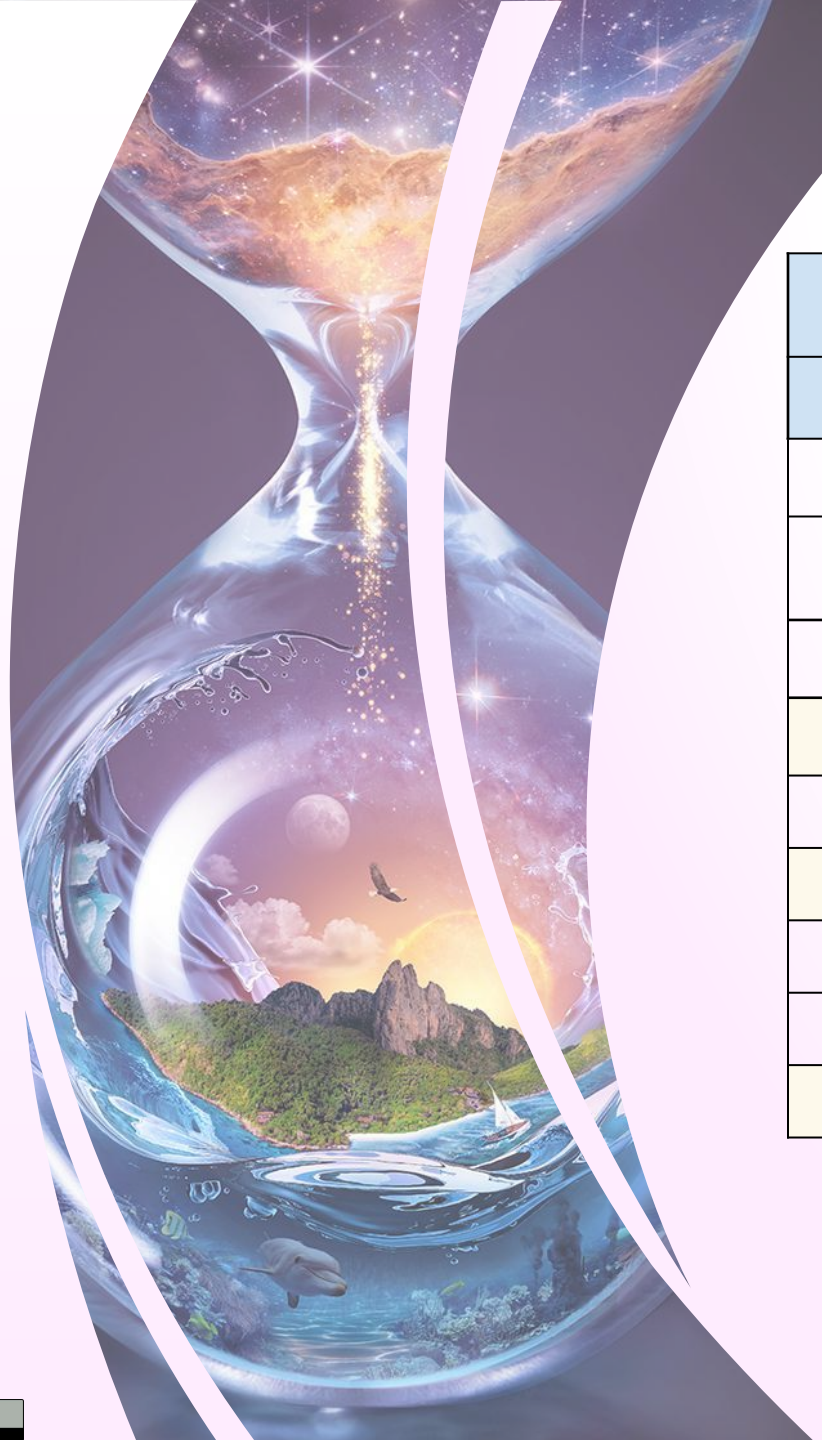
Instructor Led Trainings

- Target individual groups previously integrated in NASA science, enabling large numbers of interactions with groups that are mostly supportive of the TOPS mission
  - Data Centers
  - ESRI
  - IMPACT
  - SERVIR
- Online, instructor led public trainings allow for broader participation
  - Virtual sessions led by TOPS Champions
  - TOPST Virtual Cohorts

Self-paced Online Options

Tools such as the Massive Open Online Courses (MOOC) allow the curriculum to be available to broader audiences, especially groups without either the ability or institutional prioritization to travel where in-person instruction is available, including:

- Students
- Non-R1 Institutions and Universities
- Commercial entities
- Non-profit organizations



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HQ DEIA Engagement Strategy

Malcolm Glover
Transform to Open Science
TOPS Community Coordinator

Diversity, Equity, Inclusion, and Accessibility

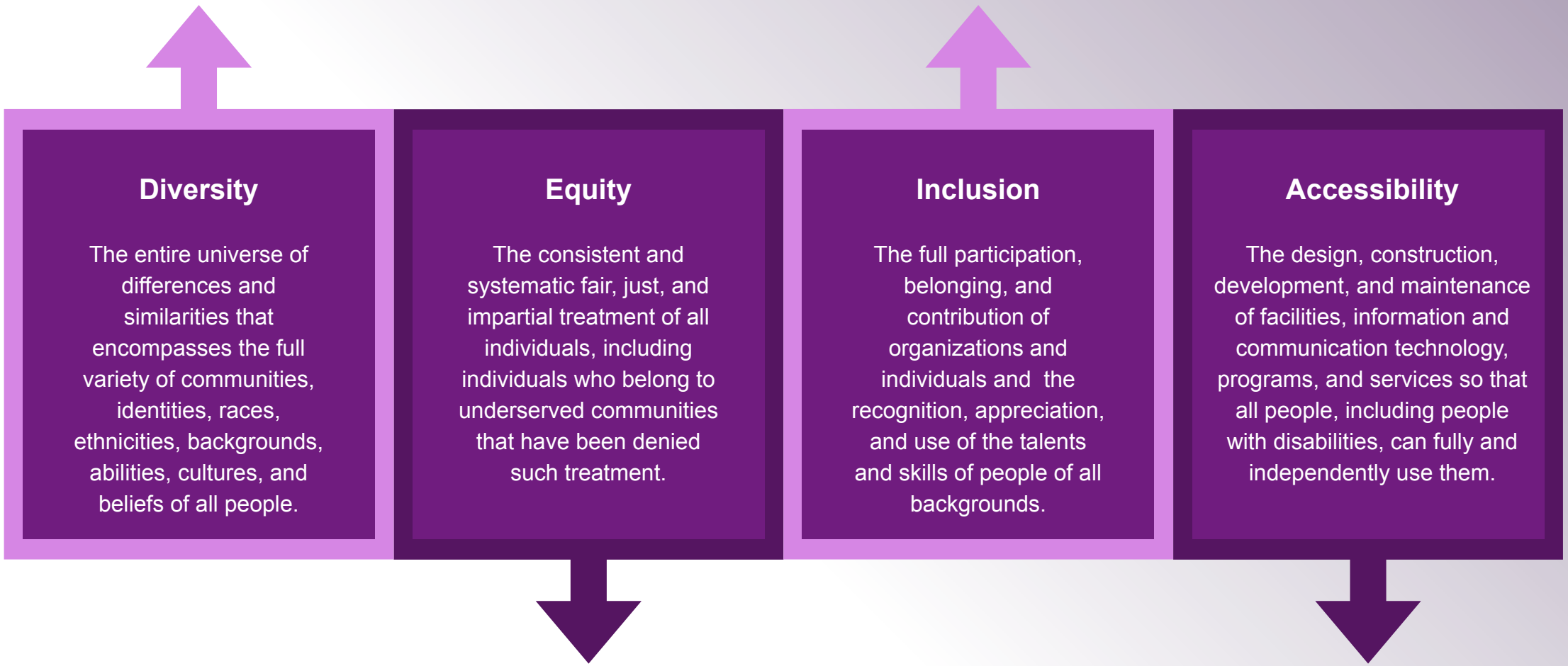
NASA's Promise

NASA is fully committed to Diversity, Equity, Inclusion, and Accessibility (DEIA) for our workforce and within our workplaces. NASA is dedicated to:

- Promoting an environment where people consistently and systematically receive fair, just, and impartial treatment;
- Fostering a culture in which people feel welcomed, respected, included, and engaged; and
- Ensuring people can fully and independently access facilities, information and communication technology, programs, and services

Policy Statement on DEIA for NASA's Workforce and Workplaces, Bill Nelson, March 2023

Diversity, Equity, Inclusion, and Accessibility



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TOPS Vision and Mission

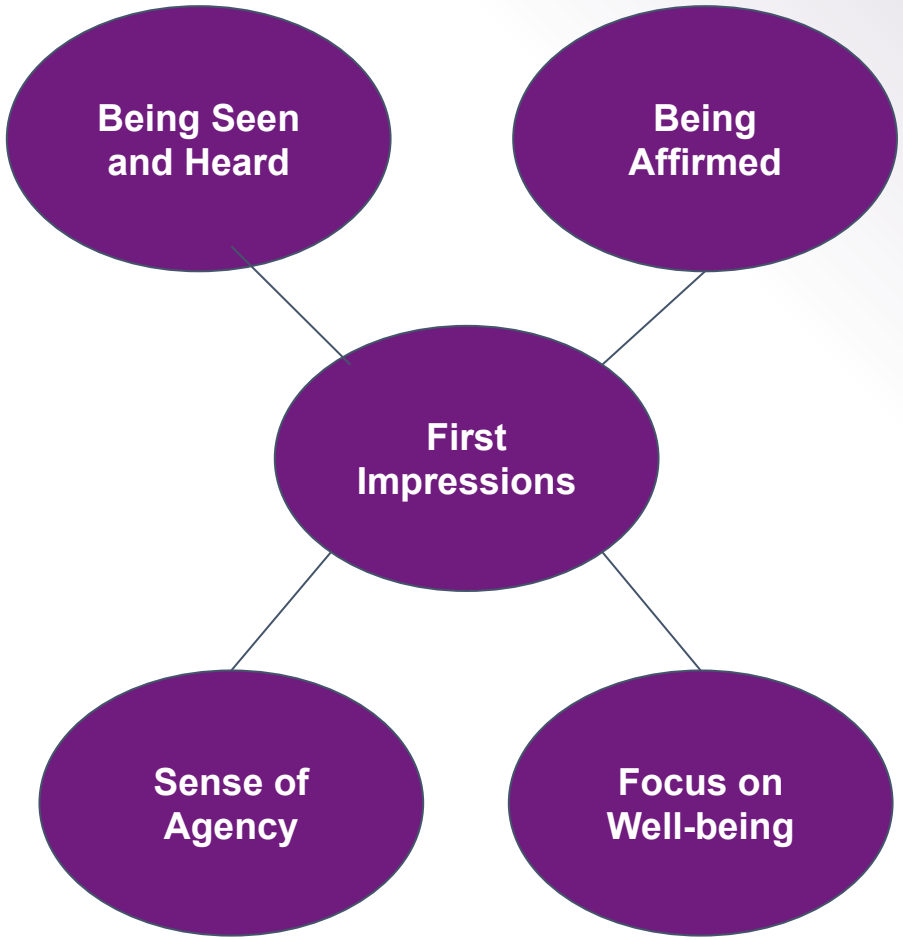
TOPS VISION

A future where new scientific discoveries and solutions are enabled by inclusive open science collaborations.

TOPS MISSION

Inspire and empower scientists, researchers, and communities to embrace open science as a catalyst for positive change, leading to a more equitable and impactful scientific ecosystem.

Select Components of Belonging



Creating a Sense of Belonging

Belonging is the feeling of being accepted by others as your authentic self and it is a crucial part of efforts to create and sustain an inclusive culture at NASA.

True belonging in any organization means people feel:

- Valued because of their lived experiences;
- Seen for their unique contributions;
- Heard when they share insights;
- Connected to their team members;
- Supported in their work and career development; and
- Proud of their organization's values and purpose

Select Components of Belonging

First Impressions

When people enter a new situation, they should be actively greeted with words and actions that both acknowledge them and engage them fully, authentically, and in meaningful ways.

Being Seen and Heard

Take the time necessary to get to know people for who they are. Pay attention to their stories, questions, ideas and ways of expressing themselves. Everyone is of value. Diverse experiences matter.

Focus on Well-being

Organizations and teams should hold themselves accountable by tracking well-being measures in belonging, thriving and flourishing.

Sense of Agency

Feeling able to control your individ ual trajectory and create change in your personal life or professional environment is deeply connected to one's sense of self and relationship with others.

Being Affirmed

People from diverse backgrounds have their identities affirmed when they are included in planning and decision-making processes and when they feel safe, secure, and supported showing up as their whole selves in any setting.

Click here to learn more about how these components support the needs of college students and young people from diverse backgrounds.

MUREP DEAP

MUREP

The Minority University Research and Education Project provides financial assistance via competitive awards to Minority Serving Institutions (MSIs), including Historically Black Colleges and Universities.

DEAP

NASA awarded $11.7 million to eight HBCUs through the new Data Science Equity, Access, and Priority in Research and Education (DEAP) opportunity. These awards support efforts by HBCU students and faculty to conduct data science research that will contribute to the NASA's missions.

The awarded projects have up to three years to establish institutes and partnerships to:

- Increase the number and research capacity of STEM students at HBCUs,
- Accelerate innovation in a wide range of NASA science, technology, engineering, and mathematical research areas, and
- Prepare the future workforce for data-intensive space-based Earth sciences

MUREP DEAP Collaborating Institutions

The project will establish a DEAP Institute focusing on machine learning-based development of a virtual constellation of satellites that capture changing water levels, from events such as storm flooding to multi-decadal time scales.

This project will rely on artificial intelligence and machine learning to better understand the science of concentrated salt solutions and the formation of ring-like deposits called evaporites to identify where water may have existed.

The project will build on existing capacity and collaboration with NASA's Jet Propulsion Laboratory to engage students and faculty in using data science to address scientific questions to manage NASA's Earth mission research.

This project aims to utilize existing state-of-the-art ML methods to develop new data analytic approaches to solve some of the core problems in Earth science research.

[Click here](#) to learn more about these institutions.

MUREP DEAP Collaborating Institutions

Through innovative data analysis algorithms, including ML/AI methods, this project will produce a high-resolution, open-access, and user-friendly urban aerosol database focusing on the Baltimore-Washington area.

This project will create training, data resources, and opportunities to use machine learning/artificial intelligence to identify and measure the impact of flood events and other natural hazards such as earthquakes, hurricanes, and more.

Three North Carolina-based HBCUs will work together on this project developed to harness data science for flood monitoring and management.

This project aims to build an AI-based system that can share interactive, instantaneous, and user-relevant Earth science information, making NASA science more discoverable and accessible to a broad audience.

Click here to learn more about these institutions.

OSTP Sub-working Group Year of Open Science (SYOS) Goals

Goal 1: Establish strategic approaches

Goal 2: Engage underrepresented communities in open science and research

Goal 3: Account for open science activities in reviews, recognition, and incentives

Goal 4: Increase openness and transparency in review processes

Year of Open Science Tentative Plan

Goal 2: Engage underrepresented communities in open science and research

Goals	Sub-task/activity	Performance Measures	Performance Target	Deliverable(s)
Study barriers and biases in NASA science engagement with underserved communities in science	OSSI Activity #1 Host series of listening sessions to better understand barriers of entry for underserved communities into NASA science proposals, internships, and activities	Comments from participants	Engage at least 20 MSIs with dedicated departments in STEM in roundtable discussions	Develop NASA OSSI Equity Toolkit, an online resource to support an increased access to training, technical assistance, and communication needs identified by underserved groups Develop white paper to recommend guidance on best practices to inform engagement with underserved communities

DRAFT - For Discussion Only

Goal 2: Engage underrepresented communities in open science and research

Goals	Sub-task/activity	Performance Measures	Performance Target	Deliverable(s)
Develop co-led initiatives with existing NASA organizations with aligned missions in engaging underserved groups	Partner with NASA OSTEM to fund PBI/HBCU institutions enabling the establishment of data science institutions for data-intensive research in science and engineering among underrepresented groups	Support the continued development of data-intensive research programs at PBIs/HBCUs over the course of 3 years Participate in site visits	Develop program and fund mentors across PBI/HBCUs to support developing the capacity and relationships with minority serving institutions	Host at least 8 open Science 101 curriculum workshops at each university
	OSSI Activity #2 Partner with NASA's Space Apps Team for Year of Open Science Global Hackathon	Number of participants who earn NASA open science badge	300 participants earn NASA open science badge	Article that discusses SpaceApps and open science

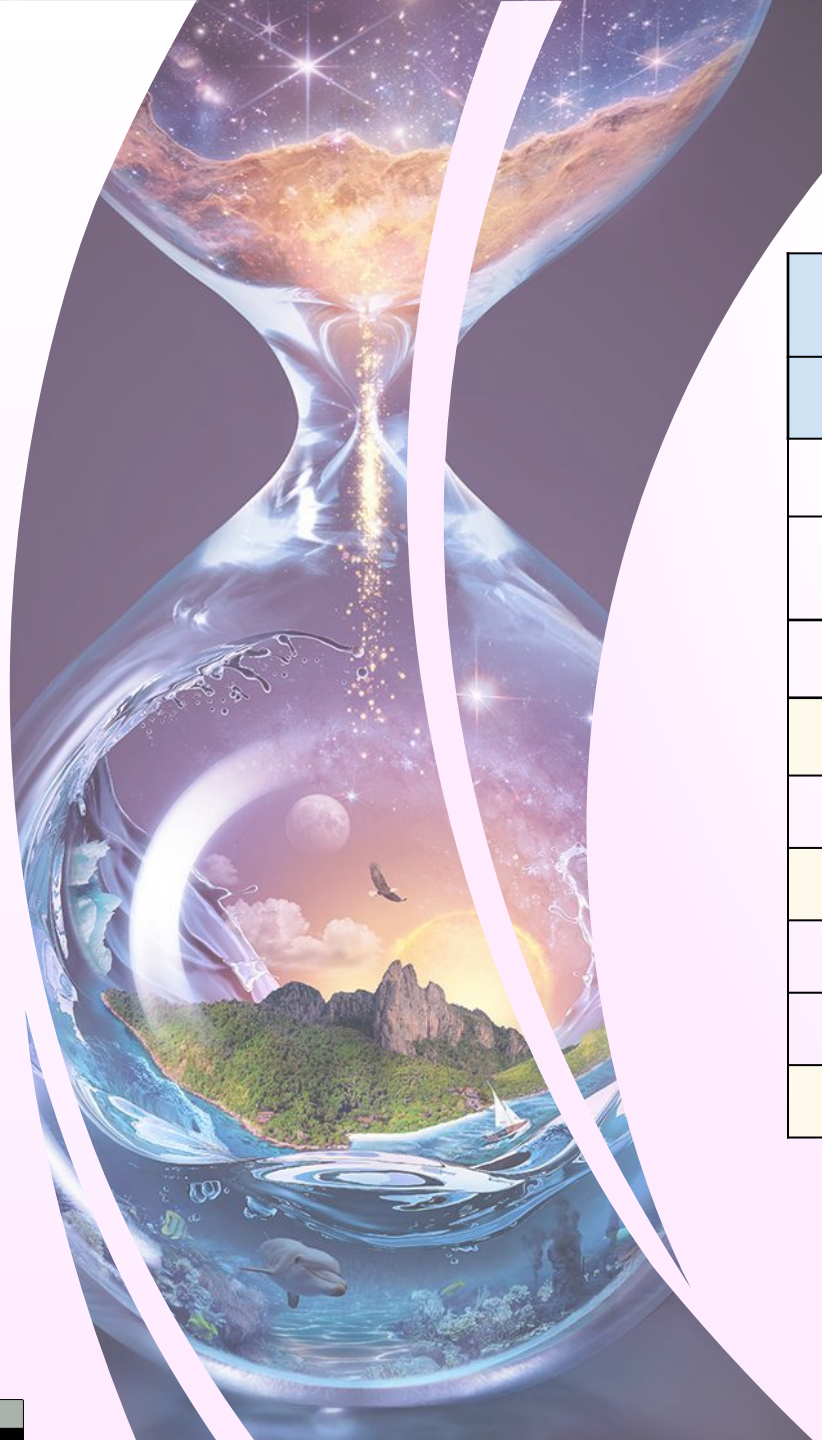
Goal 2: Engage underrepresented communities in open science and research

Goals	Sub-task/activity	Performance Measures	Performance Target	Deliverable(s)
Establish and co-develop initiatives with external organizations with missions aligned to broaden participation in science by underserved communities	Workshop targeted at minority serving institutions to increase access to proposal resources and materials	Selection rate of proposals by underserved groups in ROSES	Increase selection rate to level of non-underserved groups	Workshop report on review best practices and responding to reviewer comments
	OSSI Activity #3 Host series of virtual roundtables with early career researchers (ECRs) from diverse backgrounds to discuss their needs, priorities, and roles in advancing a sustainable open science enterprise that can deliver on equitable outcomes.	Collaborate with Office of Science and Technology Policy to coordinate a OSTP/NASA event with roundtables focused on underserved communities and open science.	Advance our understanding of strategic approaches to grow and sustain an equitable open science enterprise for underserved ECR	Develop summary report on actionable steps to better support ECR and/or underserved communities

DRAFT - For Discussion Only

Goal 2: Engage underrepresented communities in open science and research

Goals	Sub-task/activity	Performance Measures	Performance Target	Deliverable(s)
Establish and co-develop initiatives with external organizations with missions aligned to broaden participation in science by underserved communities	OSSI Activity #4 Participate in Grace Hopper Day to support the continued development of women in open source tools and technologies communities	Collaborate with HBCU to host community panel in June 2023	Coordinate amongst science, computer, and engineering departments at university to nominate students to attend panel and engage with NASA open science experts	Workshop summary report on outreach outcomes
		Collaborate with a tribal college/university to host community panel in October 2023	Coordinate amongst science, computer, and engineering departments at university to nominate students to attend panel and engage with NASA open science experts	Workshop summary report on outreach outcomes
		Intentional engagement with the open science community to broaden participation in the use and access to open source tools and technologies	Train at least 30 participants in the Ethos of Open Science module	Workshop summary report on outreach outcomes



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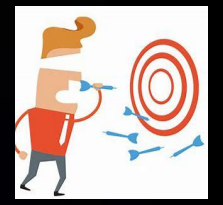
SWOT Analysis Activity

Holly Norton
Transform to Open Science
TOPS Content Coordinator

Introduction

Things to consider

What works



What doesn't work

Potential obstacles

Potential opportunities

External factors that help

External factors that could pose challenges

Day 1

Wednesday June 14th, 2023 *TOPS Update and Creating the Curriculum*
TOPS Update
Year of Open Science
Open Science 101 Module Content Development
Open Science 101 MOOC Development

Strengths
Weaknesses
Opportunities
Threats

What works

What doesn't work

Potential obstacles

Potential opportunities

External factors that help

External factors that could pose challenges

Day 2

Thursday June 15th, 2023 *Training 20k Scientists*
Honoraria Q&A
TOPST Update
Open Science 101 Certification
Open Science 101 Instructor training
Open Science 101 Implementation
Community Forum (Public)
Scaling the curriculum to 20K

Strengths
Weaknesses
Opportunities
Threats

What works

What doesn't work

Potential obstacles

Potential opportunities

External factors that help

External factors that could pose challenges

Day 3

Friday June 16th, 2023 *Doubling Participation*
Curriculum Engagement and Retention Strategy
2024 Engagement Strategy
HQ DEIA Engagement Strategy

Strengths
Weaknesses
Opportunities
Threats

What works

What doesn't work

Potential obstacles

Potential opportunities

External factors that help

External factors that could pose challenges

What's next?

- The TOPS Community Panel Summary report is due **July 15, 2023**.
- We will follow up with a link to the shared gdoc for your review within the coming week.
- The Panel Summary does not require consensus, and we hope you are able to work together to create constructive guidance.
- The slack channel can be used to work together and if meetings are needed, we are happy to help coordinate them. We will bookmark the Panel Summary Report to the slack channel.
- Please email chelle.gentemann@nasa.gov or slack her once the Panel Summary is complete.
- **It is important that you meet the 7/15 deadline.** This will help inform decisions on future TOPS activities.
- We will upload the panel summary report to Zenodo and post to GitHub as part of the record of this meeting.
- If you have any questions or are unable to participate please reach out to me at holly.e.norton@nasa.gov. If I don't have an answer, I'll direct the question(s) to the correct people.

Open Discussion

Holly Norton
Transform to Open Science
TOPS Content Coordinator

Progress

- ✓ TOPS Recruitment and Outreach
- ✓ 2024 Engagement Strategy
- ✓ HQ DEIA Engagement Strategy
- ✓ SWOT Analysis Activity

Open Discussion: Potential

Feedback on the recruitment, engagement, or SWOT analysis? Feedback from the panel overall?

You can use the QR code to access the feedback tool

Closing Remarks

Chelle Gentemann
Transform to Open Science
TOPS Science Lead

National Aeronautics and Space Administration

TOPS

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