

# #BlackinNature



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Acknowledgements to the powerful Black women and men in my family who told stories and celebrated early African American voices in the struggle for identity that are now captured in the National Museum of African American History and Culture



# Black Female Ecologist and Diversifying bioscience



# Black kid from Brooklyn New York

## Ranger Rick's NATURE CLUB

RANGER  
GILLIAN BOWSER  
71 JORALEMON ST  
BROOKLYN N Y. 11201

IS A MEMBER OF RANGER RICK'S NATURE CLUB, LEARNING  
ABOUT NATURE AND ITS IMPORTANCE TO PEOPLE.

EXPIRATION DATE

MEMBERSHIP NUMBER

MARCH 1971

RR533092

*Ranger Rick*

**National Wildlife Federation**

# Black from Brooklyn

- National Park Service Ecologist for over 20 years in 8 different parks...
- Studied organisms from Bison to Butterflies with Desert Tortoises somewhere in the middle...
- Transferred to a Federal biologist position at Texas A&M University...
- Took a wacky sidestep as an Assistant Dean for a hot second (bad idea) and now an Associate Professor and researcher at Colorado State University (joint appointment with Ethnic Studies).



# Black Brooklyn Biologist??

- Started out in the arts and medical illustration...
- Was way too fond of drawing dragons...
- Ended up on a greyhound bus 72 hours from Port Authority in New York to Livingston Montana...
- Left Montana ten years later to go to graduate school...
- Love driving big trucks around so I can take out yellow taxis every time I am back home in New York



# So what is my identity?

Black Biologist  
from Brooklyn  
who grew up  
biking the  
Brooklyn Bridge  
and birding



# What is my science identity?

## Two research areas in the ecological sciences





# Pollinators and citizen science



# Black Biologist Bugger and Butterflier with Backpack, Binoculars and Bear spray from Brooklyn or BB6!



backpack

butterflier

black

Brooklyn (shirt says  
Coney island  
Cyclone)

carabiner from  
my dad for  
good luck!

binoculars

Bear spray

# Black in STEM and Black identity

*“Creating my identity in science means intersectionality as I cannot separate out different parts of my multiple identities...”*



# BB6 and Diversity in the biosciences

Why does  
identity  
matter?



# Who is underrepresented and what are the numbers?

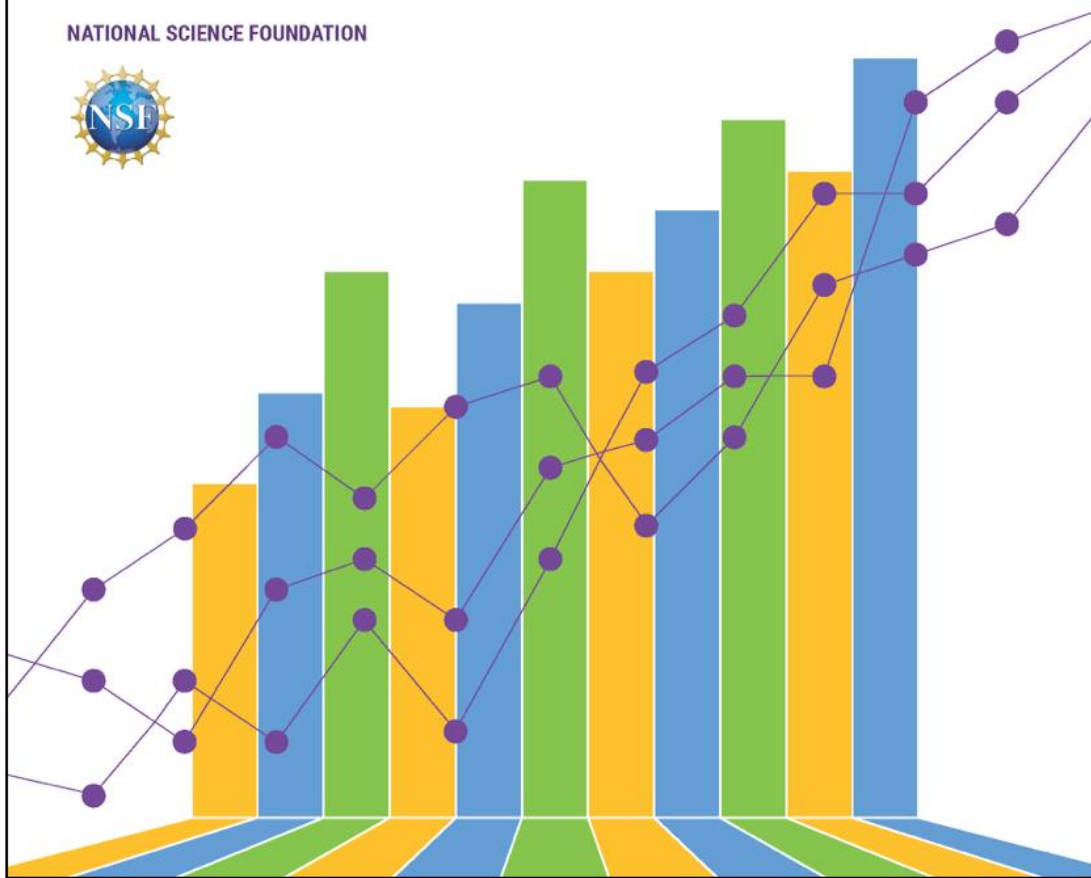
- Underrepresented minorities in the sciences are U.S. Citizens who identify as African American, Hispanic, Latinx, Native American, Native Hawaiian and Pacific Islanders.
- Asian Americans including ethnic heritages from China, Japan, India and associated countries (Thailand, etc.) are not considered URM in science.
- NSF and AAAS tracks persons with disabilities but they do not track sexual orientation.

# The report

## 2019 | WOMEN, MINORITIES, AND PERSONS WITH DISABILITIES IN SCIENCE AND ENGINEERING

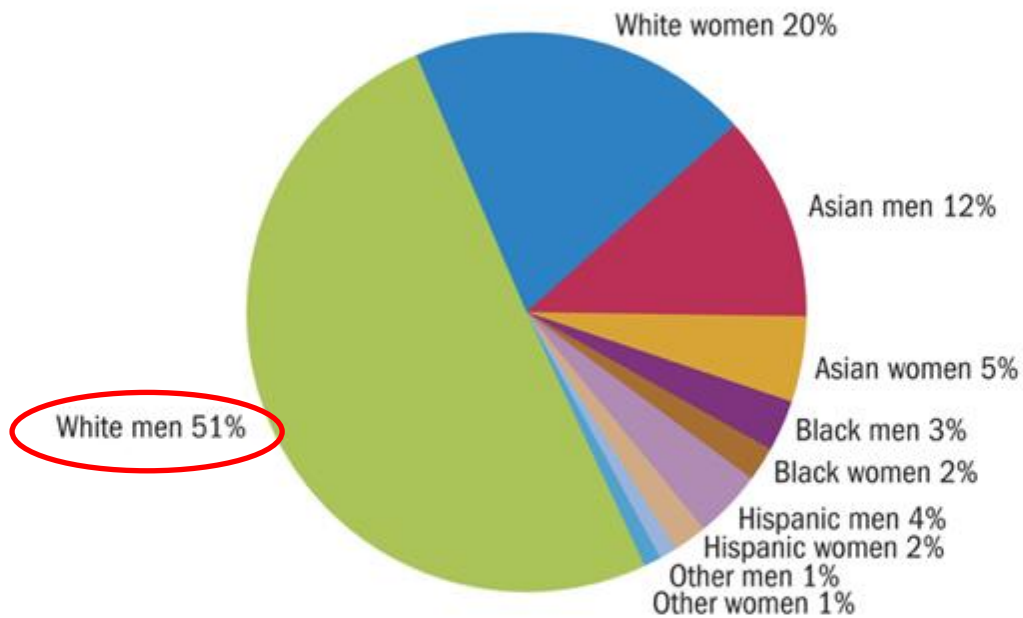
NATIONAL CENTER FOR SCIENCE AND ENGINEERING STATISTICS  
DIRECTORATE FOR SOCIAL, BEHAVIORAL AND ECONOMIC SCIENCES

NATIONAL SCIENCE FOUNDATION



2013

## Scientists and engineers working in science and engineering occupations: 2013



NOTE: Hispanic may be any race. Other includes American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and multiple race.

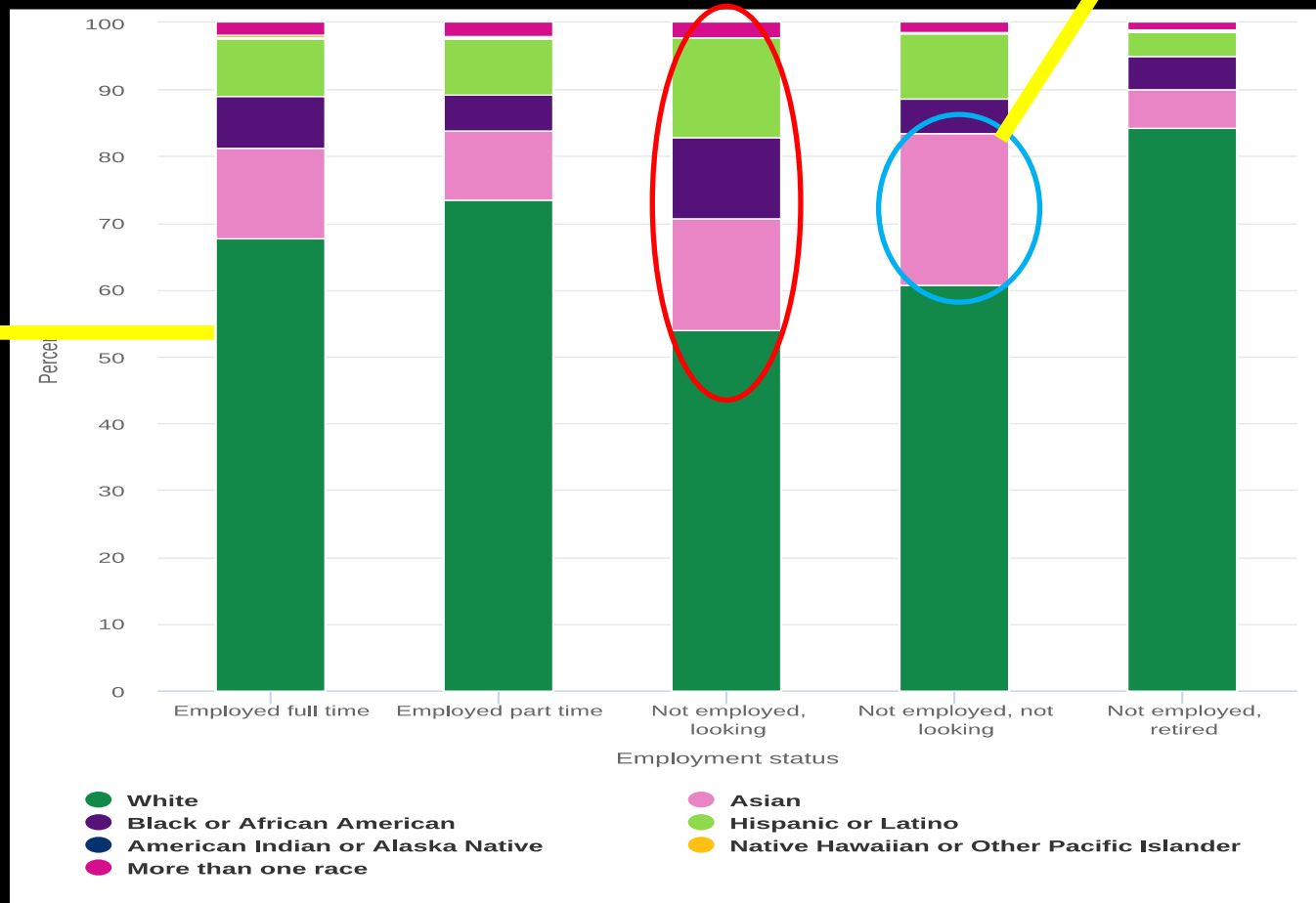


# Employment status of scientists and engineers, by ethnicity and race: 2017

National Center for Science and Engineering Statistics | NSF 19-304

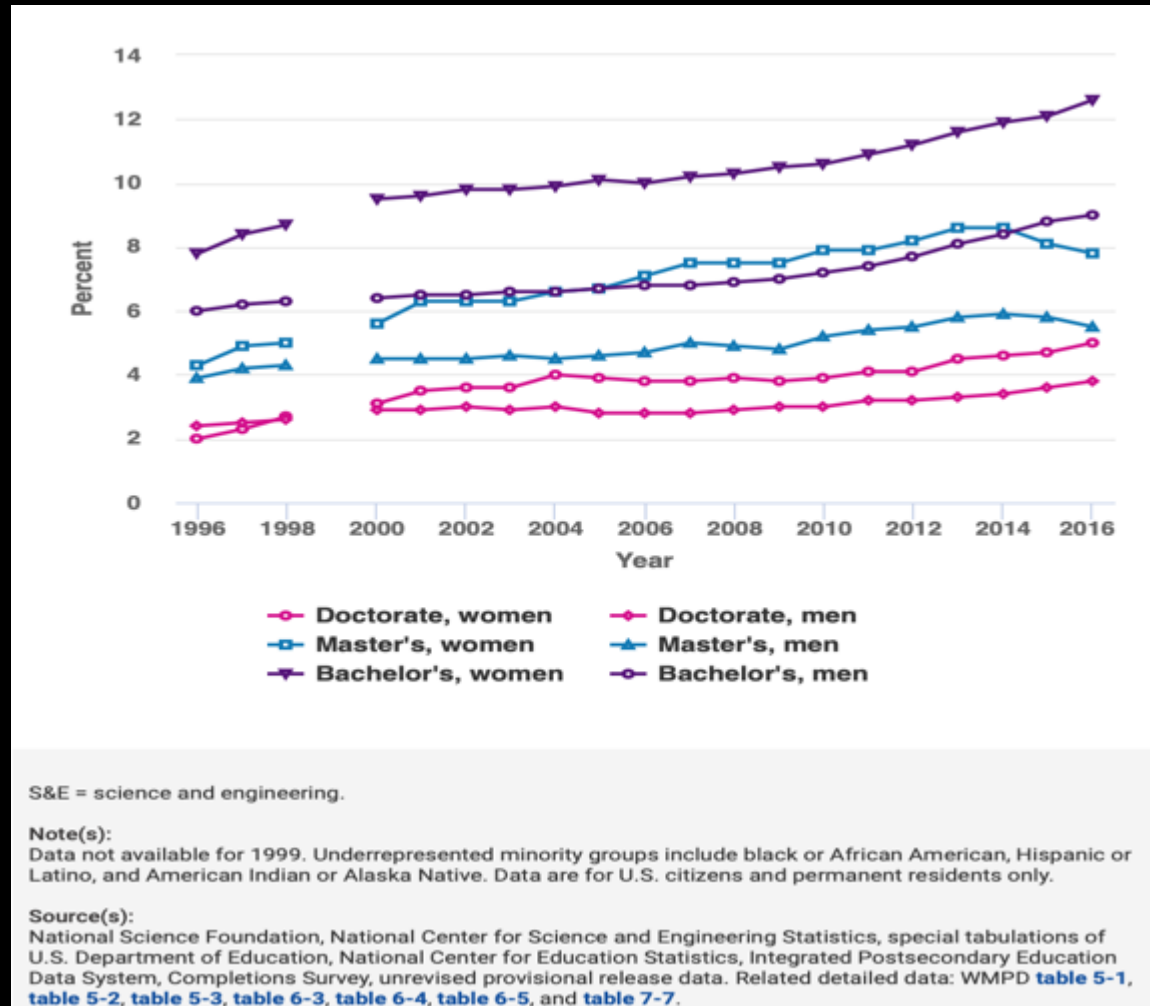
Why are African Americans NOT looking?  
Discouraged?

The number of white women dramatically increased from 2013-2017 from 20% to 40%!

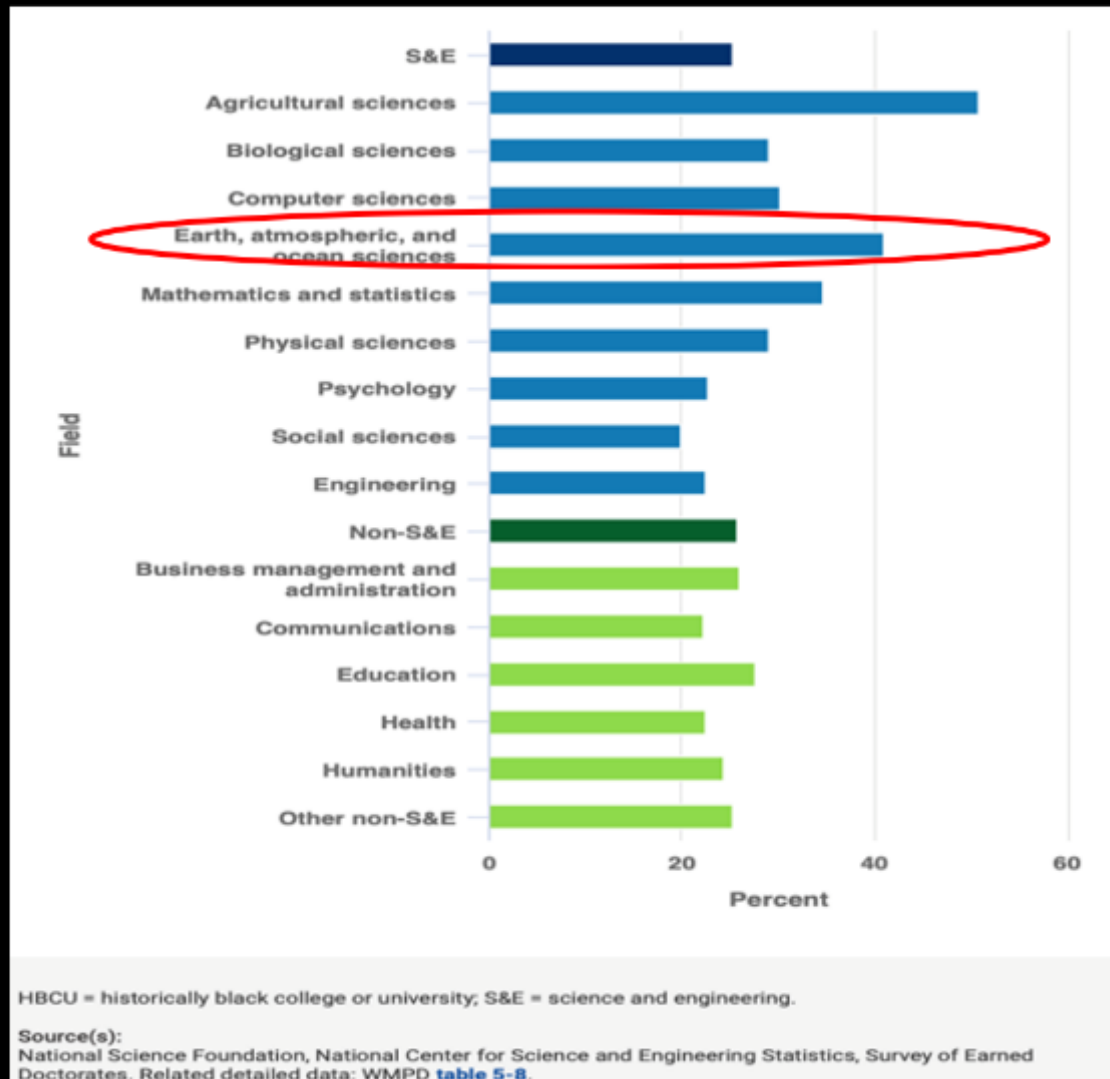




# Science and engineering degrees earned by underrepresented minority women and men, as a percentage of all S&E degrees awarded of each degree, by degree type: 1996–2016



# Black or African American doctorate recipients with HBCU baccalaureate origins, by field: 2013–17



# TOTAL numbers

- Agriculture (livestock, rangeland, crop, etc.) and Natural Resources (including wildlife, conservation biology, ecology, etc.) in 2018 graduated 763 doctorate degrees Nation wide --45 were black.
- Geosciences and atmospheric sciences graduated 760 doctorate degrees-- 11 were black.
- Tashiana Osborne from Scripps Institute will graduate in 2021 one of fewer than 5 black female atmospheric scientist



# The double bind for women of color

- The overall numbers of women of color are so low that neither NSF nor AAAS can significantly analysis the individual minority groups within the natural resource sciences (Earth sciences) much less within one discipline like Ecology.
- The numbers of women of color earning bachelor degrees in S&E fields is declining or flat in all science fields except psychology and social sciences.
- In the last three years, the Warner College of Natural resources graduated 700 undergraduate students (about 200 per year for all departments and programs), 5 were Black and 11 Hispanic.



# What does a black ecologist look like?

A diverse ecologist is one whose voice may have been lost at the professional level (imposter syndrome) or superimposed with other identities that negates the individual.—my identities cannot be parsed out!

Reclaiming voices is another that promotes an understanding of the intersectionality of diversity, culture and ability that is needed to seed a cultural shift in traditional academic perspectives.



# What is VOICE in bioscience?

...awakening a greater awareness of cultural knowledge and best practices in diversity, equity and inclusion related to a sense of *Identity* as a scientist, *Belonging* within the discipline in conjunction with acknowledgements of the cultural connections to *Places*, and importance of a sense of *Security* as an underrepresented group in field and classroom settings.

# A Brief intervention

Lack of performance or persistence in environmental sciences by BIPOC as been attributed to the following:

1. Black people don't go outside
2. Hispanic people don't like the cold.
3. BIPOC aren't exposed to enough nature.

**HOWEVER...**

Brief interventions, not on the science but on the “self” can change that performance significantly.



# VOICES

## VOICES

Two-year NSF EAGER project exploring the importance of voice in engaging BIPOC scholars in the Earth Sciences Collaborative partnership:

### Earth Science Team

1. Dr. Wendy Smythe, University of Minnesota Duluth
2. Dr. Gillian Bowser, Colorado State University
3. Dr. Lisa White, University of California Berkeley
4. Dr. Chris Atkinson, University of Cincinnati

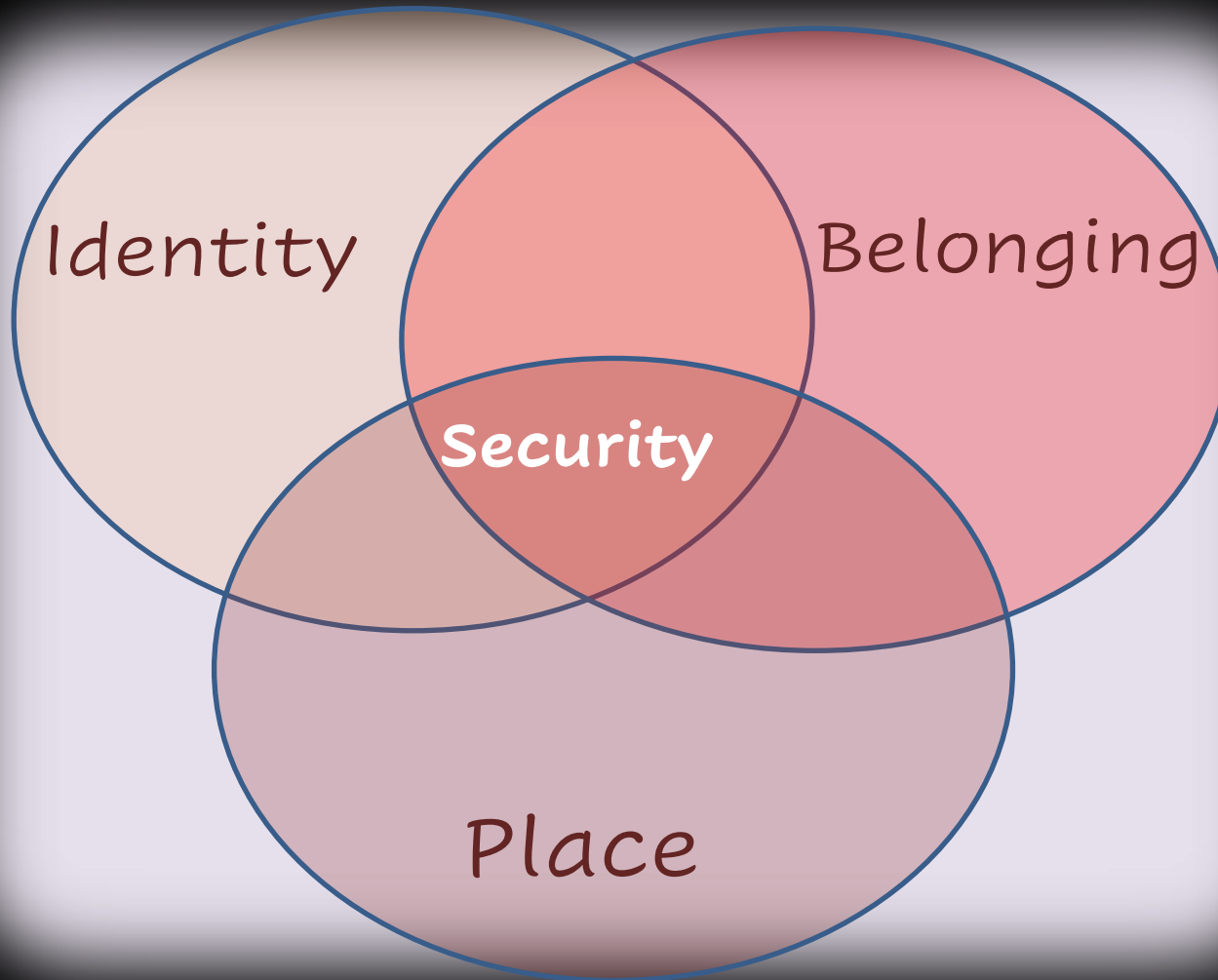
### Social Science Team

5. Dr. Nina Roberts San Francisco State University
6. Dr. Rick Harvey, San Francisco State University





# VOICES Integrates Culture in the Earth Sciences as an intervention focused on self-identity.



# Belonging

*Belonging* as a scientist and respected member of a group brings relief from the “impostor syndrome” and is tied with *Identity* as measures of persistence in a discipline or academic field (Smythe et al. 2020). Belonging can be characterized by individual declarations of being a member of a group, discipline or project; while lack of belonging is often situational and captured by concepts of “otherness” or disconnection from a core group



# Place

The importance of understanding sense of place is reflected not only in the ownership of land and water resources but to the spiritual, historical and cultural connections with a place.

Landscapes have culture and that connection to culture and resident people can be elucidated by understanding the importance of *Place* and Traditional Knowledge that is co-created with distinct protocols, histories, languages and community practice.



# Security

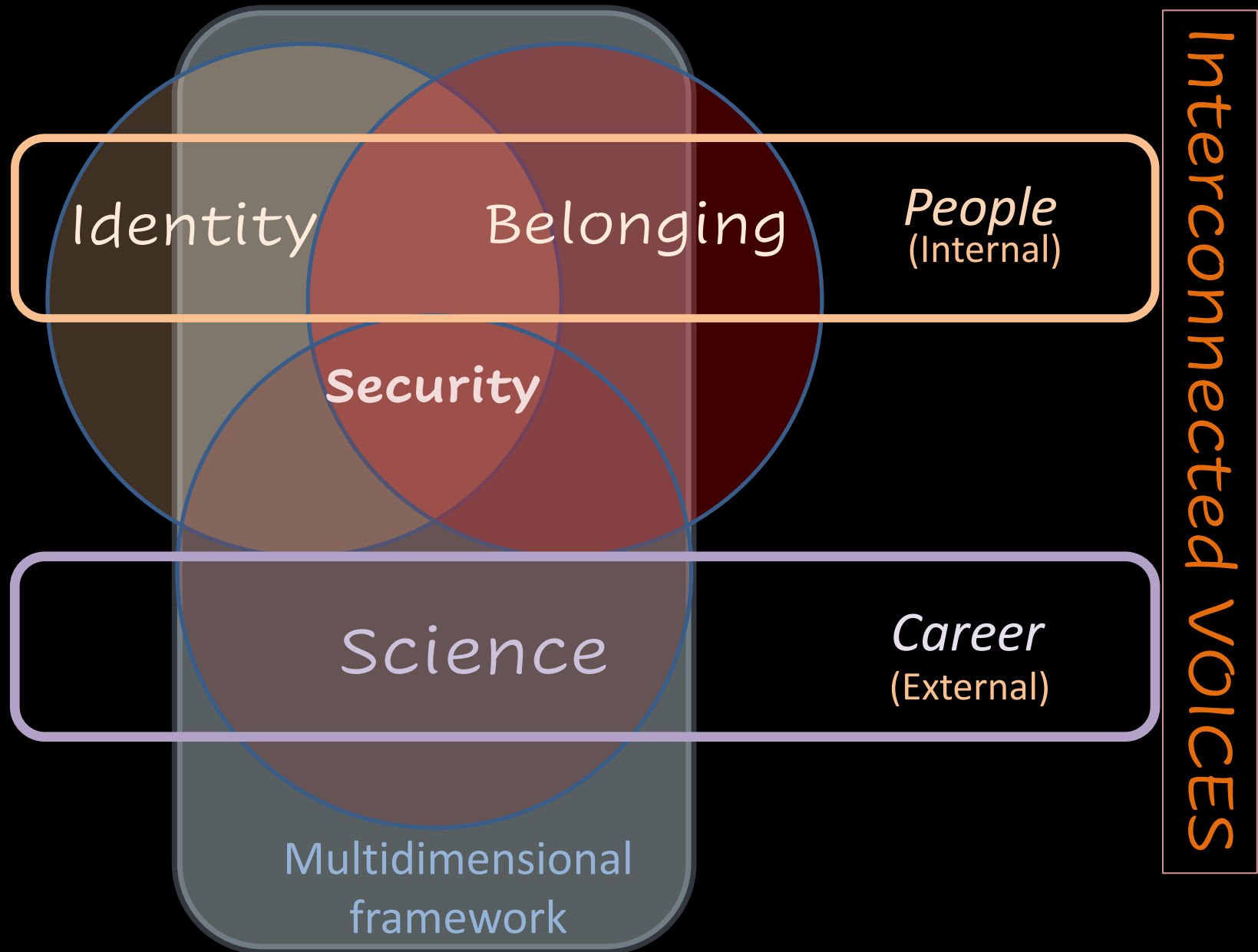
*Security* is a separate voice that is influenced by the different voices of *Identity*, *Belonging* and *Place* and is a critical foundation to create significant change in the Earth science experiences for URS.

*Security* is synonymous with safety in some situations; mostly, these terms can have different meanings when viewed through the lens of culture, gender, race, sexual orientation and disability.

*Security* issues for race and ethnic minorities can also be situational especially during field experiences in different regions of the country or in situations where encountering the privilege and power of a dominant demographic can have detrimental and sometimes violent outcomes.



Framework showing the multiple dimensions of the key elements of VOICES that can lead to engagement in the sciences by focusing on social capital and well being.



# VOICES: integrating culture and belonging into science

**Table 1. Identity and Belonging are focused on individual ‘internal’ voices. Place and Security are situational with demographic or regional ‘external’ voices.**

	Objectives	Examples	Outcomes
Identity	Measure characteristics of identity in earth sciences.	How different cultural and ethnic groups identify as a scientist? What topics?	Create a typology of Identity that includes cultural singularity and does not parse identities. “I am a black female ecologist.”
	Identify qualities of Belonging in URS.	What are some of the individual pathways that drive URS Belonging in field sciences in particular.	Change the language of isolation. Earth scientists work in collaborations and peer teams. Make peer teams accessible across institutions. Create networks of URS.
Belonging	Build a framework based on both Belonging and Identity.	Examine intersections of Identity and Belonging for different demographic groups.	Create tools to incorporate Belonging into classroom and field experiences. Collaborate so students and faculty have a peer group to belong with that includes other URS.
	Build a multidimensional framework incorporating cultural connections to Place.	Where field research takes place matters. People connect to ecological in different types of landscapes	Connect place with culture. Field research is attractive to different URS when connected with culture, history or other externalities (Yosemite and the buffalo soldiers)
Place	Understand the concept of otherness.	Issues of security are place based for many different cultures. The dominant culture can be an issue of security in different settings	Field research needs to intersect with physical and cultural safety. Its more than the wild animals!
	Identify Security, safety and accommodation concerns for URS.	Security needs to be expressed by individuals	Listening with authentic voices and expressing with personal voices is probably the most difficult outcome for STEM disciplines to achieve!!
Security			

# How to increase diversity in the Biosciences?

**Focus on the voice not on the numbers.**

**Celebrate being allies—the pathways for difference racial and ethnic groups is not the same.**

**White women are no longer underrepresented in the earth sciences with the exceptions of atmospheric sciences and geoscience. Celebrate!**

**Intersections of identities are important and are not the same—celebrate that diversity as well!**



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National Park Service leadership team under Director Bob Stanton



Diverse Environmental Leaders group



# Thank You and Questions



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