

URGE

Unlearning Racism in Geoscience



EARTH SCIENTISTS
NEAR HANGAR ONE

WE'RE ACTUALLY
REALLY COOL

URGE Demographic Data for NASA ARC

This is what was found by Hangar-One Earth Scientists on demographic data (public and internal facing) for NASA Ames Research Center as well as stated goals for representation, and/or proposals to collect and report demographic data. Dated 19 March 2021.

The link(s) to demographic data at our organization are here:

- [NASA-wide demographic info](https://www.nasa.gov/offices/odeo/workforce-data) - <https://www.nasa.gov/offices/odeo/workforce-data>
- [Ames-specific demographic info](https://eo.arc.nasa.gov/resources.html) - <https://eo.arc.nasa.gov/resources.html>
- [Ames-specific contractor info](#) - was obtained upon request from BAERI
- No invited-speaker demographics, recruitment demographics, retention demographics, or award demographics were able to be found by this pod.

How does your organization compare to others, or to the field as a whole?

- According to the reports above: "NASA employs nearly 17,000 people with diverse backgrounds. Seventy-two percent of NASA employees are White or Caucasian, 12 percent are Black or African American, 7 percent are Asian American or Pacific Islander, 8 percent or Hispanic or Latino; 1 percent are American Indian or Alaska Native, and less than 1 percent are more than one race."
- However, we find a different picture when looking at just science tracks, for both Ames and NASA (we consider Ames Science directorate Code S and all employees at all centers. Note that **Figures 1, 3, and 5** include only civil service, and not contractors which have a variety of different employers). **Figures 2 and 4** show demographics for the Bay Area Environmental Research Institute (BAERI), a common employer for the earth science contractors at Ames (NB: not all Earth Scientists are employed by either BAERI or civil service, and BAERI has some non-earth-scientist employees as well).
- Ames is overwhelmingly white, male, and old. Also, we could only find age data broken down by >40, <40 years old, (Code SG is reported as 85.7% >40 years old) which makes it difficult to infer past and future trends (including hiring rates overall). Further, the data are presented in aggregate, one parameter at a time, which makes it difficult to ascertain potential intersectional issues (e.g. between race + age + gender identity + disability, or occupation category, i.e. science versus administration).

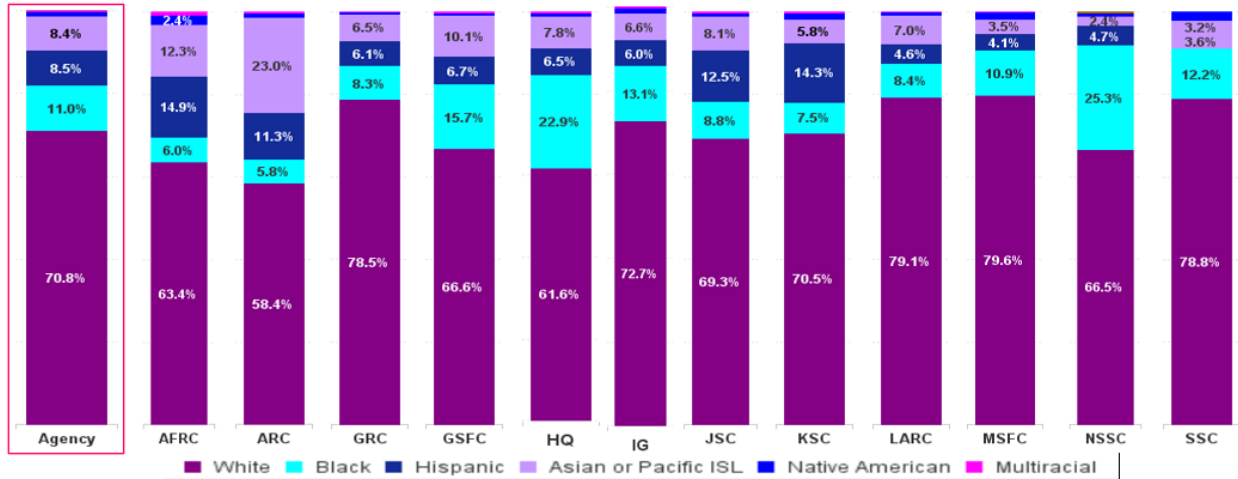


Figure 1 Employment by race at all centers, as visualized in the Ames 2020 EO report.

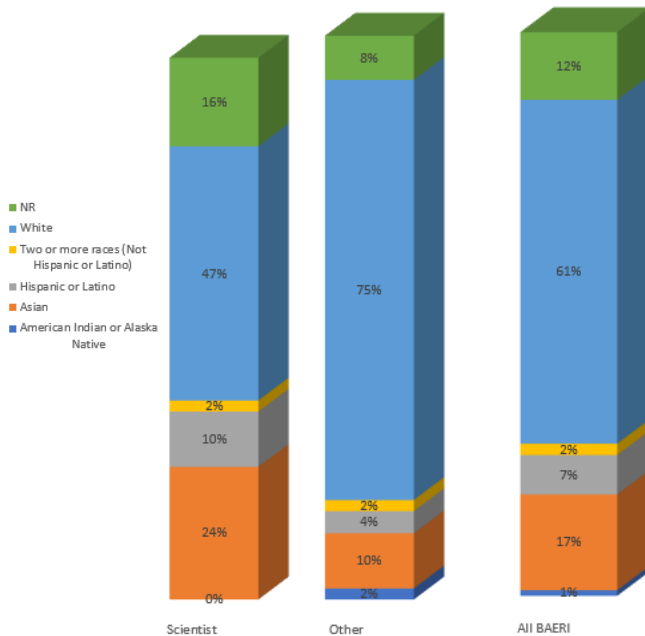


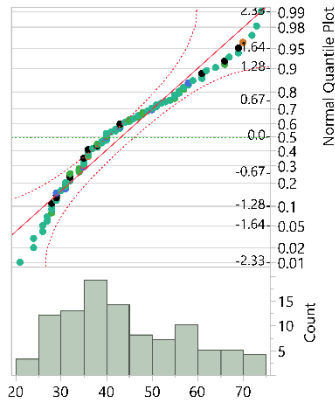
Figure 3 Employment by self-reported race/ethnicity at BAERI for employees classified as “scientists” (n=49), other roles (including engineers; n=51), and summed. NR= not reported. We ask the reader to forgive the change in color scheme and tiny fonts; our PhDs did not teach us Excel plotting skills (or Word figs, for that matter).



Figure 2 Employment by race in the Science Directorate (Code S) at Ames, 2020. Note that Code S* employees are only ~88% “science and engineering”. SG= Earth Science (n=35). Other divisions are: S (Science Directorate): n=8; SC (Space Biosciences): n=45; SS (Space Science and Astrobiology): n=67.

Distributions

Age



Summary Statistics

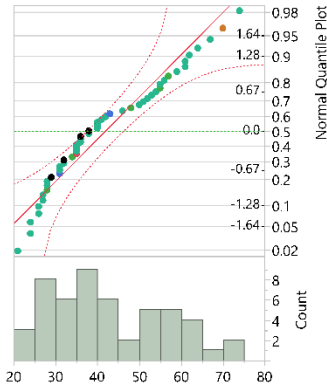
Mean	43.27
Std Dev	13.193858
Std Err Mean	1.3193858
Upper 95% Mean	45.887948
Lower 95% Mean	40.652052
N	100

Column 8

- American Indian or Alaska Native
- Asian
- Hispanic or Latino
- Two or more races (Not Hispanic or Latino)
- White

Distributions Scientist / non=Non

Age



Summary Statistics

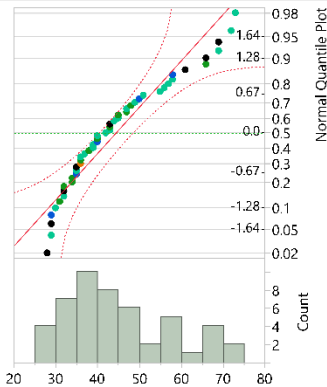
Mean	42.039216
Std Dev	13.736027
Std Err Mean	1.9234285
Upper 95% Mean	45.902535
Lower 95% Mean	38.175896
N	51

Column 8

- American Indian or Alaska Native
- Asian
- Hispanic or Latino
- Two or more races (Not Hispanic or Latino)
- White

Distributions Scientist / non=Scientist

Age



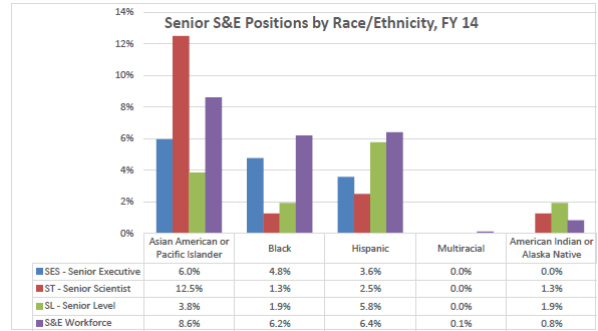
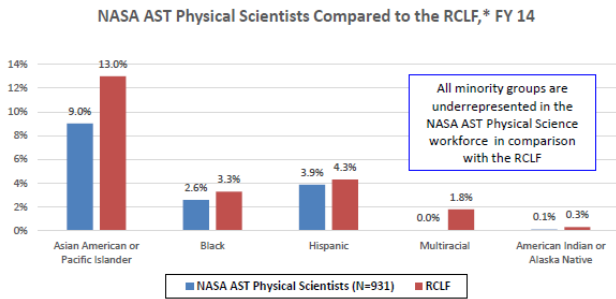
Summary Statistics

Mean	44.55102
Std Dev	12.61788
Std Err Mean	1.8025542
Upper 95% Mean	48.175299
Lower 95% Mean	40.926742
N	49

Column 8

- Asian
- Hispanic or Latino
- Two or more races (Not Hispanic or Latino)
- White

Figure 4 Ames employees, all (top), not-scientist roles (middle), and scientist job descriptions (bottom) for BAERI, by age and colored according to self-identified race/ethnicity.



Minority employees in the AST workforce are generally underrepresented in senior positions, in comparison to their overall AST representation.

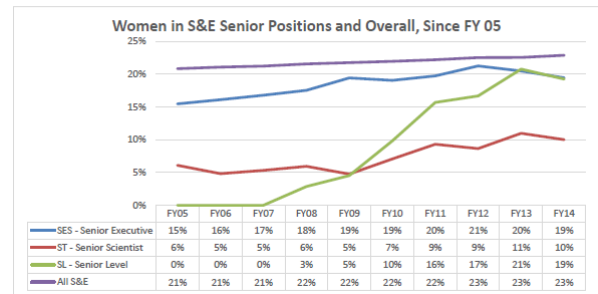
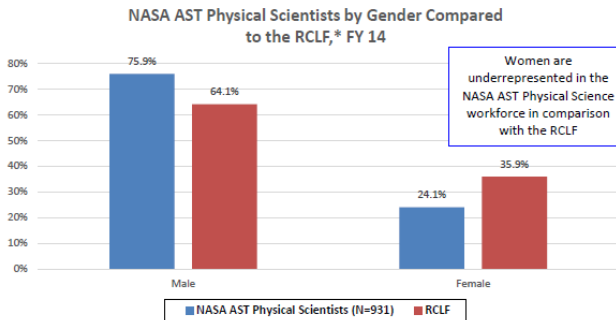


Figure 5 (left) Physical scientists by race and gender compared to the "Relevant Civilian Labor Force" (Physical scientists, physicists, and space scientists). (right) Racial and gender representation in senior positions, relative to their total percentage in the work force. Further illustrations may be found at https://www.nasa.gov/sites/default/files/atoms/files/fy_2015_model_eeo_agency_plan_508.pdf

- The BAERI contractor population (impermanent, with continuing employment often dependent on successful proposals) is somewhat younger, with a median age just under 40 (**Figure 4**). The gender split among BAERI employees is 47-53 female vs male, and slightly lower when considering only scientist roles (~41% female). This is still higher than the Code SG gender split (37% female).
- According to the 2020 NASA ODEO report (linked above), all non-white male demographic groups (Black, Latinx, Native Americans+Native Hawaiians, Women, AAPI) plus people with disabilities, are underrepresented in Senior Executive Service and Senior Level (SL) and Senior Scientific and Professional (ST) employees. This has been consistent since the 2015 report (the oldest one available at the above link, which includes data through FY14) although figures in the 2015 report show some improvement over time (**Figure 5**).

Public goals on demographics or increasing representation:

- Are there general goals stated at your organization for achieving representation?
 - Boilerplate federal EEO language, e.g. "The United States Government does not discriminate in employment on the basis of race, color, religion, sex (including pregnancy And gender identity), national origin, political affiliation, sexual orientation, marital status, disability, genetic information, age, membership in an employee organization, retaliation, parental status, military service, or other non-merit factor." with links to Equal Employment Opportunity (EEO) office at OPM (<https://www.opm.gov/about-us/our-people-organization/support-functions/equal-employment-opportunity/>) and Office of Equal Opportunity

http://www.eeoc.gov/eeoc/internal_eeo/index.cfm

- A recent BAERI job listing included the following text: “Furthering organizational equal opportunity goals is a requirement of this position. The employee is responsible for applying equal opportunity principles in all individual, team, and work place activities.” plus similar language as the feds: “The Bay Area Environmental Research Institute is an equal opportunity employer. All qualified applicants will receive consideration for employment without regard to race, color, ancestry, national origin, religion, sex, pregnancy, sexual orientation, age, citizenship, marital status, disability, medical condition, gender identity, protected veteran status, or any other legally protected status. If you have a disability that requires accommodation, please let us know by sending a request to the Human Resources Office at resumes@baeri.org.”

- *Are there measurable goals stated at your organization for achieving representation?*
Goals are subject to change based on administration (e.g. EO 13950 vs 13985 described below). Comparing the 2015 and the 2020 ODEO reports, some points stand out:
 - **2015:** Explicitly enumerates “Six Essential Elements of a Model EEO [Equal Employment Opportunity] Agency”.
 1. Demonstrated leadership commitment.
 2. Proactive Prevention of Discriminatory Actions
 3. Integration of EEO into the Agency Strategic Mission
 4. Management and Program Accountability
 5. Efficiency of EEO Operations (?)
 6. Responsiveness and Legal Compliance
 - Only (2) above explicitly mentions outreach to underrepresented groups in science and engineering. The rest are somewhat vague and nonquantitative.
 - **2020:** the same basic “elements” above are still there, but in a difficult-to-read, thirteen-page table of “measures” to accomplish them. According this table, “measure met? y/n” is answered by “yes” for all except two (the “no”s refer to agency structure issues). This suggests that it is believed that there are no improvements which could be made to improve representation, diversity, or equal employment opportunity.
 - Also, interestingly, the 2020 order has been switched to 1,3,4,2,5,6, by which one might feasibly conclude that “proactive prevention of discrimination” is now less important to an “EEO Agency” than are leadership, management, and the strategic mission.

- Suggested additional goals for your organization:
 - **Goal 1:** Collect and report on intersectional demographics rather than having everything binned by individual identity, e.g. white vs BIPOC women, or LGBT with/without disability, to better assess how the intersectionality of different identities is affecting outcomes.
 - **Goal 2:** Collect and report data on contractors as well as civil servants to have an actual accurate picture of the full workforce at ARC.
 - **Goal 3:** In addition to the annual employment data, collect data on all stages from on recruitment, hiring, and retention, over time, to assess which stages are the

primary concern. Then actually use this to e.g. target recruitment, or focus more energy to foster an environment with higher retention of those hired.

- **Supplemental Goal:** These data should be more easily accessible/visualizable/searchable, and more widely disseminated than they currently seem to be, based on the experiences of this pod in trying to track down these data.

Policy or proposed policy for collecting demographic data at your organization:

- **How data are collected, reported, tracked, and utilized in decision making:** Reports at <https://www.nasa.gov/offices/odeo/workforce-data>

“The Data and Analytics unit measures everything D&I: from the participation of various groups in the NASA workforce to how NASA employees feel about diversity and inclusion programs, policies, and practices at NASA. NASA workforce data are published annually in the NASA Model Equal Employment Opportunity Agency Plan and Accomplishment Report. This report is required by the Equal Employment Opportunity Commission’s Management Directive 715 (MD 715), as well as other Federally mandated reports.”
- A [recent Executive Order](#) from 20 January 2021 directed federal agencies to advance racial equity and support for underserved communities.
 - Specifically (Section 5), the head of each agency was directed to “conduct an equity assessment” on potential barriers to underserved communities and individuals within 200 days (i.e., by 8 August 2021).
 - On 11 March 2021, NASA employees were informed of this 20 January EO, which in addition to the above, also rescinded a previous EO which had “placed restrictions on diversity and inclusion efforts taken by federal agencies, contractors, and grant recipients.”

What did you learn about other organizations (or in general) while investigating demographic data?

- The “workforce as a whole” for NASA is demographically different than the scientists and engineers at NASA. There are more BIPOC in non-science roles than in science roles.
- Demographics, especially by race, vary center to center. Ames is a bit of an anomaly having a larger number of Asian employees than NASA as a whole, though this is not necessarily true for science roles. According to the US Census’s 2019 [demographics of California](#), the state’s population is ~15% Asian; the numbers we found ranged from 1.6% to 29% depending on the subset considered.
- The Ames workforce has a proportion of Black people which is roughly the same as the state (~5.6% of CA’s population, 5.8% at ARC), but based on the data we were able to obtain, there are very very few of them are in science roles (3% in Astrobiology, but 0% in Earth Sciences at Ames, and 0% of BAERI).
- However, by that metric, Latinx people (~39% of CA’s population in the above) are the most underrepresented in the workforce as a whole (7-11%), and in S&E (3-10%).
- Native Americans are also certainly underrepresented as well (1-2% overall); the exact degree is difficult to say as some documents use “American Indian and Alaska Native”, some use “Asian American and Pacific Islander (AAPI)”, some use “Native Hawaiian and Other Pacific Islander”, and some group “Native Americans+Native Hawaiians.”