URGE Session 3 Deliverable
Departmental Demographics
MIT Department of Earth, Atmospheric and Planetary Sciences

This deliverable is locating, requesting, and/or analyzing demographic data (race, ethnicity, gender, etc) for admissions, hiring, invited speakers, and relevant roles within your organization (URGE Deliverable Reference).

This document includes an audit of existing demographic resources for EAPS that are both public and private facing. This data, along with knowledge of the data collection practices, informs the goals to improve demographic data in the department. Finally, this deliverable also includes a tentative plan for future demographic data collection and sharing with the department, home institution, and the broader geoscience community.

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Undergraduate major demographics through time
Graduate student demographics through time

Upper graph: Percentage breakdown by race from 2005 to 2019. The categories include Black, Hispanic, Native American, Asian, Two or more races URM, Two or more races non-URM, Unknown, International, and White.

Lower graph: Percentage breakdown by gender from 2005 to 2019. The categories include Women and Men.
Postdoc demographics through time
Faculty demographics through time

[Diagram showing the percentage of faculty members across different categories (White, International, Unknown, Asian, Hispanic, Black) for each year from 2005 to 2019.]

[Diagram showing the gender distribution (Women, Men) for each year from 2005 to 2019.]
Comparison across ranks

- **Undergrads**:
  - Women: 75%
  - Men: 25%

- **Graduate students**:
  - Women: 50%
  - Men: 50%

- **Postdocs**:
  - Women: 75%
  - Men: 25%

- **Research staff**:
  - Women: 50%
  - Men: 50%

- **Faculty**:
  - Women: 50%
  - Men: 50%
External speaker demographics through time

% women of external speakers by seminar series
Existing Public Facing Resources

In this section, you can find resources from MIT Institutional Research, the MIT Office of the Registrar, an article sharing where MIT stands among higher education schools in MA, and some comments on the available data.

MIT Institutional Research provides demographics data on the Diversity Dashboard using a Tableau interface.

The dashboard includes Institute-wide demographics data for students, staff, postdocs and faculty and SoS demographics data for students. Demographic data is presented as % through time, with options to choose between plotting [1] race/ethnicity, [2] citizenship, or [3] gender:
https://ir.mit.edu/diversity-dashboard

There is a separate dashboard devoted to Graduate Education Statistics. This has EAPS specific % data through time on graduate student demographics including URM, non-URM, gender, or citizenship. It includes attrition rates for each demographic within EAPS. It allows EAPS to be compared to other units (i.e. SoS):
https://ir.mit.edu/graduate-education-statistics

There is a separate dashboard devoted to Postdoctoral Associates and Fellows. This has EAPS specific % and # data through time on postdoctoral demographics including URM, non-URM, gender, or citizenship. It includes average length of stay and allows EAPS to be compared to other units (i.e. SoS):
https://ir.mit.edu/postdoctoral-and-associates

The faculty demographics are only available on the main diversity dashboard for the entire institute and can be broken out by race/ethnicity, citizenship, or gender. There is an option to plot assistant, associate or full professor demographics.
https://ir.mit.edu/diversity-dashboard

The MIT Office of the Registrar provides demographics of current #s of enrolled students in each department by school year to anyone within the MIT community. This includes both undergraduate majors by year and graduate students. The data is separated into tables broken down by race/ethnicity, gender, or citizenship. It is not easy to plot this data or extract this data but it is more granular than the MIT IR dashboard.

https://registrar.mit.edu/statistics-reports

There is no demographic data for administrators/senior leadership teams, the MIT corporation, or visiting committees through time in the same place for either MIT or EAPS (that we could find). MIT ranks #86 of 87 MA higher education schools for gender diversity in leadership in an evaluation completed by Women's Power Gap:
Some comments on the public facing data:

1. There is inconsistency over whether % or #s or both are available through time.
2. There is inconsistency over whether department level demographics data is available (i.e. enrolled students & postdocs) or the entire Institute (i.e faculty demographic data).
3. There is inconsistency on whether URM or race/ethnicity is used as a demographic option.
4. None of the dashboards that provide % breakouts allow someone to ask the question of intersectional demographics through time (i.e gender + race/ethnicity).
5. There is currently no public information on LGBTQIAP+.

Existing Private Facing Resources

In this section, we describe the EAPS-specific data we have already collected for demographics of undergraduate and graduate students, postdocs, research staff and faculty, and gender demographics for departmental speakers.

Thanks to the efforts of a few different groups (including the URGE working group, the EAPS DEI-C, Taskforce 2023, and TIDE), we have data from MIT Institutional Research spanning 2005-2020 for demographics (gender, race/ethnicity, URM, citizenship) of undergraduate and graduate students, postdocs & research staff, and faculty through time. Data for graduate students exists for different sub-groups within EAPS (i.e. Geology vs. Oceanography). EAPS has gender demographics of EAPS faculty from 1991-2020 collected by the Provost's Office. There is also demographic data collected by MIT Institutional Research for EAPS staff.

We have compiled data on applicant pools for faculty searches since 2014, the Crosby and Houghton MIT Postdoctoral Fellowships, and graduate admissions. The graduate student applicant pool data is currently being tracked by the graduate admissions committee. Discussion is ongoing as to what can be shared.

We have compiled data on speaker gender demographics for external and internal speakers for the different departmental seminars (DLS, PAOC Colloquium, SLS/MASS, PICS, COG3, and the Faculty Seminar) since 2015.
Goals for Departmental Demographics

In this section, we discuss what departmental demographic data may be used for and some aspects of data collection that we would like to be sensitive to.

1. Why collect departmental demographic data?
   - This allows us to see both the change in time in EAPS and in our applicant pools (which gives us information about whether our current actions are working, or whether we need to do more!) as well as quantitative information about which groups are systematically underrepresented.
   - If shared publicly, this allows prospective staff, students, researchers, postdocs, and faculty members to make an informed decision about whether they would like to join EAPS and more broadly continue in an Earth sciences career.
   - Demographic data collection can help EAPS better accommodate the needs of speakers and community members. In identifying the data collectors and keepers, we aim to design a system that enables data collection, use, and sharing that can continue into the future.
   - We also would like to include the caveat that more data is not required before we begin to take action! In addition to this quantitative data, we also have the qualitative accounts of many people of color in EAPS which encourage us to take action.

2. How can we use this data to examine where in the process of becoming an Earth scientist we especially need to implement policies to build equity and inclusion?
   - Characterize the change in demographics through different levels of the department in order to locate the stages of Earth science careers that particularly need attention.
   - Conduct exit surveys as department members graduate or leave for other positions; track what career options department members choose, if they stay in academia, and/or advance to positions of power in peer institutions.
   - In hiring and admissions, compile and analyze demographics on who applied, was accepted, and joined, and then who finished/stayed/earned tenure for the following subgroups:
     - Undergraduate Students (declared, left and did research experiences)
     - Graduate Students
     - Postdocs
     - Researchers
     - Faculty
     - Staff
   - Note: we need to be careful in ensuring that the data we collect is interpreted correctly. For example, low numbers of any particular group in the applicant pool should not be viewed as outside of our control, and should also motivate us to ask questions like: How do the demographics of this applicant pool compare to demographics of recent undergraduate/graduate degrees in relevant disciplines? Why is the applicant pool so small? How can we change our department practices and/or culture to motivate more members of this group to apply to EAPS?
3. **Standardize and centralize data collection at a department-level.**
   - In addition to the institute level, we see value in department-specific data because many questions about EAPS may not apply to the rest of MIT (e.g. questions about different subdisciplines, fieldwork, and equity in the department). However, to alleviate the burden on our staff members, we also recommend consulting with IR to check how much data collection, visualization, and analysis they are able to coordinate through their existing infrastructure.
   - We recommend developing an agreed-upon set of standard questions and surveys that can be used for students, staff, candidates, and speakers. This will ensure that all subdisciplines and seminars (of which there are several in EAPS) are collecting the same information and are easily comparable. This is especially important because of differences between sub-communities in EAPS.

4. **Design a data collection system with (1) a high degree of specificity and flexibility, so that those with multiple identities or identities that do not fit into the prescribed categories are still able to fully self-identify, and (2) with clearly-communicated measures to protect members’ privacy.**
   - Why are specificity and flexibility important?
     - The URM/non-URM classification used currently by some dashboards lacks specificity. Neither the groups that are described by “URM” or “non-URM” are monoliths, and using such a blunt categorization system misses many important disparities (for instance, Asian Americans are in the non-URM category but are not well-represented in EAPS, and neither is there sufficient representation of the experiences of those who identify as biracial in this framework). Furthermore, the term “URM” has been criticized for being dehumanizing.
     - We recommend as high a degree of specificity as possible so that future analysts of this data are able to ask fine-grained questions and investigate patterns with precision and respect for the fact that the different challenges faced by different demographic groups may be masked by grouping them together.
     - We recommend increased specificity for our diverse international students as they make up a large portion of our population and may not identify with common US racial/ethnic groups.

5. **How should we approach the framing of questions about identity?**
   - **Broad suggestion and disclaimer: consult with IR about best practices. These suggestions come from the deliverable working group; we are not all experts on all of these issues, and these recommendations should be viewed as a starting point with room for adjustment to allow for greater sensitivity and inclusion.**
   - For all questions, include options for:
     - “prefer not to say”
     - “other:__” (fill in)
     - clicking on multiple items
   - To ask about race/ethnicity:
     - The census categories are White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Pacific Islander. We recommend adding categories including Hispanic, Latinx or Spanish Origin, Middle Eastern or
North African, and South Asian. Additionally, an option for “Mixed/Biracial” must be included.

- We also recommend data collection on which countries international students and postdocs come from and which race(s) they identify as. We note here that the EAPS podlettes extensively discussed how international students, especially international students of color, fit into a DEI framework. We emphasize that specificity of what questions we are asking may help clarify confusion (and that we should, especially, move beyond the “URM”/“non-URM” designations).

- To ask about gender:
  - As a starting point for collecting information about gender identity, we recommend asking for preferred pronouns.

- To ask about belonging to the LGBTQIAP+ community:
  - The EAPS Application Mentorship Program asks “do you identify as transgender?” and “do you identify as a member of the LGBTQIAP+” community? with options to not answer.

- Consider socioeconomic questions:
  - Are you a first-generation student?

6. Privacy and Legality

- Consult with IR on best practices.
- Please see the “Future departmental demographic data collection & sharing plan” section for further discussion on this issue.

7. Make the demographic data available with context

- Develop a dashboard (created with MIT IR to be similar to Life Sciences Coalition) that contains key plots, data, and important context (current stats + goals).
- We recommend that the dashboard includes an API that makes raw data accessible (for example as a CSV file, or by making a GitHub repo for DEI data that organizes the data collection and processing).
- Contextualize data with an explanatory paragraph (do not assume that the data speaks for itself). We recommend providing a template set of questions for making the context easy to provide (e.g. “current stat is X%, goal is Y%, Z is being done to address this”). Additional questions one might want to ask include:
  - what are the trends?
  - how do these numbers compare to other MIT departments or other geoscience departments?
- Include demographic data collection as a key goal in a EAPS DEI value statement
  - We need to be informed in order to enact change
  - We want EAPS to be a leader in these efforts

8. Increase coverage of our demographic data on EAPS members in the past and present, and set up a plan for better data collection in the future

- Past: Collect data from the past 10-15 years
  - Email past speakers
    - Anonymous responses?
Scrape + analyze speaker names (we note that asking speakers to self-identify is preferable to using algorithms that infer speakers’ identities, as these algorithms have a history of misidentifying nonbinary people and people of color)

Past faculty searches
- **Present**: Once key demographic data collections intentions have been set and approved by the department, start filling in any data gaps that currently exist.
- **Future**: (see next section) Set systems in place for easy data collection, organization, visualization, and sharing. Some ideas include:
  - Google forms
  - Qualtrics
  - GitHub repository
  - Premade R/Python notebooks for data visualization - Tableau? (would require work with IR or getting license access for someone)

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**Future departmental demographic data collection & sharing plan**

*Currently there are several groups within EAPS that collect data about speakers, applicants, and accepted students/researchers, but there is little coordination among groups or centralized data sharing for the whole community. In this section, we build from the previous section on goals to develop a plan for how we will standardize data collection and share it with the community going forward.*

The first steps in this process are:
- Review and establish the department’s goals for demographic data collection and use. Use these goals to evaluate which demographic data are required.
- Conduct an audit of what data have been collected and who is currently responsible for tracking/analyzing the data.
- Assess what data are available to share with various groups (EAPS, MIT, the public)
- Determine what data can legally be collected (in particular for job candidates). Can we collect anonymous data from job candidates?
- If data are private, understand the reasons why and share the justification and possible release times.

With this information, we can then create a collection and dissemination plan to:
- Establish a data collection strategy and set of resources
  - Use the EAPS DEI Committee Dashboard as a central location for data, plans, and resources
- Integrate demographic data into more facets of EAPS (not just in DEI-centric materials)
- Schedule demographic data sharing to the EAPS community. Possible venues include:
  - DEI-C Annual report + update on state of DEI in EAPS
  - Yearly State of EAPS presentation
Since some data analysis on the EAPS speaker demographics has already been initiated by students and faculty, we include recommendations for (1) future surveys to ask seminar speakers to self-identify (negating the need for EAPS members to either manually or algorithmically infer their identities) and (2) maintaining the privacy of visitors to the department:

1. Specific information (please refer to item 4 in “Goals for Departmental Demographics” for a discussion on how to ask about these. Note that items a,b,c,d,e in this list would ideally be shared with seminar organizers, while h,i,j should be kept anonymous.)
   a. Preferred pronouns
   b. Career stage (early, mid, etc.)
   c. Dietary preferences
   d. Disability needs
   e. Maternity needs (time to pump, pumping room, extra accommodation for partner/baby/etc.)
   f. Name of seminar
   g. Date of seminar
   h. Race/Ethnicity
   i. Gender identity
   j. LGTBQIA+

We recommend that survey collection should clearly specify the data privacy policy at the time of collection. This includes limiting access to portions of the survey results (items h,i,j above) and that this sensitive data is handled by DEI-office members. We believe the following details be considered:

- If the visitor is a job candidate they may not want a faculty member who is potentially involved in hiring to be privy to this information at this time.
- Consider a multi page / multi part survey with clearly communicated different privacy policies.
- Data relevant to measuring diversity goals shared in an anonymised form and aggregated and shared in order to preserve privacy.
  - For example, maybe we would say that data will only be aggregated and shared when there are n respondents in each category, at least for some aspects of identity (e.g., we would only share % LGTBQIA+ for our seminars once we had at least (10?15?) respondents who identified as such.) This will limit our ability to share year-by-year or seminar-by-seminar breakdowns of some identities [Clearly specify our data privacy policy at time of collection.]

As a final note, we would like to add that we not only need data to characterize the demographics of EAPS members, but also to assess equity and the experiences of different groups in EAPS. We recognize that this second question may be a different undertaking than the first and come with its own considerations on how to respect the privacy of individuals. We do not address this question in this document, but we strongly recommend that EAPS develops a plan to collect and interpret data that characterizes how members of different demographic groups experience and succeed within EAPS. (Note: some data collection on this front has been initiated, especially by the
List of Action Items for Staff and Volunteers (DRAFT)

In recognition of the fact that the recommendations in this section will take much effort from our staff members, we list some action items here in an order that we feel demonstrates quickness of implementation.

1. Compile and post a list of MIT's existing climate data and surveys on the EAPS website or DEI-C Dashboard so everyone knows which information is available and how to access it.
   (Please refer to the sections on “Existing Public Facing Resources” and “Existing Private Facing Resources” and also consider referring to pp. 4-5 of the GSC DEI Allyship Guide.)

2. Consult with IR to decide on questions about (1) privacy and who will have access to the data, (2) nuances about best practices for enquiring about people's identities (one question that has come up is especially about representing the differences in backgrounds among international students) and (3) about potentially collaborating to create an EAPS dashboard. TIDE has also thought about wording of these questions for the Application Mentorship Program and can share their questionnaires.
   (Please refer to the sections on “Future departmental demographic data collection & sharing plan” and “Goals for Departmental Demographics”.)

3. Decide on the best platform for visualizing and sharing data (GitHub, Tableau, etc).
   (Please refer to item 8 in “Goals for Departmental Demographics.”)

Notes

4. Retention data
5. How do we capture socioeconomic background?
   ○ Are you the first in your family to get an undergraduate degree or to go to graduate school?
6. Goals
   ○ Lead by example by understanding DEI limitations in geoscience and working to correct this
   ○ Identifying equity gaps
   ○ Informing recruitment practices
   ○ Understand retention