Included here is the final deliverable from Session 8 of the URGE program as prepared by the members of the 2YC URGE Pod. This document captures elements from our pod discussions, new classroom resources we developed, and a collection of pre-existing materials to produce an antiracist classroom, campus, and culture at two-year college institutions and institutions where the geologist may be the only person in that discipline.

As our 12 members are from 12 different institutions, we will be working individually as well as connecting to further develop our own education and action plans. We will be adding to this document and presenting our experiences and results at conferences, through website blog posts, and newsletters. Our first presentation will be at the Earth Educators' Rendezvous in July 2021, and we will be submitting at least one abstract to GSA and AGU.

The document (pending final approval) will be linked on the National Association of Geoscience Teachers (NAGT) Geo2YC: The Two-Year College Division:
https://nagt.org/nagt/divisions/2yc/index.html

URGE 2YC

A document of approaches and action items to deepen the knowledge and to implement strategies needed for the participation of BIPOC students and faculty in the geosciences at two-year institutions.

This document was first created by members of the 2YC URGE pod that participated in the Unlearning Racism in Geoscience (URGE) program, January-May 2021. The items presented here are not a final listing of how to identify barriers and create opportunities for members of the BIPOC community. We will continue to work towards creating change in our institutional structures and professional organizations, with intention, accountability, and inclusivity. Items will continue to be updated.

2YC URGE pod members

Laura Guertin (pod leader, Penn State Brandywine); Kristie Bradford (Lone Star College - Tomball); Hillary Goodner (Yakima Valley College); Daina Hardisty (Mount Hood Community College); Karen Helgers (SUNY Ulster County Community College); Beth Johnson (University of Wisconsin-Oshkosh, Fox Cities Campus); Megan Jones (North Hennepin Community College); Kaatje van der Hoeven Kraft (Whatcom Community College); Karen Layou (Reynolds Community College); Elizabeth Nagy (Pasadena City College); Carol Ormand (Science Education Resource Center, Carleton College); Waverly Ray (San Diego Mesa College)

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Our Journey as the 2YC URGE Pod

Our story starts with an email sent by L. Guertin to the Geo-2YC and SAGE 2YC listservs, asking if there was anyone interested in coming together to participate as a group in the new Unlearning Racism in Geoscience (URGE) program. Although designed for department and organization teams, or pods, URGE was allowing for individuals to come together from different organizations to discuss the effects of and strategies towards advancing our BIPOC students and colleagues. We quickly formed a group of geoscience faculty that operate alone or within extremely small programs at two-year colleges across the United States, with the incredible addition of one of the staff from the Science Education Resource Center (SERC).

Just as the *EOS* article Reimagining STEM Workforce Development as a Braided River encourages us to view science career pathways as ones that vary and adapt to individual needs (as we acknowledge the he awa whiria (braided rivers approach) as an established and Māori-developed research framework in Aotearoa), our individual and collective journey as a pod continually developed and never remained static. We each read the required articles, viewed the live interviews and inclusivity tips, and then came together every two weeks via Zoom to process the content and discuss our reflections. Although some of the content did not directly apply to our institutions (admissions policies, mentoring of post-doctoral researchers, etc.), we focused our efforts on applying the information to our own roles in the geoscience community - instructors and mentors at two-year institutions.

The Status of the Geoscience Workforce report from the American Geosciences Institute (Wilson, 2018) provides important data on the role of two-year colleges in the overall landscape of geoscience education and the status of faculty and students, which directly applies to the outcomes the URGE program is working towards:

- Approximately 21% of two-year colleges in the United States (which includes community colleges, two-year feeder campuses in four-year university systems, etc.) offer a geoscience course or program, with only one or two faculty members teaching in the discipline.
- Two-year colleges have higher percentages of underrepresented minorities among their student population compared to four-year institutions. Two-year colleges are important for recruiting underrepresented students into geoscience degree programs. For example, AGI (Gonzales and Keane, 2020) report that from 2010 to 2019, the percentage of geoscience bachelor's degrees conferred to Hispanics increased from 5.7% to 11.7%, while the percentage of degrees conferred to other minorities remained relatively steady.
- In the geosciences in 2017, 27% of bachelor's graduates, 26% of master's graduates, and 14% of doctoral graduates spent at least one semester at a two-year college. The flow of students from two-year colleges to four-year institutions is an important pathway to recognize. In California in Fall 2010, students from 97 California community colleges transferred into geoscience programs in the California public university system (Gonzales, 2012). In Texas in 2012, 69% of the 7,445 geoscience majors at 26 Texas

public universities had transferred from one of 67 Texas community colleges (Gonzales, 2013).

As 2YC faculty, we have an incredible opportunity and obligation to consistently work as leaders in addressing the necessary changes for BIPOC students and faculty. Success at 2YCs is one step to improve student and faculty representation and persistence in the geosciences.

References

- Gonzales, L, (2012, June 8). The Community College to University Pathway: Geoscience Majors in the California Public University System. AGI Geoscience Currents No. 61. American Geosciences Institute. 1 page. Available at: https://www.americangeosciences.org/geoscience-currents/community-college-university-pathway-geoscience-majors-california-public
- Gonzales, L. (2013, June 19). The Community College to University Pathway: Geoscience Majors in the Texas Public University System. AGI Geoscience Currents No. 73. American Geosciences Institute. 1 page. Available at: https://www.americangeosciences.org/geoscience-currents/community-college-university-pathway-geoscience-majors-texas-public-university
- Gonzales, L., and Keane, C. (2020, October 19). Diversity in the Geosciences. AGI Geoscience Currents. American Geosciences Institute Data Brief 2020-023. 5 pages. Available at: https://www.americangeosciences.org/geoscience-currents/diversity-geosciences
- Wilson, C. (2018). Status of the Geoscience Workforce 2018. American Geosciences Institute. 178 pages. Available at: https://www.americangeosciences.org/citations/status-geoscience-workforce-2018

Focus on Students

Actions to be taken by faculty that make connections to BIPOC students' interests, commitment, and ability to persist in STEM fields.

How to impact admissions

Faculty at two-year colleges do not have a direct role with undergraduate student acceptance. In the case of community colleges, their open admissions practices allow for any individuals to enroll with a high school diploma or GED. However, there is still a role faculty can play on campus and with the admissions office to increase recruitment of diverse students.

Online presence/websites

If your department/program has a website, include photos that reflect the geosciences being more than camping, field trips, and the outdoors. Use images/video that show your courses promote a science identity for all students.

Celebrate successes of your current students enrolled in your courses. Highlight successful projects, campus/community collaborations, etc., by having the institution press office write an article, take photos, and post links to these articles on the institution website and on social media.

If as a faculty member you have an institutional webpage, consider photos of diversity students from your classes (posting with permission) and perhaps a personal diversity and/or mentoring statement. If your institution does not let you control what is on your faculty page, see if they will allow a link to an external site (Google Sites, Wordpress, etc.) that contains information about your DEI efforts.

Meet with the Admissions Office

Have a meeting with the Admissions counselors at your campus, especially the ones that do the high school visits. Explain to them what geoscience is, what careers are available, how your institution sets students on a pathway to enter the field. Provide stories and examples of diverse students you know that have left your campus and continued with a geoscience career.

Inclusive/Multilingual materials

Work with your Admissions Office to create flyers/brochures about your program with inclusive language and images. Involve your multilingual students in the production of these materials, which provides an opportunity to have more discussion about geoscience curriculum and careers. Encourage your Admissions Office to have these brochures in their office, on display tables, and placed in folders they hand out at high schools and college fairs.

Visibility on campus

Secure a new bulletin board, or take over an existing one, and post descriptions and images of diverse individuals engaged in geoscience. Have this bulletin board located in a hallway along a campus tour route and/or where there are large events held on campus open to the public. If

your campus has New/incoming student orientation, secure a space to advertise inclusivity in your program.

Visibility off campus
Visibility off campus can include interactions with K-12 schools within your area--see if the schools conduct Science Nights or need assistance with science-related after-school groups. Get involved with local Scouting groups to help Scouts complete geoscience related merit badges. Connect to Master Naturalist or other citizen-scientists groups to share your geoscience knowledge with the community. Contact local museums, county park systems, or nature centers to see if they conduct activity fairs where you can set up a display. When possible, encourage your current students to participate in these events. VIrtual visibility includes campus websites, many of which have strong statements about diversity and pages with campus resources. One example of information to include is the video *Earth is Calling* which highlights a range of careers in the geosciences presented by diverse individuals.

Action Item: Review what opportunities you have on campus and online to showcase your commitment to DEI and the successes of your diverse students to aid in undergraduate student recruitment. Create an outreach plan/tool kit. Maybe a video clip that highlights potential for all in geosciences. Students appear to love studying Earth Sciences early on, but when they get to choosing classes they are likely to forget about the Geosciences as a science or a career path.

Reference/Further reading:

- Jin et al. (2019). Experiential learning and close mentoring improve recruitment and retention in the undergraduate environmental science program at an Hispanic-serving institution. Journal of Geoscience Education, 67(4): 384-399. https://doi.org/10.1080/10899995.2019.1646072

Considerations for the Course Syllabus

The course syllabus is often a student's first exposure to both the course and the instructor. It can set the tone for the semester and informs students of the learning objectives, expectations and priorities of the course. As it serves as a welcome to students, it is important that it feel inclusive to all students regardless of their identities and backgrounds. Anti-racist statements, use of inclusive language, and land acknowledgement can all help to accomplish this. Defining office hours and making them more accessible is also important to provide all students with help that they may need to succeed.

Land Acknowledgement Statement

A land acknowledgement statement is a written statement that acknowledges the history of the land where the campus community lives, works, and studies and recognizes not only the indigenous groups whose land it originally was, but the circumstances under which the land was taken from them. These circumstances were not always kind or just. It is important to acknowledge that history as the repercussions of that still influence our present and continue to influence our future.

One important key to crafting a good land acknowledgement statement is to do careful research about the group(s) who once lived on your community's land. A poorly-researched statement could potentially do more harm than good. Here are some resources that can be used to research the indigenous groups that once occupied your region:

- Native Governance Center: Resources

Additionally, there is no one method or template that can be used to create a land acknowledgement statement. Statements will vary depending on location, institution, and whether the statement comes from an indigenous or non-indigenous group. Here are some resources to use for points to consider when creating a land acknowledgement statement for your institution:

- Five Steps to Writing a Land Acknowledgement
- A Guide to Indigenous Land Acknowledgement

A quick web search will provide several examples of land acknowledgement statements from large institutions. However, here are some examples crafted by instructors at two-year colleges for inclusion in their class content:

Here is an example from the syllabus of Kaatje Kraft (Whatcom Community College):

> *I would like to acknowledge and honor this beautiful place we occupy as unceded territory of the Coast Salish Peoples. As we consider the geoscience systems that help define this space and place, it is important to me that we also honor those who have served as caretakers of these systems in past, present and the future.*

See this example from Waverly Ray (San Diego Mesa College) for what she includes in her syllabus.

Inclusive Language and Diversity Statements

Inclusive language refers to the usage of words, phrases, and expressions that specifically avoid the exclusion of any individuals or groups. It acknowledges a diverse group, promotes equity, and confers respect to all. Specifically, the usage of inclusive language is intended to avoid demeaning and insulting behavior and welcome groups that are typically underrepresented, such as racial and ethnic minorities and members of the LGTBQ community. However, statements stipulating the behavior and language that will not be tolerated in places like online discussion forums, class assignments, the classroom, etc., also have the advantage of creating a level playing field for all students in the class.

Inclusive language can be incorporated throughout the syllabus and can also be included in a specific diversity statement.

Here is an example of a diversity statement from Monica Linden (Brown University):

> *I would like to create a learning environment for my students that supports a diversity of thoughts, perspectives and experiences, and honors your identities (including race, gender, class, sexuality, religion, ability, etc.) To help accomplish this:*
>
> - *If you have a name and/or set of pronouns that differ from those that appear in your official Brown records, please let me know!*
> - *If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to come and talk with me. I want to be a resource for you. Remember that you can also submit anonymous feedback (which will lead to me making a general announcement to the class, if necessary to address your concerns). If you prefer to speak with someone outside of the course, Dean Bhattacharyya, Associate Dean of the College for Diversity Programs, is an excellent resource.*
> - *I (like many people) am still in the process of learning about diverse perspectives and identities. If something was said in class (by anyone) that made you feel uncomfortable, please talk to me about it. (Again, anonymous feedback is always an option).*

Here is an example of a diversity statement from Karen Helgers (SUNY Ulster County Community College) that sets expectations for respect of various backgrounds and perspectives:

> *I want my classroom, whether virtual or face-to-face to be a welcoming and comfortable place for all my students. I want my students to have opportunities to learn in a supportive, positive, respectful environment, and maybe even to have a little fun while doing it. I commit to creating and maintaining this type of environment through open communication, mutual respect, and promoting equity and inclusion while rejecting racism, ableism, homophobia, sexism and transphobia. Part of this process includes acknowledging and embracing the differences among us in order to establish and reinforce that each one of us matters. I appreciate your suggestions about how best to ensure this classroom is a community of respect and belonging.*

Here is a sample inclusive statement for the syllabus from the University of Kansas Center for Teaching Excellence:

> *“This is an Inclusive Classroom”*
>
> *At KU, administrators, faculty, and staff are committed to the creation and maintenance of “inclusive learning” spaces. These are classrooms, labs, and other places of learning*

where you will be treated with respect and dignity and where all individuals are provided equitable opportunity to participate, contribute, and succeed.

In [our classroom/insert course here], all students are welcome regardless of race/ethnicity, gender identities, gender expressions, sexual orientation, socio-economic status, age, disabilities, religion, regional background, Veteran status, citizenship status, nationality and other diverse identities that we each bring to class.

Your success at KU and beyond is enhanced by the innovation and creativity of thought that inclusive classrooms facilitate. The success of an inclusive classroom relies on the participation, support, and understanding of you and your peers. We encourage you to speak up and share your views, but also understand that you are doing so in a learning environment in which we all are expected to engage respectfully and with regard to the dignity of all others.

Any student who has difficulty affording groceries or who lacks a safe and stable place to live and believes this may affect their performance in the course is urged to contact me or Student Affairs for support (studentaffairs@ku.edu). Other resources you may find helpful:

Student Emergency Assistance Fund: https://studentaffairs.ku.edu/emergency-assistance-students
Free Legal Services for Students: www.legalservices.ku.edu

If you have any questions or concerns do not hesitate to raise them in class or with me directly.

Here is an example from Beth A. Johnson (University of Wisconsin-Oshkosh, Fox Cities Campus) that sets expectations for appropriate language in online Discussion Board assignments. This language is available for students in the rules for that activity as well as the course expectations on the campus' Learning Management System (LMS):

The purpose of Discussion Boards like this is to create a sense of classroom interaction and community in an online setting. We're going to use this page as a way to speak up, to say what we think about the topic, and start conversations with other people in class about this. For some people, sharing their thoughts in a forum like this may not be easy - that's okay! Just remember that everybody else is in the same boat! Be the kind of audience or respondent that you yourself would want.

In order to make sure that everybody has a good experience, here are a few rules I expect everyone to follow. I will deduct points and remove points for posts that violate these rules. Remember, it is okay to disagree with someone's thoughts or opinions, but if we do so, we will be polite, constructive, and base our positions on evidence.

Rules:

1. *Nothing obscene or crude. Let's keep this family-friendly.*
2. *No foul language.*
3. *No political insults, no racial or ethnic slurs, no direct insults about a person's character, intelligence, gender identity, or sexuality.*
4. *Don't post anything you would be embarrassed to explain to your mom or grandma!*

Defining Office Hours

Office hours are typically a requirement for faculty to list on their syllabi, but only with the days and times and no description of what the purpose is for office hours. Students may think this is a time for a faculty member not to be disturbed. Renaming office hours to student hours may still not address the cultural gaps and misunderstanding of how these can aid student success. Perhaps include a few sentences to define the purpose of office hours and the assistance you can provide. In addition, consider holding one or more office hours in student spaces (the library, classroom or other common spaces) that are less intimidating and more welcoming - the trade-off is the lack of privacy that might be necessary for certain topics of discussion. Evening and online options for office hours may also be more accommodating for student schedules and make the instructor more accessible. Holding office hours immediately before or following class times may also help students with busy off campus schedules. Read more at the AGU blog GeoEd Trek.

Earth Educators' Rendezvous resource

- Promoting Inclusion in the Geosciences with an Equity-Minded Syllabus (2020)

Action Item: Review your syllabus for language, tone, and visual display. Utilize the Syllabus Review Guide to craft a syllabus that supports learners' experiences.

References/Further reading:

- USC Rossier, Syllabus Review Guide, an inquiry tool for promoting racial and ethnic equity and equity-minded practice
- UMass Amherst Six Principles of an Inclusive Syllabus Design (PDF file)
- Nusbaum et al. (2021). Kindness at First Sight: The Role of Syllabi in Impression Formation. Teaching of Psychology, 48(2): 130-143. https://doi.org/10.1177/0098628320959953 [open access]
- Richmann et al. (2020). Syllabus Language, Teaching Style, and Instructor Self-Perception: Toward Congruence. International Journal of the Scholarship of Teaching and Learning, 14(2): Article 4. https://doi.org/10.20429/ijsotl.2020.140204 [open access]
- Using Inclusive Language: Guidelines and Examples (Rider University)
- Diversity & Inclusion Syllabi Statements (Brown University)

The First Day of Class

There are many ideas and suggestions for what to do during the first day of class. Back in 1994, Allen & Burns suggested:

> *The all-important first lecture of the physical-and historical-geology course should orient the class to: 1) university liberal-arts programs, 2) science of geology, 3) professional careers in geology, and 4) how grading, field trips, and laboratories in the class will be organized and operated. The lecturer's enthusiasm, accompanied by a slide show illustrating most phases of geology can go a long way toward sparking interest in the students.*

There is a growing body of literature that shows the use of active learning strategies at the introductory-level helps students improve their knowledge and problem-solving skills (see Wallace et al., 2021). But does this template from Allen & Burns still work for our classes today? Have we added non-geology topics to the list of items we cover, and how are we doing when it specifically comes to starting with a DEI discussion on Day 1?

Lane et al. (2021) made observations of the first day of class in 23 introductory-level STEM courses across three universities. What they discovered is that only one instructor emphasized that diversity and inclusion was important to them. The instructor encouraged students to come talk to them with any concerns or requests so that all could feel comfortable and respected in the classroom. Lane et al. point out that the instructor placed the responsibility on the student to seek them out with only a very general use of the term inclusion: "*I try so hard to make this an inclusive, respectful classroom. If there's ever anything I can do to make it more so … if there's something more I can do (or less) then please tell me because this is something I care deeply about.—Instructor 21"*

Activities on SERC/NAGT Teach The Earth

- Inclusivity Survey - Megan Jones (North Hennepin Community College) starts on the first day by giving students an inclusivity survey. She explains:
  > *I want to establish class norms that will foster an inclusive environment. I need to know what each particular group of students believes and thinks about what an inclusive classroom is like. I use an anonymous survey for this. When I get the surveys back I go through them and list what is true for the students. Then I present it to the class and tell them that this is how the class / classroom will function and they have determined 90% of it. If they have a suggestion that I am not implementing, I explain why not.*
- Elizabeth Nagy (Pasadena City College) uses a values affirmation activity in her classes that addresses stereotype threat, a negative experience shown to affect the academic performance of minority students (Steele, 2010). Students spend about 15 minutes writing a paragraph about a few values in life that are most important to them (e.g., family, religion, sports, friendships, etc.). In the original study the activity, based on self-

affirmation theory, reduced a performance gap between black and white students by 40% (Steele, 2010).
- See the full materials for The First Day of Class on the Starting Point: Teaching Entry Level Geoscience website.

Action Item: Review what you do during the first day of class. How do you spend your first class meeting with students on campus or in virtual space? What do you say, and for how long? How can you improve upon your own efforts to promote DEI on the first day?

References/Further Reading:

- Allen, J.E., & S. Burns (1994). The Important First Lecture to an Introductory Geology Class. Journal of Geological Education, 42(4): 312-315.
- Lane et al. (2021). Making a First Impression: Exploring What Instructors Do and Say on the First Day of Introductory STEM Courses. CBE-Life Sciences Education, 20(1): 1-11. https://doi.org/10.1187/cbe.20-05-0098 [open access]
- Steele, C. (2010). Whistling Vivaldi and Other Clues to How Stereotypes Affect Us, W. W. Norton, New York.
- Wallace et al. (2021). Students Taught by a First-Time Instructor Using Active-Learning Teaching Strategies Outperform Students Taught by a Highly-Regarded Traditional Instructor. Journal of College Science Teaching, 50(4). [abstract online]

Curricular Materials Focusing on Equity and Justice

There are many evidence-based, research-supported ways to bring equity and justice into the geoscience classroom. Below we highlight a few examples of how our pod members are doing so. For instructors who are interested in doing more of this, we recommend exploring the resources on the SERC/NAGT website, Teach the Earth, such as these collections:

- Teaching activities with an equity focus
- Teaching activities with a focus on justice
- Curricular materials with a focus on sustainability

Additional Resources for Instructors

- Discussing race, racism and other difficult conversations: https://www.learningforjustice.org/sites/default/files/general/TT%20Difficult%20Conversations%20web.pdf and https://www.nctsn.org/sites/default/files/resources//addressing_race_and_trauma_in_the_classroom_educators.pdf
- Teaching with radical empathy: https://drive.google.com/file/d/1_Q37ZcHDV_tw170Rlh9dMYQ4no73k9aY/view
- Resources to help educators, adults respond to racism, violence and trauma (Minnesota Dept. of Education): https://education.mn.gov/MDE/dse/safe/res/mde033973

- Helping Youth after Community Trauma: Tips for Educators (The National Child Traumatic Stress Network): https://www.nctsn.org/sites/default/files/resources/tip-sheet/helping_youth_after_community_trauma_for_educators_final_explosions.pdf
- Anti-Racist Resource Guide: https://www.victorialynnalexander.com/antiracistresourceguide
- Readings on Institutionalized Racism: https://daily.jstor.org/institutionalized-racism-a-syllabus/?fbclid=IwAR0XqLV-pRS9aFSazieLHP2nGmRpFryEszsiYsd58qQeErrL6jriPqOFugI

Shining the Spotlight on Diverse Geoscientists

Many biographies and profiles of scientists online do not include representation of diverse individuals (gender, age, career stage, ethnicity, etc.). To help students see and learn about scientists beyond an older, white male in a lab coat, a Scientist Spotlight exercise can be used. Schinske et al. (2016) developed Scientist Spotlights as a weekly homework assignment where students are introduced to a non-stereotypical scientist and are asked to read a prepared bio, and article on the field/discipline of the scientist, and then answer four questions:

- What was the most interesting or most confusing about the articles you read about Dr. [insert name]?
- What can you learn about [insert area of specialty] from these articles?
- What do these articles tell you about the types of people that do science?
- What new questions do you have after reviewing these articles?

Note that there are many variations this assignment can take, from using multimedia material (audio/video) in place of or in addition to a text summary of a scientist, to having students find a diverse scientist to learn about and to summarize their career.

Activities on SERC/NAGT Teach The Earth

- A Toast to a Scientist - Celebrating Identity and Accomplishments - Laura Guertin (Penn State Brandywine). Summary: To bring attention to a more inclusive population of scientists and to help students develop their own science identity, students are assigned to write a speech that could be given as a "toast" at an event honoring that scientist. The toast, from the viewpoint of an individual identified by the instructor or as the student themself, can be completed as an individual or group project and submitted as text or audio.
- See the full materials for Develop Students' Science Identity on the SAGE 2YC website

Organizations

The following organizations have a variety of resources online available to share with students, or to tap into for classroom assignments and campus seminars.

- 500 Queer Scientists (includes stories from LGBTQAI+ individuals that work in STEM, STEM advocacy, STEM education)

- 500 Women Scientists (includes gage, a database of women and gender minorities available for speaking engagements, etc.)
- AAPIG - Asian Americans and Pacific Islanders in Geosciences
- AISES - American Indian Science and Engineering Society
- GeoLatinas
- IAGD - International Association for Geoscience Diversity
- NABG - National Association of Black Geoscientists
- SACNAS - Society for Advancement of Chicanos/Hispanics and Native Americans in Science (includes the SACNAS Biography Project, an online archive of first-person stories by and about Chicano/Hispanic and Native American scientists with advanced degrees in science)

Action Item: In all courses/disciplines, think about how to include intentional introductions and exercises that highlight diverse researchers to broaden the identity of who works in the geosciences, and how and where research is done.

References/Further Reading:

- Cindy Bergeron at Lone Star College has a YouTube channel of interviews with a diverse group of Earth Scientists. Ranging from 7-17 minutes, these interviews provide career information and an array of role models for geoscience students.
- Brandt et al. (2020). Scientist Spotlights: online assignments to promote inclusion in ecology and evolution. Ecology and Evolution, 10(22): 12450-12456. https://doi.org/10.1002/ece3.6849 [open access]
- Guertin, L. (2019, December 9). Dr. G's #AGU19 Spotlight – Scientist Spotlights and Profiles Online. AGU Blogosphere, GeoEd Trek. [blog post]
- Schinske et al. (2016). Scientist Spotlight homework assignments shift students' stereotypes of scientists and enhance science identity in a diverse introductory science class. CBE-Life Sciences Education, 15(3): 1-18. https://doi.org/10.1187/cbe.16-01-0002 [open access]
- Sheffield et al. (2021, May 10). Perceptions of scientists held by US students can be broadened through inclusive classroom interventions. Communications Earth & Environment, 2.83. https://doi.org/10.1038/s43247-021-00156-0 [open access]
- Yonas et al. (2020). In a "Scientist Spotlight" intervention, diverse student identities matter. Journal of Microbiology & Biology Education, 21(1): 1-12. http://dx.doi.org/10.1128/jmbe.v21i1.2013 [open access]

Impacts of Mining on Indigenous Populations and Lands

Geology has historically been focused, to a large extent, on locating and extracting natural "resources." This extraction has environmental impacts, and these impacts disproportionately affect Indigenous populations. Because mineral identification plays such a key role in the geoscience curriculum, including in introductory-level courses, it provides a natural opportunity

to explore the often-unseen consequences of resource extraction and consumption on both the environment and the humans who live near mines, allowing students to explore ideas of justice and equity within the context of science.

Activities on SERC/NAGT Teach The Earth:

- The Dark Side of Mineral Mining
- Society's dependence on mineral resources
- Uranium mining on the Navajo nation
- Impacts of resource development on Native American lands

Action Item: Integrate one or more of these activities into existing courses / curricula, for both majors and non-majors. These activities acknowledge the exploitative history of Geology and encourage students to think deeply about the disproportionate, unjust impacts of society's demand for natural "resources," including the role of geoscientists in resource extraction.

References/Further Reading:

- Donohue, D. J., & Ettinger, D. P. (2020). Navigating Tribal Opposition to Permits for Great Lakes Mining Projects: Obstacles and Opportunities. Natural Resources & Environment, 35(1), 41–44.
- Lopez, M. (2020). Tribal Rights: The 1872 Mining Law's Past and Future. Natural Resources and Environment, 34(3), 53-55.
- O'Connor, M. C. (2014). It's a Hardrock Life. Earth Island Journal, Summer 2014.
- Williams, F. (2008). On Cancer's Trail. High Country News, 40(10), 12–27.

Disproportionate, Inequitable Impacts of Climate Change

Climate change is having and will continue to have inequitable impacts on lower-income communities, in the United States and around the world. As we teach our students about climate change, we have the opportunity -- some would say a responsibility -- to educate our students about these disproportionate impacts as well.

Activity on SERC/NAGT Teach The Earth

- Climate, climate change, and racism: Students watch videos and read an article to learn about the science behind climate change and some of the impacts of our warming climate, including Unequal Impact: The Deep Links Between Racism and Climate Change, Yale 360. Students post their reflections, including at least one question, to a class discussion board. They also respond to at least two of the posts from their peers, citing evidence in their responses.

Action Item: Integrate this activity into existing courses / curricula, for both majors and non-majors.

References/Further Reading:

- Unequal Impact: The Deep Links Between Racism and Climate Change, Yale 360
- There is an extensive reading list on the teaching activity page.

Disproportionate, Inequitable Impacts of Flooding

Flood events have, and will continue to have, inequitable impacts on lower-income communities, in the United States and around the world. As we teach our students about flooding, we have the opportunity -- some would say a responsibility -- to educate our students about these disproportionate impacts as well.

Activity on SERC/NAGT Teach The Earth

- Flooding, flood risks, and what populations are impacted: In this lab, students learn about four different types of flood: flash floods, regional floods, storm surges, and tsunami. They then explore the human experience of flooding and who is impacted the most by flooding in our region. Readings include Flood Risks to Low-Income Homes to Triple by 2050, from Scientific American, 2020.

Action Item: Integrate this activity into existing courses / curricula, for both majors and non-majors.

References/Further Reading:

- Flood Risks to Low-Income Homes to Triple by 2050, Scientific American, 2020
- Flash Flood: excerpt from "The Desert Cries," by Craig Childs, pages 99-109.
- Regional Flood: The Expert as Evacuee: An Eyewitness Account of the Venezuelan Floods of '99.
- Storm Surge: Eyewitness accounts from the 1953 floods in Suffolk, England, collected by the BBC news. Read accounts from Wilfrid George, Janet Woods, and several others.
- Tsunami: Eyewitness account by Dave Lowe.

Additional teaching activities in development

Our pod is in the process of developing, or of adding to the National Association of Geoscience Teachers (NAGT) Teach the Earth website. These additional teaching activities will include:

- A National Parks term project that includes a component asking students to relate the geology to their personal and/or professional interests

- Environmental Justice and Air Quality: In this assignment, students read definitions of environmental justice, and then choose an article to read about one of the following topics: air quality in different neighborhoods, redlining and air quality, air quality and health, Covid outcomes in various neighborhoods and air quality. Students reflect upon whether environmental justice exists in the US at this time. This can be done as an online discussion or a jigsaw activity.
- People and Careers: This online discussion activity guides students to a website highlighting geoscientists of color. Students choose one of the individuals whose job or research focus interests them. Students learn more about that job and report back to the class. The introduction to this activity mentions that geoscience is less diverse than other sciences, but that there are BIPOC geoscientists. It also talks about the importance of diversity to a field of study.

Gender Pronouns in the Classroom

Why do gender pronouns matter? Videos posted by CBC News and the URGE program are helpful in providing background and context for why using pronouns that students wish to be identified with create a more inclusive classroom.

In the classroom, it is important for faculty to normalize the use of pronouns, such as on the syllabus or in an email signature, but not require all students to disclose their pronouns.

For example, Swarthmore College has a gender pronoun reference sheet that details, "*Asking what pronouns to use in a specific space makes room for people to express themselves in a variety of ways, including if the person does not want to out themselves in certain spaces. People may not be out everywhere and don't want to be,"* emphasizing that "*calling roll from a sheet without knowledge of how someone wants to identify themself in the classroom can be very harmful."*

Faculty can support students through the following suggestions:

- Mention of your own pronouns at the start of the semester – include it in the syllabus, in your email signature, on your first slide in your first day of lecture, etc., so students know you are supportive;
- Create a private pre-class survey that provides a space to disclose this information (in your CMS, for example). Do not send a sheet of paper around your classroom on the first day to ask students to fill in a form that asks for their gender pronouns – this information is then visible to everyone and does not respect the privacy of the student;

- Make a general statement early in the semester, such as “If anybody has a preferred name/pronouns that don’t match the class information, please let me know publicly or privately.”

Note that some students may not provide their pronouns even when asked – and they might perceive this as a risk to not respond. A post on Medium titled “No, You Can’t Have My Pronouns!” shares, “*…refusing to respond or rejecting the request can come with potentially negative repercussions. That’s because requests for one’s pronouns often occur in social settings marked by an imbalance of power — the classroom, the workplace, community organizations, etc. …. Just because such requests are well intended doesn’t mean they don’t occur in social contexts marked by power inequity. Thus, a request for “your pronouns” isn’t a request at all. It’s a subtle but powerful demand that effectively disables the recipient of the request and threatens negative consequences for any questioning or resistance.”*

Faculty are going to make mistakes. The University of Pennsylvania’s Educators Playbook reminds us “*to [be] prepared to make a mistake—and to apologize: Despite our best efforts, we sometimes misgender people. As a culture we are in the habit of assuming pronouns based on appearance. This habit can be hard to break. When you misgender someone, correct yourself, apologize, and move on. You don’t need to justify yourself or overly apologize. It’s OK. But it’s important to challenge yourself to get it right the next time.”*

Action Item: If you are in a situation where you are comfortable sharing your pronouns, consider doing so with students at the start of a course. Consider how to inquire with students about the pronouns they prefer you use in your course that is a safe method for collecting this information.

References/Further Reading:

- Guertin, L. (2021, February 25). Pronouns in the classroom… to ask, or not to ask, and how to ask. AGU Blogosphere, GeoEd Trek. [blog post] **note that the majority of the content in this section came from this blog post*
- See Resources on Personal Pronouns by MyPronouns.org
- See graphics available at Trans Student Education Resources (TSER)
- The third Wednesday of every October is International Pronouns Day

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Using Data to Measure Inequities in Enrollments and Course Success Rates

As Estrada et al. (2016) point out, efforts to improve persistence in STEM, particularly for historically underrepresented minority students, must be informed and guided by data. Approximately half of our pod members have been collecting, analyzing, and using data on student enrollments and success rates, over the past several years, for exactly this purpose, as

part of the NSF-funded SAGE 2YC project. Examining course-level enrollment and success data, disaggregated by demographics, has allowed us to identify demographic gaps in enrollment and equity gaps in success rates.

Several of our institutions have data dashboards that allow faculty (and in some cases the public) to explore such data. Here are a few examples:

- San Diego Mesa College has an equity data dashboard. All of the data is public—anyone can search the datasets based on course, program, semester, etc. Click on the Equity Gap Analysis to see a powerful visualization of the data.
- Pasadena Community College has a very user-friendly "equity dashboard." It shows success and retention data disaggregated by ethnicity, gender, and some other parameters, as well as data for degrees and certificates. Faculty members can dig deeper into the data than this public dashboard allows.
- Yakima Valley College has a page about student demographics with a link to request more specific institutional data for research.

Action Item: Obtain and analyze data for the courses you teach. This may entail working with your Institutional Research Office, or you may already have access to the data via a data dashboard. Encourage your department to obtain these data for all courses taught by department members. Normalize analyzing these data to identify equity gaps in enrollments and success rates.

References/Further Reading:

- SAGE 2YC, Use Course-Level Outcomes Data
    - *This website includes an Excel file template, developed for the SAGE 2YC project by project evluators Debra Bragg and Cari Bishop, for aggregating enrollment and success data.*
- Bensimon, E. M., Dowd, A. C., & Witham, K. (2016). Five Principles for Enacting Equity by Design. Retrieved December 7, 2020, from https://www.aacu.org/diversitydemocracy/2016/winter/bensimon.
- Bragg, D., Bennett, S., & McCambly, H. (2016). Introduction to Pathways to Results. (Rev. ed.). Champaign, IL: Office of Community College Research and Leadership, University of Illinois at Urbana-Champaign.
- Bragg, D., Eddy, P., Iverson, E. R., Hao, Y., & O'Connell, K. (2020). The Final Report for Supporting and Advancing Geoscience Education in Two-Year Colleges (SAGE 2YC): Lessons from a major NSF investment in geoscience education.
- Harris, F. III & Bensimon, E. M. (2007). Responding to the realities of race on campus: *New Directions for Student Services*, *120*, 77-84.

Focus on Faculty

Actions to be taken by faculty, staff, and/or administrators to remove institutional barriers and establish a community that is inclusive, well resourced, and has accountability

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Mentoring and Advising

Two-year colleges often have a high turnover rate of students as undecided students determine their majors as well as students in general complete their general education requirements to transfer to the next institution. This can make it difficult to develop the instructor/student relationship between geoscience instructor and geoscience students, which in turn can lead to missed opportunities for independent study, career advising, and attracting and retaining diverse students to the geoscience major. This section includes information on several areas where instructors can find information and resources to continue to support students outside of the classroom.

Faculty are encouraged to review the Vision and Change in the Geoscience document that is a summary of the future of undergraduate geoscience education. This resource is a valuable addition to not only faculty development but advising and teaching students for a future in the discipline.

Organizational Resources to Share with Students

A small sample of materials to share with students to assist their pathway into and continuing with the geosciences includes:

- AGI Workforce Infographic and the AGI Career Compass series
- SACNAS hosts webinars for students on various topics for academic and professional development. One recorded session on the value of mentorship is available to watch on YouTube and is a valuable resource for community college students, as well as students at all other levels, to find a mentor to help achieve academic and professional goals.
- UT-Austin produced a video titled Earth is Calling that showcases a variety of geoscience careers presented by diverse individuals.

On-Campus Student Success Programs

It is important to make sure not only academic advisees but students enrolled in courses are aware of offices, programs and opportunities on campus to support learning and success.

How the information is shared with students is something to be mindful of. Haschenburger et al. (2021) studied their recruitment strategy for engaging undergraduate geology majors in the Geoscience Pathways program at the University of Texas at San Antonio, a program aimed to improve the academic performance and career preparedness for majors to facilitate their transition into the geoscience workforce. It turned out that personalized, paper invitations (not email) was the most effective way to communicate to students.

Mentoring Undergraduate Student Researchers

Undergraduate student researchers wrote and published an article titled *You are welcome here: A practical guide to diversity, equity, and inclusion for undergraduates embarking on an ecological research experience*. The article calls attention to three common sources of anxiety for undergraduate research students through a DEI lens: imposter syndrome, communicating with mentors, and safety in fieldwork. Included are suggestions for mentors to make undergraduate research experiences more equitable and inclusive, ranging from transparency, having a growth mindset, learning how to accurately pronounce students names, and to follow institutional guidelines as a mandated reporter (see Box 1).

Creating Safer Spaces for Student Researchers

Chaudhary and Berhe (2020) emphasize the need for laboratory research groups to develop antiracist policies and action in an effort to promote racial and ethnic diversity, equity, and inclusion in science. Their ten simple rules which can be modified to situations with students at 2YCs include the following: (1) Lead informed discussions about antiracism in your lab regularly; (2) Address racism in your lab and field safety guidelines; (3) Publish papers and write grants with BIPOC colleagues; (4) Evaluate your lab's mentoring practices; (5) Amplify voices of BIPOC scientists in your field; (6) Support BIPOC in their efforts to organize; (7) Intentionally recruit BIPOC students and staff; (8) Adopt a dynamic research agenda; (9) Advocate for racially diverse leadership in science; (10) Hold the powerful accountable and don't expect gratitude.

Penn State University has started programs so that prospective research team members at the undergraduate, graduate, postdoctoral, and technical levels in the LGBTQ+ community can readily identify research groups where faculty members have received training in LGBTQ+ issues and are committed to fostering a fully inclusive environment. Faculty must complete two trainings (Safer People Safer Places – LGBTQ+ Foundations Workshop and Transgender & Gender Inclusion 101 Workshop). Faculty individuals are then listed online as having an inclusive research environment in their group that is overtly friendly to members of the LGBTQ+ community - LGBTQ+ that inquire with a faculty member to engage with them in research are under no obligation to disclose their LGBTQ+ status (gender, sexual orientation, etc.) and are free to be 'out' to the extent that they choose and feel safe. To learn more, visit the Rainbow Science Network (RSN) and Rainbow Engineering Network (REN).

References/Further Reading:

- Chaudhary, V.B., and A.A. Berhe. (2020). Ten simple rules for building an antiracist lab. PLoS Comput Biol 16(10): e1008210. https://doi.org/10.1371/journal.pcbi.1008210 [open access]
- Guertin, L. (2018, July 1). Undergraduate Research: A Right, Not a Privilege - from Freeman Hrabowski. AGU Blogosphere, GeoEd Trek. [blog post]
- Haschenburger et al. (2021). Recruiting all the talent into undergraduate STEM student success programs using an invitational approach. Journal of Geoscience Education. https://doi.org/10.1080/10899995.2021.1918971

- Kortz, K.M. & van der Hoeven Kraft, K.J. (2016). Geoscience education research project: Student benefits and effective design of a course-based undergraduate research experience. Journal of Geoscience Education. https://doi.org/10.5408/15-11.1
- McGill, B.M., & 10 additional authors. (2021). You are welcome here: A practical guide to diversity, equity, and inclusion for undergraduates embarking on an ecological research experience. Ecology and Evolution, 11(8): 3636-3645. https://onlinelibrary.wiley.com/doi/10.1002/ece3.7321 [open access]

Institution DEI Resolutions and Statements

Several of our institutions have made statements, either by senior leadership or through vote by a faculty senate, relating to diversity, equity, and inclusion. If your institution is currently working on similar statements or has not yet begun to draft one, we encourage you to explore these examples.

The Pennsylvania State University (*applies to all 24 campuses)

- From the Office of Educational Equity
    - Penn State Statement on Diversity, Equity, and Inclusion (link)
    - Advancing Inclusion, Equity, and Diversity-Our Commitment to Impact: The Pennsylvania State University's Strategic Plan for 2020 to 2025 (link)
- From the Office of Ethics & Compliance
    - Penn State Values [integrity, respect, responsibility, discovery, excellence, community] (link)
- University Faculty Senate Resolutions/Legislation
    - The Senate passed a resolution affirming its support for the More Rivers to Cross: Black Faculty and Academic Racism at Penn State University (Part 1 and Part 2) recommendations and expressing solidarity with Black faculty members (April 27, 2021)
    - The Senate passed a resolution condemning all acts of bias and hatred against Asian, Asian American and Asian Pacific Islander communities (April 27, 2021)
    - The Senate passed legislation to use inclusive language and update gendered language and pronouns with gender neutral and non-binary terminology in course and program descriptions (April 27, 2021), an extension of administrative policy AD84 – Preferred Name and Gender Identity Policy.
- Additional Administrative Policies
    - Penn State Policy AD29 – Statement on Intolerance
    - Penn State Policy AD85 – Regarding Sexual and/or Gender-Based Harassment and Misconduct
    - Penn State Policy AD91 – Regarding Discrimination and Harassment, and Related Inappropriate Conduct

Pasadena City College (California)

- From the main campus: Hate has no place at PCC
    - Includes official statements on Black Lives Matter and Stop Anti-Asian Hate and a letter from the president about George Floyd
- From the Office of Human Resources
    - Mission and Values statements
    - Equity and Diversity site
- Resolutions approved by the PCC Academic Senate (which represents the faculty of the Pasadena Area Community College District [PACCD]). These include:
    - Anti-racist Resolution (approved 4/5/21)
    - Anti-racist Glossery of Terms (approved 4/5/21)
    - Denouncing Xenophobia and Anti-Asian Sentiment Arising Due to Fears of the COVID-19 Pandemic and Affirming PACCD's Commitement to Well-being and Safety of Asian American Communities (approved 6/1/20)
    - Denouncing the Killing of Unarmed Black/African American Citizens due to Racial Profiling and Racist Idealogies that Promote Trauma and Affirming PACCD's Commitement to the Health, Well-being, Inclusion, and Progress of Black/African Americans on Campus and in the Greater Community (approved 6/1/20)
    - Increasing Diversity of Faculty (adopted 11/18/19)
- Land Acknowledgement given at the beginning of PCC Academic Senate meetings:

    LAND ACKNOWLEDGMENT

    - *PCC is located on land of the Hahamonga Tribe of the Tonga Nation.*
    - *Moment of silence taken to remember those who came before us.*
    - *Black Lives Matter in the work done at PCC, in the Academic Senate and our lives.*
    - *The Armenian Genocide is continuing to hurt due to genocide in that region.*

Whatcom Community College (Bellingham, WA)

- Within the strategic plan, one of our 4 tenets is advancing equity (Core Theme 3)
- Has an official "affirmation of inclusion"
- Has an ongoing campus wide examination of racism and equity, The Equity Project that includes common book reads, Pod discussion groups, and a podcast (TEP Talk)
- Created a Black Lives Matter page of resources

State University of New York (SUNY)

- Statement in response to 4/20/21 George Floyd case verdict

SUNY Ulster County Community College Statement *(provided via email by campus Diversity Officer)*

> ***We explicitly and publicly affirm*** *our identity as an anti-racist academic institution.* ***We resolve*** *that our anti-racism commitment be reflected in the life and culture of our college through our policies, programs and practices.* ***We pledge*** *to purposefully identify, discuss and challenge issues of bias, prejudice, stereotypes, and discrimination*

*associated with racism. **We commit** to explore and address any current inequitable practices and to develop and work to implement strategies that dismantle racism within all aspects of our departments, college, and community. **We recognize** that racism exists and, in its various forms, can be conscious/intentional or unconscious/unintentional. Identifying racism as an issue does not automatically mean those involved in the act are racist or intended the negative impact. **We resolve** to unify our college community through initiatives that promote improved race-related dialogue and group dynamics.*

University of Wisconsin-Oshkosh campuses (applies to the Oshkosh Campus, the Fox Cities Campus, and the Fond du Lac Campus)

- UWO Workplace DEI Advisory Council - includes UWO DEI Statement, Strategic Priorities and Goals, and Advisory Council Membership
- UWO DEI Statement: "*Diversity drives innovation, creativity, and progress. At the University of Wisconsin Oshkosh, the culture, identities, life experiences, unique abilities, and talents of every individual contribute to the foundation of our success. Creating and maintaining an inclusive and equitable environment is of paramount importance to us. This pursuit prepares all of us to be global citizens who will contribute to the betterment of the world. We are committed to a university culture that provides everyone with the opportunity to thrive."*
- Recruit Diversity - includes information on Unconscious Bias, Diverse Advertising, and Interview Questions
- UWO Notice of Nondiscrimination

Complaints and Reporting Policies

In order to gauge faculty members' perspectives on complaints and reporting policies for incidences of racism and bias, we surveyed pod members and 7 respondents responded. The table below shows a summary of the poll results. In general, pod members indicated that awareness about these policies is important but less than half reported attending a professional learning opportunity or departmental meeting related to these policies.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I am aware of my institution's policies for students' complaints of racism and harassment.			14%	57%	29%

I have helped a student navigate these policies.	14%	71%		14%	
We have discussed these policies at departmental or school meetings.	14%	29%	14%	43%	
I have participated in professional learning opportunities (e.g., presentations, workshops) on these policies.	29%	14%	14%	43%	
I think it is important that faculty members are aware of these policies.					100%
I think it is important for department chairs to be aware of these policies.					100%

Next, we analyzed racist and bias incident policies from pod members' institutions. The table below demonstrates that policies are implemented in a wide variety. Based on this analysis, it is recommended that:

- Policies include a timeline for when a complainant should expect a response and closure of the investigation.
- Institutions publish annual incident report summaries for the public to review.
- Institutions include education and professional learning opportunities for community members.

Institution	Documents/Web pages analyzed	Submission type	Includes procedures for how complaint will be handled	Time for response or investigation	Incident Report Summary (e.g., annual report)	Education about bias (for student + community)	Training for employees
Penn State	Reporting acts of bias or intolerance Know Your Rights and Responsibilities	online form	✓		✓	✓	
Reynolds Community College	Student complaints policy Student complaint report	pdf doc	✓	5-10 days (initial response) + 10 days (investigation)			

Pasadena City College	Complaints, Grievances and Student Due Process Unlawful Harassment and Discrimination Complaint Form Student Non-Academic Complaint Form	pdf doc + online form (unclear why two forms: online form is formal, not sure if pdf doc is for informal)	Redirects to board policy	90 days (formal)			"The District's Responsible District Officer shall make arrangements for or provide training to employees on the District's unlawful discrimination policy and procedures."
San Diego Mesa College	Complaint process Complaint form	online form	Redirects to multiple board policies				
Carleton College	Information about Bias Incidents Community Concern Form	online form	✓ (general process)	Initial contact (1-2 days)	✓		
Yakima Valley College	Student Code of Conduct Complaint Form	online form	✓ (general process)	Normally 30 days for investigation to conclude (this may only apply to Title IX)			
Whatcom Community College	Bias Incident Reporting Process Incident Reporting Form	Online form (with option of contacting Title IX officer)	✓	Does not specify (may never learn results if tied to federal policy)	✓	✓	Professional Development opportunities (generally optional)
Lone Star College	Student Civil Rights Complaints Policy Employee Grievance and Review Process	Students: pdf Employees: pdf	✓ Students Employees	15 working days from date of complaint	✓	✓	Professional Development as well as Safe Colleges training

Action Item: Based on a review of the deliverables posted to the URGE website, the following recommendations provide geoscience departments with achievable and necessary goals for racist and bias complaints.

1. Departmental web page: Define and document progress towards diversity, equity, and inclusion goals.
2. Implicit training for all faculty and department chairs.
    - SAGE resources: https://serc.carleton.edu/sage2yc/musings/implicit_bias.html; https://serc.carleton.edu/sage2yc/musings/addressing_bias.html;
    - ADVANCE Geo resources: https://serc.carleton.edu/advancegeo/resources/bias.html
3. Collaborate with institutional partners to understand racism complaint policies (e.g., departmental training).
4. Include statements regarding diversity, equity, and inclusion in syllabi along with bias reporting information.
5. Departments should advocate for resources including counselors of the same race and designated advocates throughout the process.

Faculty hiring

While many of the problems that are systemic to underrepresentation of diverse faculty are not unique to community colleges, there are distinct challenges and resources that can support faculty looking to work on their campus to instill change. Below we provide some examples of challenges for both recruiting and retention as well as recommendations and resources specific to 2YCs.

Challenges in Recruitment/Hiring

- Many colleges take the all things must be equal approach rather than an equity approach, so interviews are the exact same amount of time for all candidates; how candidates are screened beyond meeting minimum qualifications may be less than transparent (which leads to possible bias); the final decision is commonly at the administrative level with no to little transparency in how that decision was made.
- There is a common perception of working at a community college is a “step down” from ones academic training - so recruitment is difficult for all positions, but then may be even more of challenge with candidates who have been marginalized to be willing/able to take a risk in a perceived step down from their academic goals. [is this fair?]
- The process is incredibly slow and not transparent to candidates and timing can be different from other academic searches.
- One of the recommended best practices is to do a “cluster hire” - this is not an option at a 2yc.

Challenges in Retention

- Lower pay structures, particularly through advancement in positions can lead to those who have greater loan debt to not be able to sustain themselves on the salaries for 2yc faculty (this may be more regional than nationwide?).
- When the primary focus is on teaching, if student evaluations are part of the promotion process are deeply problematic as research has indicated that students repeatedly rank marginalized faculty lower than their white cis-gendered counterparts. [cite research here?]
- Something about tenured vs. non-tenured faculty?

Recommendations & Resources

- Anti-bias training for hiring committees is becoming routine, but that needs to be a part of bystander intervention training as well.
- Request information from your HR - what is the rate of hiring from within adjunct faculty to “outside” faculty. If your institution tends to hire from within, be sure to engage in similar hiring processes for adjunct as one would for full time (diversity statements, teaching statements, teaching demo, etc…) to assure the same network of like colleagues continue to be advantaged.
- Best practices for recruiting, hiring, and retention recommendations from the state of Washington is here

Recommended Readings

In addition to the Curriculum and Resources pages on the URGE website, the following books, articles, and web sites are recommendations from the members of the 2YC URGE pod.

Books

- Feldman, Joe. (2019). Grading for Equity: What it Is, Why it Matters, and How it Can Transform Schools and Classrooms. Corwin (A SAGE Publishing Company). 266 pages. ISBN-13: 978-1506391571
- Harrington, C., & M. Thomas. (2018). Designing a Motivational Syllabus Creating a Learning Path for Student Engagement. Stylus Publishing. 204 pages. ISBN-13: 978-1620366257
- Longwell-Grice, R., & H. Longwell-Grice. (2021). At the Intersection: Understanding and Supporting First-Generation Students. Stylus Publishing. 372 pages. ISBN-13: 9781642670615
- Oluo, Ijeoma. (2018). So You Want to Talk About Race. Seal Press. 256 pages. ISBN-13: 9781580056779
- McGee, Ebony Omotola. (2020). Black, Brown, Bruised: How Racialized STEM Education Stifles Innovation. Harvard Education Press. 208 pages. ISBN-13: 978-1-68253-535-6

Reports

- Vision and Change in the Geosciences: The Future of Geoscience Education (2021). [open access]
- Women, Minorities, and Persons with Disabilities in Science and Engineering (2021). From National Center for Science and Engineering Statistics (NCSES), National Science Foundation.
    - *This report provides statistical information about the participation of these three groups in science and engineering education and employment. A formal report, in the form of a digest, is issued every 2 years.*
- National Academies of Sciences, Engineering, and Medicine. 2016. Barriers and Opportunities for 2-Year and 4-Year STEM Degrees: Systemic Change to Support Students' Diverse Pathways. Washington, DC: The National Academies Press. https://doi.org/10.17226/21739
- National Academies of Sciences, Engineering, and Medicine (2020). The Impacts of Racism and Bias on Black People Pursuing Careers in Science, Engineering, and Medicine: Proceedings of a Workshop. Washington, DC: The National Academies Press. https://doi.org/10.17226/25849
- National Academies of Sciences, Engineering, and Medicine (2018). Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine. Washington, DC: The National Academies Press. https://doi.org/10.17226/24994
- National Research Council. 2013. Seeking Solutions: Maximizing American Talent by Advancing Women of Color in Academia: Summary of a Conference. Washington, DC: The National Academies Press. https://doi.org/10.17226/18556.

Articles

- Harris, L.A., C. Garza, et al. (2021). Equitable Exchange: A Framework for Diversity and Inclusion in the Geosciences. AGU Advances, 2(2): https://doi.org/10.1029/2020AV000359 [open access]
- Higgins, A.K., & A.E. Maxwell. (2021). Universal Design for Learning in the Geosciences for Access and Equity in Our Classrooms. The Journal of Applied Instructional Design, 10(1): https://dx.doi.org/10.51869/101aham [open access]
- Hill, A. F., M. Jacquemart, A.U. Gold, & K. Tiampo. (2021). Changing the culture of fieldwork in the geosciences. Eos, 102. https://doi.org/10.1029/2021EO158013 [open access]
- Jensen, A.J., & 13 others. (2021). Attracting diverse students to field experiences requires adequate pay, flexibility, and inclusion. BioScience, biab039, 1-14. https://doi.org/10.1093/biosci/biab039 [open access]
- Mattheis, A., M. Murphy, & E. Marin-Spiotta. (2019). Examining intersectionality and inclusivity in geosciences education research: A synthesis of the literature 2008–2018. Journal of Geoscience Education, 67(4): 505-517. https://doi.org/10.1080/10899995.2019.1656522
- Marín-Spiotta, E., et al. (2020), Hostile climates are barriers to diversifying the geosciences. Advances in Geosciences, 53: 117–127. https://doi.org/10.5194/adgeo-53-117-2020 [open access]
- Núñez, A.-M., J.Rivera, & T. Hallmark. (2019). Applying an intersectionality lens to expand equity in the geosciences. Journal of Geoscience Education, 68(2): 97-114. https://doi.org/10.1080/10899995.2019.1675131 [open access]
- Reinen, L., & K. Kortz. (2019). “Geologic issues: Community impacts and science communication”—An introductory geoscience assignment designed to help underrepresented minority students see value in the geosciences. Journal of Geoscience Education, 67(4): 400-416. https://doi.org/10.1080/10899995.2019.1630885

Websites/Blogs/Programs

- AdvanceGeo Partnership - addressing the problem of sexual harassment and other exclusionary behaviors that lead to hostile working and learning climates in the earth, space and environmental sciences
- IAGD - International Association for Geoscience Diversity, a non-profit dedicated to improving access and inclusion for people with disabilities in the geosciences
- The Mind Hears - a blog by and for deaf and hard of hearing academics
- UDL - Universal Design for Learning