SOCIAL/CULTURAL

Exposure/Knowledge - Being the "token" minority

Family expectations

What Kind of learners are Geology majors. ← Pedagogical Differentiation

Isolation and lack of representation. (Critical mass) → in discipline and media/pop culture

Mentorship - lack of

Not a lucrative position. (perception/actual) CAREER PATHS/ INFO ABOUT WELL-PAYING JOBS

ENVIRONMENT - Nature

Science vs Advocacy tension

Access to green space

- Low visibility of societal relevance of earth science (peers & family)

Historical - new privilege (decolonizing mindset)

- Stigma of learning disability & mental health

SAFETY - UNEASE OUT IN PUBLIC/OUTDOORS

Religious discrimination/Hostile to belief systems

INSTITUTIONAL

- Don't know "unwritten rules" to email advisors beforehand
- SAT/GRE Prep can be super-expensive & unaccessible
  - ↳ Institution still uses this metric despite evidence there are better predictors
  - ↳ Rewards so-called "high achievers", affects trajectory of students,
- Students may not know where offices/programs are or even which ones exist
  - ↳ Who gets this information can be biased
- Administration has ~~to~~ focus on it like a business
- Conference/Travel reimbursement assumes that money is no object (Lay out funds first, Long time to reimbursement)
- Silos for departments around campus, lack of communication, no space for interdepartmental accomodation
- Physical accessability of campus, of fieldwork sites, lectures/active learning
- Accessibility of pedagogy / vocabulary barrier
- Issues with mental health support, accessibility, infrastructure for faculty and students
- $ Too big class sizes means less interaction/support from faculty → Faculty: Student ratio
  - ↳ weed out culture in STEM
- Financial resources of institution
- No/Little accommodation of religious holidays
- hostile work climates
- Unequal distribution of power
- Lack of credit for mentoring/value of D&I work
- NO jargon syllabi
- UNEVEN DISTRIBUTION OF DEI WORK/MENTORING

- UNaware of how to connect w/ advisors & take advantage of that resource

OTHER and LOGISTICAL

cost of highered
family leave/support
exclusivity/sense of belonging
getting to class/field trips/work
work-life-balance
navigating the process at all levels
financial literacy and access
digital divide
inspiration (lack thereof) → role models
non-transparent support structures
judgement of career paths
Political influences
travel barriers (passports, IDs, visa's)

FIELD

- Access (Proximity to home)
  - familiarity with nature not equal
- Disability
  - visible and invisible
  - → Also fitness level
- "Culture" of field geology
  - ↳ Lack of institutional policies
  - ↳ Group Norms
  - Alcohol + different cultures
- Economic Barrier (low-income) - ~~culture~~
  - ↳ Students + institutions
    - ↳ camping gear
- Camping experience/Field prep
  - ↳ fear of outdoors
- Cultural affirmation - decolonizing mentality
- Safety (environment, harassment/bullying) → Alcohol
  - different opportunities for unsafe spaces (sexual harassment/abuse)
- Instructor training on cultural competence (Awareness, familiarity)
- Living accomodations for non-gender conforming students (women)
- Assumptions about health & hygiene
- Family perception of fieldwork

the ivory tower ism

ACADEMIC

* Faculty (mis)perception about student ability
* male- and race, others dominated majors
* Group dynamics in group work/projects
* Peer (mis)perception about student ability
* Stereotype threat & micro aggressions
* Hidden curriculum / academic norms utilizing resources effectively
* Imposter syndrome
* Asking for help - without mentor in faculty
* Lack of representation / unequal mentoring responsibility
* Isolation (being the "only one") no networks or how to use
* Societal value/relevance
* First-gen (no support) or transfer students
* Low visibility of career opportunities
* Traditional classroom / lecture style
* Lack of (Geo) science in K-12.
* Gatekeeping prevent further movement.
* competitive culture

INSTITUTIONAL

Tuition Cost ⟷ Workforce

Lack of data on jobs/salaries of recent grads

Recruiting

Equity – Admissions Process

Infrastructure Funding

K-12 Prep inequity ✓

Dual system of education ? we want to know more about what you mean here

* Advising

TYC – inclusion in guided pathways

Lack of analysis at intrastate/region scale

Risk aversion to actually solving these problems

Closure of programs coming from duplication w/ PWI / policies restricting geo prog at HBCUs

Adminstrative support & resources & willingness

Lack of transparency to institutional processes

Lack of knowledge/awareness/exposure to geoscience

Legalized academic hazing

more partnerships

FIELD

- lack of exposure to the outdoors
- unfamiliarity
- identity
  - ↳ having to be "outdoorsy"
  - ↳ peer acceptance
  - ↳ other ways to do earth science not outdoors
- access ✓
  - ↳ physical → all disabilities, limited mobility, transportation
  - ↳ financial → supplies, additional tuition + fees
  - ↳ personal responsibilities → job, family care
- fear
- isolation → limited connectedness, particularly in rural areas → being "other"
- program requirement
- field challenges → social, hygiene, nutrition, hydration, creature comforts, fatigue
  - experience, planning, communication
- historical segregation with restrictions on outdoor activity
- field culture ✓ → rite of passage, drinking, masculinity, endurance + fitness

regional
- weather/season
- timing

OTHER

- parental pressure/concern without complete knowledge of potential geoscience career options
- What even is geosciences? Students may not know what it includes
- Guidance counselors have lack of knowledge of E.S
- Role of industry/museums/etc. in communicating opportunities/careers
- Peer acceptance
- deficit minded approach to student success rather than appreciating diversity of experience or situation
- sense of belonging & self-efficacy
- place based affluence provides intro to geo ☆ where affluence lacking connection to geo missing
- Science 'Purism' - social elements not seen as relevant.
- Racism/Sexism/Bias (implicit + explicit)
- Imposter Syndrome

LOGISTICAL

navigating pathway transitions

navigating academic culture
↳ especially for 1st gen students

Access to mentor/advocate & information

Financial Resources
- Personal
- Scholarships
- tuition

Childcare

Time
- Family Responsibilities
- Need to work
- Communication needs

Administration/ Institutional resources & support

Transportation
- Public infrastructure
- transit
- Hard commute

Field work/ experiences

Distance Learning

Access to Equipment/ Academic resources natural areas

Geography

Partnerships
- identify
- nurture
- maintain
- shared mission

SOCIAL/CULTURAL

- STEM as low context → lack of connections/community perspective
- Lack of exposure (students & families)
- Solo status – feeling like you have to represent group
- Teacher recommendations ✓
- Lack of social capital (family members didn't go to college or grad school)
- Lack of peer acceptance (camaraderie) ✓
- Educator challenged to navigate in PWI or MSI or HBCU (same in K-12)
  - putting food on table vs science exploration (lack of safety net)
  - people all need to contribute → making relevant to cultural values
- Lack of stories (→ Sharing) & representation of people of color to hard work * tying different values/priorities into geoscience
- cultural context for "outdoor work" or physical labor ✓ vs. "prestigous" careers

academic model doesn't support many student pathways

ACADEMIC

- UPM students not perceived as capable
- Lack of respect for the class/discipline
- Not in K-12 as "core"
  - build throughout the curriculum
- Misconceptions about rigor + value of E.S.
- Lack of Earth Science educated teachers
  - Env or Earth?
- lack of prep in foundational math/sci
- Classroom dynamics and not knowing how to ask for help
  - help/office hours not at good times
  - ↳ cultural differences in how authority is viewed + accessed
- Ignorance of career paths
- Students see an emphasis of unifying/cross-cutting concepts
- Lack of authentic experience in course experience.
  - ← practical experience
  - → Academic values & success
- Training + resources
- What people care about isn't integrated in courses (societal relevance)
- Role models/teachers don't look like you
- lack of connections to other/diverse departments
- Preparing graduate students to engage with Broader Impacts work