URGE Resource Map for Princeton University Department of Geosciences and Atmospheric and Ocean Sciences

This is a draft Resource Map for the GEO/AOS Pods at Princeton University. This was adapted from the “Sample Ph.D. Mentoring Plan" developed by Vashan Wright (Woods Hole Oceanographic Institution) and Karin Block (City College of New York and CUNY Graduate Center), License: CC BY-NC-SA 4.0. Some of these will be resources common to all and some will be questions for identifying specific resources based on needs/interests identified during initial meetings while implementing the mentoring plan.

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Intent of the resource map

The intent of this resource map is to ensure that incoming hires and students have equal access to useful information regarding their professional and personal well-being as they begin their new role. We hope that this document will not only address needs, but also prompt and provide means to access resources that are not covered in this document.

The document comprises concrete and known resources and community norms. Components that are hypothetical/desired/suggestions/recommendations for future discussion have been highlighted orange.

Mentoring plan

- Plan for connecting new hires to resources (Onboarding procedures)
    - For new faculty and academic research appointees, the Office of the Dean of Faculty and the hiring academic department are responsible for coordinating the onboarding and orientation for all new faculty. New faculty and academic research appointees are expected to contact their home department concerning arrival and onboarding information.
    - For new staff, hiring managers are responsible for preparing for the employees first day, making them feel welcome, and establishing them in their new roles. Princeton HR provides managers with the following checklist to help onboard new staff members.
    - All new hires (postdocs, staff, academic research appointees, and faculty) should have an initial call with X, to identify their needs and interests and to ensure that new hires are connected to the resources that will be of the most use to them. Please email X to schedule a meeting within XX days of the start of your position.
    - For new students, the student's advisor(s) should discuss their needs and interests in their first meeting. Students may also reach out to their program coordinator (for GEO that's Sheryl Robas -- srobas@princeton.edu, for AOS that's Anna Valerio apval@princeton.edu) if they have additional concerns or questions that they do not wish to address with their advisor.
    - All new students and hires should receive a copy of **this document** upon offer of position.
- Individual/Group meeting expectations
    - Individual and group meeting expectations vary between research groups. During the first few meetings, advisors and students/advisees/postdocs should discuss expectations and ideally develop a Mentor-Mentee Expectations document. The expectations addressed may include but are not limited to: meeting interval/frequency, literature reviews, giving presentations, socializing, time management, reviewing manuscripts, revising manuscripts/dealing with rejection,

careers, current events, media requests, etc. *See Masters & Kreeger 2017 for guidance on developing a Mentor-Mentee Expectations document.*
    - In GEO, there are no general expectations for meetings aside from committee meetings once per semester. Depending on the advisor and student, one-on-one meetings can happen as frequently as once per week or may be scheduled as needed. Many, but not all, lab groups also have regular meetings with the entire lab.
    - In AOS, it is generally expected that advisors and students meet once per week (for how long?), though weekly schedules may vary.
- Evaluations: rubric, frequency for advisor/committee evaluations, encourage self-evaluation (reflection) and review long term goals and how to achieve them
    - For faculty and academic research appointees … *What is the schedule for committee meetings/evaluations? Who helps review long term goals and develop plans for meeting those goals?*
    - AOS postdocs must submit an annual progress report discussing their work and activities over the past year and their planned work and activities for the next year/duration of their appointment. This report is reviewed by the ?Research Council?. This could be leveraged as a way of helping postdocs maintain/revise an Individual Development Plan (IDP, see below).
    - GEO: graduate students are expected to meet with their committees once per semester. After/during this meeting committee members and the student must fill out an evaluation form regarding their progress and concerns about research.
    - AOS: ?
    - Self-evaluation/advisor evaluations are performed through the re-enrollment process at Princeton University. We believe these are standardized for all graduate students. It is unclear if there is a standardized method for self-evaluation for undergraduate researchers or postdocs.
        - For instance - Scripps has students fill out self evaluations and evaluations of their advisors once a year. Advisors (and committee members if the student has advanced to candidacy) fill out evaluations of the student. All of these evaluations have specific fields for evaluation. It's also required that students/advisors sign off that they have read the evaluations.
        - AAAS provides a framework for creating and maintaining Individual Development Plans (IDP) which is targeted at PhD students and postdocs to help them 'define and pursue their career goals'. Advisors should support students/advisees/postdocs in creating and revisiting an IDP, meeting semi-annually(?) to evaluate progress and revisit the advisee's goals.
    - All AOS students participate in an exit interview after completing the program, which is an opportunity to provide feedback on the program and advising.

Core work resources

- **Code-of-conduct** It appears that few labs/PIs in the AOS/GEO department have a documented lab manual or a written code-of-conduct, but as Sarah summarized in her comment, this is not the norm at least in the GEO department. What is below (in the itemized list) is some suggestions/recommendations for developing a lab manual, based on the initial draft of Drs. Wright and Block. Ideally, the manual should address all core work resource topics, or point to other documents, websites, links with necessary information. I think this lab manual by Dr. Pico is a good example of how such a document may look like in a Geosciences department: https://docs.google.com/document/d/1p_ozt61hlepI8y2tmbfqia1rUFqtF8nQ_t2DHk3pT_g/edit

  A lab manual is inherently quite PI-dependent and its components will depend on the research focus and needs of a lab/PI. However, it can convey very important information about the atmosphere of a lab, its approach to mentoring and mentorship, collaboration, and growth of the lab members. In the same document by Dr. Pico, there is also a Sample Mentorship Agreement from the Center for Innovations in Teaching and Learning at UCSC that can be the minimum/basic document for such a lab code-of-conduct/manual: https://citl.ucsc.edu/wp-content/uploads/2019/05/CITL_Sample-Mentorship-Agreement_edited.pdf

  - All PIs must be encouraged to develop a lab group manual that includes a code-of-conduct. This manual must be reviewed, discussed, and signed by all members of the respective group. The lab manual and the code-of-conduct must address topics specific to the research group (depending on the nature of research, either theoretical, experimental, computational, or field based and a combination of these methods, these topics may vary). However, **the manual and code of conduct must address topics of inclusivity, diversity, mental health, publications or outputs, professional social media use, working hours, and vacation, each specifically and in unambiguous details.**
  - PIs that do field-based research must also include/address code-of-conduct in the field. This can be same as the departmental code-of-conduct: https://geosciences.princeton.edu/file/8671/download?token=slJ9867e (see also additional notes on this department code-of-conduct from the previous URGE session): https://docs.google.com/document/d/133kCC55WTsnI04L-IA3fc84iIbfM_BWVfMASR-7bd2o/edit)

- Communication plan and expectations - The lab manual/PI should discuss means of communication (email, potentially Slack channel for the lab group, the

norms for using such a channel), it/they should also discuss what times are appropriate for communication (*I am not sure if it/they should include any expectation for a response time?*)

- Reporting Policy - PI and the new lab group members must discuss expectations and the procedure in case of and related to issues of insensitivity, harassment (e.g. no "locker room" talk), exclusion (e.g. not everyone drinks alcohol) and the consequences, provide additional contacts for reporting outside of advisor in the manual and mention those in meeting with new members. Some necessary information include:
  - Sexual Harassment/Assault Advising, Resources and Education (SHARE): McCosh Health Center, Washington Road, Princeton, NJ 08544 phone: 609-258-3310, email: share@princeton.edu https://share.princeton.edu
  - The Director of Gender Equity and the Title IX Admin. -- Regan Crotty phone: 609-258-8886, email:rehunt@princeton.edu
  - Counseling and Psychological Services (CPS) McCosh Health Center, Washington Road, Princeton, NJ 08544 phone: 609-258-3141 https://uhs.princeton.edu/counseling-psychological-services
  - Medical Services at University Health Services (UHS) McCosh Health Center, Washington Road, Princeton, NJ 08544 phone: 609-258-3141 https://uhs.princeton.edu
  - Ombuds Office 179 Nassau Street Suite D, Princeton, NJ 08544 phone: 609-258-1775, email: ombuds@princeton.edu https://ombuds.princeton.edu
  - Office of Religious Life Chaplains Murray-Dodge Hall, Princeton, NJ 08544 phone: 609-258-3047, email: orl@princeton.edu https://religiouslife.princeton.edu

- Equipment - Depending on the nature of the research, the PI and the new members could discuss (and document in the lab manual) where to find and how to fund/request equipment and resources for research and training as needs arise. Items for discussion and consideration may include, but not limited to:
  - **Lab and field equipment:** instructions and procedures, safety protocols, for accessing lab or field research equipments, e.g., individual gear like hiking boots; how to fund or access to sufficient "library" of hiking/camping/outdoor equipment;
  - **Computational and data storage resources:** how to request an account on Princeton Research Computing (PICSciE) servers (some PIs are members of the PICSciE and some are not, and I imagine the access procedure and computational account details for members of different groups varies); how to access additional computational resources (this is also discussed in an item below); how to access or request funds to buy local space for data storage (eg., External Solid State Drive (SSD))
  - **Reimbursement of costs:** How and where to make requests for reimbursing costs for research, education, training needs/materials; make

clear the expected timeline of such reimbursements - preferably as fast as possible; include information about department or group's contact person for questions regarding reimbursement [Question**:** is there any way to cover incidental costs temporarily before reimbursement, especially if initially paying the travel and other costs out of pocket could be a burden for some group members?]

- **Writing and reading materials:** (see also the discussion of *Writing Resources* below) These could also include references to specific books and resources particular to a field of research rather than, e.g., general field-unspecific writing/reading materials:

    - **Lab-specific library for useful resources**: PI and the lab members may consider building an online/hardcopy library (e.g., on Google Drive, Dropbox, PI's website, lab group's website, if online) for sharing reading materials. Some of the reading materials may be discussed in group meetings, and some other may serve occasional needs, literature review purposes, etc. Classify the papers, articles, books in appropriate folders and subfolders and share with all group members (after addressing necessary copyright and other permissions, if/when needed).

    - The lab library may include for discussion: writing and science communication resources, relevant papers and books for a research topic/project, science background in the field of research and development, history of science in the field (such as in the context of, or inspired by the work of scientists that have been developing the Geocontext; as another example, the history of and the people who developed the ideas of plate tectonics, e.g., N. Oreskes, "An insider's history of the modern theory of the Earth", H. W. Menard, "The Ocean of Truth: A Personal History of Global Tectonics" [these two resources are originally suggested by M. Manga here]), examples of DEI, JEDI, anti-racist research and scholarship (if a computational and/or machine-learning lab/group, consider e.g., R. Benjamin, Race After Technology), and environmental justice and related works (if it applies to a field of research; e.g., if doing research on exploration geophysics, Earth resources and energy geophysics, consider books such as the recent work by C. Jerolmack, Up to Heaven and Down to Hell) in the field of research
    - An example reading club/library from the Lyons' lab at Scripps/UCSD: https://www.lyonslab.org/book-club

        - **Creating and maintaining a lab wikipedia page** (*it does not have to be a public page)***:** Consider developing a lab wikipedia page for instructions on how to use some of the more sophisticated lab equipment, procedures for accessing computational resources, other lab materials, tools and methods, BAJEDI and EDI activities, works and plannings, and any other things that need persistence and documentation. I think lab wiki can also be particularly useful for experimental or field-based labs, where long term implementation or use of some lab equipment or field resources/tools are expected, and no other centralized knowledge base exists for those tools/resources. Some example platforms that make it easy to build a lab wikipedia are (Princeton may have its own platform for PIs, but I don't know about it and cannot find any info):
            - https://www.mediawiki.org/wiki/MediaWiki
            - https://docs.gitlab.com/ee/user/project/wiki/
            - https://openwetware.org/wiki/Main_Page

    - Conference and workshop participation: PIs and the new group members must discuss the expectations for attending workshops, conferences, and meetings.
        - Include list of all meetings that the research group attends (AGU, EGU, GSA, Seismological Society of America, Goldschmidt Conferences, Gordon Research Conferences and Seminars, Soil Science Society of America, Society for Industrial and Applied Mathematics (SIAM) conferences, American Physical Society meetings, etc),
        - How often do the meetings that the research group usually attend take place (annually, biannually, etc)?
        - When are the new groups members expected to participate? Be explicit and unambiguous about this. For example, you can mention that attendance is necessary (with or without an abstract submission or presentation of any results) within the first or the second year of joining the PI's group,
        - Make it explicit that the cost for registering and traveling for (with reasonable costs) meetings, conferences and workshops are fully covered by the department/PI funds,
        - Discuss the procedure for requesting travel/conference/meeting reimbursement,
        - Prepare or include (in the main lab manual or in the department code of conduct) a section for conference/meeting code-of-conduct.
        - If a student's work is interdisciplinary, recognize and support that the student may need to explore conferences outside of the lab group's usual rotation.

    - Affirm that the lab is open to and submits/encourages proposals for presentation, participation, and recruitment efforts in workshops/conferences such as the following:

- SACNAS,
- NABG,
- AISES,
- GeoLatinas, and other similar conferences and meetings.

[Question: Can the costs for attending these workshops/meetings be covered through proposals for the GEO/AOS “DEIA Initiative Request for Proposals” calls? Otherwise, the PI must anticipate allocating funds in their other project and proposal budgets.]

Community support and mental health resources

- Assistance finding accommodations, moving expenses/assistance
  - Nora Zelizer is the best point of contact for GEO, email: nzelizer@princeton.edu
  - For graduate students - Link
  - Department point person for incoming postdocs, grad students and research staff
  - Laura Rossi is the person to contact for AOS, email: lrossi@princeton.edu
  - Off-campus housing website
  - Tiger trade

- Services at Princeton University
  - Office of Diversity and Inclusion
  - Carl A. Fields Center for Equality and Cultural Understanding:
    - Student Cultural Groups
    - They also have a program -- PU Mentoring Program (PUMP) -- (for undergrad) pairs first-year students of color with soph-senior mentors, as well as an alumnus of color to help them navigate and adjust to campus life.
  - University Affinity Groups / grad SoC Groups
  - Davis International Center: meant to support international students in navigating academia and adjusting to life at Princeton
    Contact: (609) 258-5006
    Email for general information: davisic@princeton.edu
    Email for immigration information: puvisa@princeton.edu
  - Women*s Center
  - LGBT Center
  - Counseling and Psychological Services
  - Ombuds Office:
    - “a **confidential** place to discuss academic concerns, administrative issues, workplace issues, explanation and interpretation of policies and procedures, and many other issues and concerns. You can speak freely to us because the University Ombuds Office offers a place where you can talk with a

confidential, impartial resource about a complaint, conflict or problem and we are not part of any formal University process."
        - They can offer confidential counseling before/during the reporting process
        - However, they **will not engage** in any situation that may cause a conflict of interest
    - The SHARE office at Princeton, (Sexual Harassment/Assault Advising, Resources, and Education)
    - Office of religious life: https://religiouslife.princeton.edu/chaplaincies-groups
    - Office of disability services: https://ods.princeton.edu
    - Scholar's Institute Fellows Program:
        - Aims to provide mentorship and support to first-generation and/or lower income students
    - Support/information for parents
        - Tigers with Cubs for graduate students and postdocs with/expecting children
        - Graduate student childbirth and adoption accommodation policy
        - Family Focused Initiatives page on Grad School website
        - Lactation/quiet room locations
        - Student Child Care Assistance Program (SCCAP) to help w/ child care costs for kids < 6 or up to 12 yrs for single parents $5000/child max
        - Employee Child Care Assistance Program (ECCAP)

- Encourage and assist making connections to someone who may understand their experience (e.g., Black male counselor for a Black male student)
    - This will be tailored to specific individual, but some resources listed here
        - First year students of color mentoring program (PUMP) as mentioned above
        - Princeton Women in Geosciences (PWIGS) provides a mentoring program:
        - Scholars Institute Fellows Program mentoring program

- Calendar(s) of events or mailing lists to join
    - Department calendar of events (both social and academic) would be very helpful – The GEO academic event calendar can be found at: https://geosciences.princeton.edu/events
    - General events calendar for Princeton: https://www.princeton.edu/events
    - Grad events calendar: https://gradevents.princeton.edu
    - Graduate School Acces, Diversity and inclusion calendar: https://graddiversity.princeton.edu/ADI_events
    - Carl A. Fields Center for Equality events calendar: http://fieldscenter.princeton.edu/events

        - Graduate School Access, Diversity and Inclusion Newsletter (and link to subscribe): https://gradschool.princeton.edu/diversity/kaleidoscope-newsletter
        - The Prism (Dialogue, Diversity, Difference) magazine mailing list: https://www.princeton.edu/~prism/join.html
    - What activities/institutions will help them feel at home? Are there local clubs, religious or spiritual organizations, organizations, hobbies they were previously involved with that they can get connected with in the area?
        - Aside from the above-listed affinity/cultural groups there are lists of all graduate student organizations and undergraduate organizations (some of which are open to grad students) that you can filter by organization type
        - There are also groups within the department which do activities together (e.g. bike rides, climbing, etc.) so other GEO department members can help guide people based on their individual interests
    - Connecting with cohorts, organizations, social clubs with common identities and/or interests
        - This will be tailored to specific individual, but general resources listed here
            - Student cultural groups
            - Grad student groups
            - Postdoctoral Council
            - Tigers with Cubs for graduate students and postdocs with/expecting children
            - International Spouses and Partners of Princeton University
            - There was also previously GEO graduate student pods to help students stay connected with others in the department -- it is possible this will continue again in future semesters
    - Businesses or other needs, e.g. gyms, barber shops/hair services, etc.
        - This will be tailored to specific individual and it may be best to get information from SoC groups or other community groups
    - Introductions for other people of color - fund membership fees for organizations like SACNAS, NABG, AISES, GeoLatinas, and others
    - Outline expectations for taking vacation (e.g., 3 weeks) and for reasonable work hours (e.g., 40-50 hrs/wk; be explicit!)
        - Unfortunately there is not set “expectation” and this will vary by advisor

Skillset support resources

- Lab/Group-Specific Information
    - Different skillsets may be useful or necessary within a specific group or laboratory. Consult with your advisor to learn what skills or experiences

may be required for dissertation work or coursework. Your advisor and/or the Geosciences Department can provide details for additional resources to develop these skills.

- Below is a compilation of links and resources for common skills that may be useful for work in the Geosciences Department.
    - Laboratory Training Resources
        - Virtual and in-person training for various types of laboratories, equipment, and safety procedures are available for sign-up via Princeton's Employee Learning Center.
        - General Laboratory Safety is required for all students working in a laboratory. It covers the elements of the federal OSHA Laboratory Standard, references and resources, safety data sheets (SDS), personal protective equipment, fume hoods, chemical spill response, chemical waste disposal, flammable liquids, and compressed gases.
        - A variety of other more specific courses are also provided, including Animal Worker Health and Safety, Biosafety, Laser Safety, and Radiation Safety.
    - Computer Science/Programming Resources
        - The Princeton Institute for Computational Science and Engineering (PICSciE) and the OIT Research Computing team offer workshops and training sessions each semester for a variety of programming languages and computing techniques. The live-training topics include:
            - Linux Command Line
            - R
            - MATLAB
            - Python
            - GIS
            - GIT
            - Conda
            - Docker and Singularity containers
            - High Performance Computing (HPC) Clusters
        - Pre-recorded virtual workshops on these topics and more are also available:
            - Fall 2020 Workshops
            - Winter 2021 Bootcamp
            - Spring 2021 Workshops
        - Text and video tutorials on programming topics and how to use Princeton's HPC clusters have also been compiled by Princeton Research Computing.
        - For more specific, individual help, Princeton Research Computing also offers Help Sessions: meet with Research Computing staff for one-on-one help with computing questions including understanding/troubleshooting

error messages, installing/compiling software, data analysis/visualizing, etc.

- Fieldwork-Related Resources
  - Princeton provides multiple outdoor/wilderness-related training opportunities through the *Outdoor Action (OA)* program. Training session costs are waived for students who wish to take the full suite of courses to become "OA Leaders."
  - A brief description of each offered training session is listed below, along with a link to the session pages:
    - **CPR**: become CPR-certified for adult CPR, Automatic Electronic Defibrillation (AED), and infant/children CPR (optional as part of Basic Life Support training); provided by Princeton's Outdoor Action (OA) program
    - **Epinephrine**: learn to use epinephrine injections to treat anaphylactic reactions (e.g., from insect bites, food allergies, etc.)
    - **Wilderness First Aid**: covers first aid training in remote wilderness settings, including patient examination and evaluation, body systems and anatomy, wound care, splinting, environmental emergencies, and backcountry medicine
    - **Wilderness First Responder**: more advanced than Wilderness First Aid; covers patient examination and evaluation, body systems and anatomy, trauma care, environmental emergencies, splints, wilderness rescue, and backcountry medicine
    - **Leave No Trace Training**: teaches the 7 principles of Leave No Trace practices in the backcountry
    - **Technical Skills Training**: teaches a variety of camping and outdoor skills including route planning, navigation, outdoor cooking, and campsite selection and set-up
    - **Managing Safety Workshop**: teaches how to evaluate and manage risk potential by identifying hazard factors and implementing safety factors that address increasing risk levels; addresses how to create a safe environment both from the perspective of a physical space and institutional racism/bias
  - The OA also provides a variety of guides and reading material listed on their First Aid & Safety page (scroll down to Outdoor Safety Information). This includes guides for how to plan safe field trips, how to recognize and manage particular illnesses/diseases, and potential injuries and difficulties in specific environments (e.g., high altitude, cold weather, hot weather).
  - **Campus Vehicle Driver Certification**: training to become certified to drive both yourself and other students in Princeton vehicles, including the Geosciences Department vans (often used for fieldtrips); requires a Driver's History Questionnaire, online test, and practical driving test
- Writing Resources

        - The Princeton Writing Center offers both one-on-one appointments and larger group writing sessions for support with common writing assignments/projects for graduate students, including proposals, articles, dissertations, and fellowship/job applications.
        - Workshops, writing groups, and online resources specifically for proposal writing have also been compiled by the Writing Center.
        - Three half-term writing courses for Science/Engineering are offered:
            - **WRI 501: Reading and Writing about the Scientific Literature**
            - **WRI 502: Writing a Persuasive Proposal in Quantitative Disciplines**
            - **WRI 503: Writing an Effective Scientific Research Article**
    - Teaching Resources
        - The McGraw center for teaching and Learning offers materials and a number of trainings aimed at graduate students and faculty.
            - Specifically, recommended practices for inclusive and equitable teaching are also available on the McGraw webpage.

Professional development resources

- The traditional pipeline of academic development no longer applies to the modern STEM career (see, for reference and further information, the following EOS opinion: https://eos.org/opinions/reimagining-stem-workforce-development-as-a-braided-river)
- As such, it is essential to provide multiple avenues for training and development for undergraduate and graduate students, and early career scientists, and to encourage these individuals to nurture multiple talents and consider alternative careers as they explore their long-term ambitions. An emphasis should be given to the fact that choosing an alternative career is not equivalent to “dropping out” or “quitting” academia, it is an expression of the individual’s contribution to STEM.

- **Available resources for training and development:**

    - Teaching/pedagogy resources
        - Pedagogy Workshop: https://mcgraw.princeton.edu/graduate-students/pedagogy-workshops
        - Teaching Seminar: https://mcgraw.princeton.edu/graduate-students/teaching-seminar
        - Teaching opportunities (includes partnerships with community colleges and support for incarcerated students): https://mcgraw.princeton.edu/teaching-opportunities

- Project management/budgeting
    - Academic strategy: https://mcgraw.princeton.edu/undergraduates/academic-strategies-workshops
    - Time and project management tools: https://libguides.princeton.edu/c.php?g=913275&p=6615518
    - Research and project administration: https://orpa.princeton.edu/resources/training

- Media training/virtual learning
    - https://mcgraw.princeton.edu/engaging-and-learning-online-undergraduates
    - Digital Learning Lab: https://mcgrawdll.princeton.edu/
    - Virtual learning workshops: https://mcgraw.princeton.edu/teaching-online-fall-2020/workshops-and-learning-opportunities

- Proposal writing
    - The Princeton Writing Program: Resources for proposal writers: https://writing.princeton.edu/graduate-students-postdocs/resources-proposal-writers
    - Writing a Persuasive Proposal in Quantitative Disciplines: https://libguides.princeton.edu/c.php?g=573158&p=3952001
    - Graduate Writing Days: https://gsg.princeton.edu/information-for-students/academic-affairs/graduate-student-writing-days/

- Public speaking
    - Public speaking exercises (including tips on how to present over Zoom): https://pwrites.princeton.edu/useful-public-speaking-links/
    - Academic communication series: https://mcgraw.princeton.edu/academic-communication-series
    - Introduction to Public Speaking (workshop provided by HR): https://hr.princeton.edu/myhr/courses/connection-not-perfection-introduction-public-speaking

- Networking
    - Networking resources through the Center for Career Development: https://careerdevelopment.princeton.edu/internships-jobs/research-networking-tools

- Networking tips: https://careerdevelopment.princeton.edu/alumni/career-resources-alumni/networking-tips
- Networking opportunities: https://entrepreneurs.princeton.edu/education-and-resources/networking-opportunities

- Design/drafting of figures
  - Data visualization guidelines: https://libguides.princeton.edu/c.php?g=913275&p=6614965
  - Adobe Photoshop, Premiere (video editing), Illustrator:
    - https://mcgrawdll.princeton.edu/pu_toolbox/adobe-photoshop/
    - https://mcgrawdll.princeton.edu/pu_toolbox/adobe-premiere/
    - https://mcgrawdll.princeton.edu/pu_toolbox/adobe-illustrator/
    - https://catalog.princeton.edu/catalog/11198416
  - Python:
    - https://csml.princeton.edu/resources/resources-python
    - https://researchcomputing.princeton.edu/support/knowledge-base/python
    - https://introcs.cs.princeton.edu/python/home/
  - R and Matlab:
    - https://csml.princeton.edu/resources/resources-r
    - https://researchcomputing.princeton.edu/support/knowledge-base/matlab
  - ArcGIS:
    - https://researchcomputing.princeton.edu/services/gis-geospatial-analysis
    - https://library.princeton.edu/collections/pumagic/online-courses
    - https://library.princeton.edu/collections/pumagic/workshops

- Professional Societies
  - AGU: https://www.agu.org/
  - EGU: https://www.egu.eu/
  - GSA: https://www.geosociety.org/
  - At Princeton:
  - PUGS: https://geosciences.princeton.edu/undergraduate/pugs
  - For a list of additional societies:
    - https://libguides.usc.edu/c.php?g=234982&p=1559535
    - https://aipg.org/page/ProfessionalAssociations

- Additional coursework
    - English language program: https://mcgraw.princeton.edu/graduates/english-language-program
    - Writing teaching statements and philosophies: https://mcgraw.princeton.edu/node/1486
    - How would you teach this class? (for interviews): https://mcgraw.princeton.edu/node/1501
    - Writing recommendation letters: https://mcgraw.princeton.edu/node/1506
    - Scientific writing workshops (Schedule): https://libcal.princeton.edu/calendar/?cid=12260&t=d&d=0000-00-00&cal=12260&inc=0

- **Fellowships, internships, summer experiences, field course opportunities**
    - Student Opportunities from Fields Center: http://fieldscenter.princeton.edu/summer-opportunities-and-internships
    - NSF Graduate research fellowship: https://www.nsfgrfp.org/
    - NASA Graduate student fellowship: https://astrobiology.nasa.gov/funding/future-investigators-in-nasa-earth-and-space-sci-2/
    - Princeton High Meadows Environmental Institute internships for undergraduates: https://environment.princeton.edu/education/internships/
    - IRIS Internship Program: https://www.iris.edu/hq/internship/
    - IRIS Seismology Skill Building Workshop for undergraduates: https://www.iris.edu/hq/workshops/2021/01/ssb_2
    - ROSES (seismology) workshops for graduate students: https://www.iris.edu/hq/inclass/course/roses (offered this year, maybe?)
    - Scripps Institution of Oceanography Summer Undergraduate Research Fellowship (SURF) REU for undergraduates
    - Woods Hole Oceanographic Institution Summer Student Fellowship for undergraduates

- **Departmental and regional seminars, presentation opportunities, and opportunities for professional networking**
    - Departmental seminars
        - Departmental Lecture Series: https://geosciences.princeton.edu/events/lecture-series
        - Environmental Geology and Geochemistry Seminar (EGGS): https://geosciences.princeton.edu/events/eggs

- Climate Seminar Series: https://geosciences.princeton.edu/events/climate-seminar-series
- Solid Earth Brown Bag Series: https://geosciences.princeton.edu/events/brown-bag

- Regional seminars
  - Rutgers
    - Seminar Series Summary (from Ecology to Geophysics): https://climatechange.rutgers.edu/events/seminar-series
  - Lamont-Doherty Earth Observatory (Columbia University)
    - Earth Science Colloquium: https://www.ldeo.columbia.edu/news-events/events/colloquium/earth-science-colloquium
    - Topical seminars in Biology & Paleo-environment (BPE), Geochemistry, Geodynamics, MG&G/SGT, and Ocean and Climate Physics (OCP): https://www.ldeo.columbia.edu/topical-seminars

- Local conferences of interest
  - Local
    - GSA: https://www.geosociety.org/GSA/Events/Section_Meetings/GSA/Sections/ne/2021mtg/home.aspx
    - Northeastern Geobiology Symposium (unfortunately, no official website as the location changes from year to year, but do google the name to see past symposiums and contact information)

  - National/International (these are big and expensive, make sure to check out the funding resources and allow recharge time during the conference itself)
    - Goldschmidt: https://goldschmidt.info/
      - Financial support: https://www.geochemsoc.org/programs/goldschmidt-conference-grants
    - AGU: https://www.agu.org/Plan-for-a-Meeting/AGUMeetings
      - Financial support: https://www.agu.org/Learn-and-Develop/Learn/Travel-Research-Grants/Fall-Meeting-General-STG
      - Fall Meeting (yearly) and Ocean Sciences Meeting (every 2 years)
    - EGU: https://www.egu.eu/meetings/

        - Financial support: https://blogs.egu.eu/geolog/2019/10/31/egu-2020-financial-support-to-attend-the-general-assembly/

- **Additional resources for support**
    - Virtual learning blog: https://mcgraw.princeton.edu/undergraduates/learnprinceton-blog
    - LinkedIn Learning: https://linkedinlearning.princeton.edu/
    - The Princeton Writing Program: https://writing.princeton.edu/graduate-students-postdocs
    - AGU webinars which are on a wide range of topics including resume writing, science communication, and student funding opportunities: https://www.agu.org/Learn-and-Develop/Learn/Career-Advancement/AGU-Webinar
    - The AGU website also has other resources on career development and other resources concerning funding opportunities as well: https://www.agu.org/Learn-and-Develop/Learn

Outreach resources

- Voluntary outreach opportunities for Graduate Students/Postdocs
    - Princeton Prison Teaching Initiative
    - Open Labs
    - Princeton Citizen Scientists
    - Geosciences Diversity Committee Funding
- Voluntary outreach opportunities for Faculty
    - NSF Racial Equity in STEM Grant - means for starting an outreach program
- Expectations and Benefits
    - For graduate students and postdocs the only explicit expectation relating to Be A JEDI activities is that there be one or two representatives from each group serving on the department's Diversity Committee each year. This position is not compensated, per a University-wide policy which prohibits additional compensation for committee work. These positions are advertised as only ten hours of work per year, however, in practice representatives on the Committee are spending significantly more than ten hours/year. Serving on the Committee is voluntary, but it nonetheless could represent a "time tax." A solution to this that graduate students have proposed is partnering with the Graduate Student Government at Princeton to request that the University alter this policy.
    - For faculty there is also an expectation that three faculty serve on the diversity committee. This would constitute a minimum of 10 hours of work

per year attending the Committee meetings, but likely involves doing significantly more than that.
        - Non-faculty in the geosciences department may submit a proposal to the department diversity committee for funding to do Be A JEDI activities, and it is possible to include in the budget of these proposals compensation for one's own time.
    - Honoraria and Speaker Fees
        - In general, honoraria are not given to invited speakers in this department. Graduate students have requested that speakers of color coming to the department to talk about DEI be an exception to this norm, and this request was denied.
        - A work-around for this is inviting speakers via a proposal submitted to the Diversity Committee. A proposal can include honoraria for the speaker in its budget.
        - No one in the department currently charges speaker fees (?)