



CREATING AN INCLUSIVE REU APPLICATION

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The REU application process is key to attracting motivated students with strong potential, while giving signals about your program's values. Students may decide to apply based on the type of work available and by believing that they will fit in or feel comfortable, given the descriptions and photos. Having a simple and straightforward application can keep students from turning away. Every REU requires a separate application, and so it helps to lighten the application requirements where possible. Here are some steps and tips on creating a successful application process.

➔ Making Your REU Application and Website Inviting and Inclusive

When a student is looking for a research opportunity or is ready to apply, they will likely check out your website first. An appealing, accessible, and inclusive website is often the first view a student gets of your program's community and approach to diversity. To appeal to a wide range of students, it is helpful to develop materials with these features in mind:

- » A program description that demonstrates that diversity and inclusion as a priority. For example, see the University Corporation for Atmospheric Research [SOARS program's statements](#).
- » An engaging website that shows a range of projects available:
 - Field-based, lab-based, computational, modeling, data analytical
 - Individual or collaborative
 - Interdisciplinary, cross-culturally relevant
 - Potential for student involvement in project design
- » Image matters! Evaluate the images, videos, and language you use to promote your REU. For example, a banner photo showing all white male students and faculty on top of a mountain may not feel like the right program for someone who may not identify with that group, or like those types of activities. Some questions to ask yourself include:
 - Are you promoting diverse student experiences that are also accessible for students with disabilities?
 - Are you showcasing diverse advisors and mentors?
 - Are you discussing program policies that will keep students with diverse race, gender, ethnicity, religion, and disability identities safe and supported?
 - Are you demonstrating access and inclusion through audio and descriptive captioning of videos?
- » Integrity is important: Keep in mind that showing images that do not accurately represent your program for the sake of showing diverse students is misleading to potential students. Be honest with the portrayal of your program. If you have not had diverse cohorts and do not have images of diversity to show on your website, be sure to highlight in the description how your program will work with students from groups historically underrepresented in the Earth system sciences. Assure students that no matter their background, they will be supported, included, and successful.

University of Massachusetts Boston

Coastal Research in Environmental Science and Technology

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Summer Research Internships in Coastal Systems

Announcements

» To ensure the health and safety of our faculty, students, staff, and surrounding community, UMass Boston will continue to operate in hybrid fashion, with some courses lodged on campus and others—the majority—continuing in remote modality during the fall 2020 semester. Many answers about the campus's response to the coronavirus can be found in our special section.

The **Coastal Research in Environmental Science and Technology (CREST)** program at the University of Massachusetts Boston (UMass Boston) is a 10-week immersive research experience serving 8 undergraduate scholars per year. CREST exposes these students to cutting edge, authentic, coastal environmental research at UMass Boston in an integrative transdisciplinary program. CREST focuses on coastal research that incorporates the natural and social sciences and leverages the existing research and educational programs within the School for the Environment at UMass Boston.

"I credit the CREST REU experience for initiating and growing my serious interest in STEM. The program remains one of my favorite research experiences, and I would love to see myself end up back in Boston some day!"

Christiana, Kenyon College, CREST-REU scholar

Research Topics

Program Information

The CREST-REU Program at the University of Massachusetts Boston has been funded by grants from the National Science Foundation's Division of Ocean Science's. Our most recent funding award is NSF Award # OCE-1658901; PIs: Christian and Poynton and previous awards include NSF Award # 1359242 and NSF Award # 1062374.

Fig 1. This website is inclusive in terms of the photos that show people doing both indoor and outdoor work, women and people of color that would be accessible to all and be of interest to those who seek one or the other. Second, the students shown include a woman and a person of color, which suggests an inclusive program culture.

- » An example of an appealing, inclusive website is that for the [Summer Research Internships in Coastal Systems](#) at the University of Massachusetts Boston (Fig. 1) which stays away from stereotypical images of the geology field camp with a group of White, able-bodied men at the top of a mountain peak, which doesn't feel inclusive to some.
- » An REU website that is accessible for people with disabilities will:
 - Use larger text and high contrast. Avoid colors that negatively impact those with color vision deficiency, such as red and green.
 - Is your website [screen reader](#) compatible?
 - Is it a mobile friendly website?
 - Ensure that all interactive content is keyboard accessible, meaning that you can navigate through the fields without using a mouse.
 - Conform with the [Web Content Accessibility Guidelines \(WCAG\)](#).
 - Provide [alternative text](#) for images, especially graphics that contain important content, like deadlines. Alternative text is different from a caption - see the example below.



Caption: *Belize REU students, program faculty, and local children gather to fly a drone.*

An example of alternative text: *College students, program faculty, and children standing in front of a yellow building, some are looking up to the sky. A student standing towards the middle wearing a blue shirt, a backpack, dark pants, a hat and sunglasses looks up while holding a remote control for flying a drone. (University of Central Florida REU: Preparing the Next Generation of Scholars through Community GIS and Citizen Science. Image credit T. Hawthorne).*

- » Follow basic guidelines in making your REU materials accessible to those with visual and hearing disabilities. Ensure compliance with the United States Access Board's [Section 508](#) and eAccessibility requirements that all institutions must adhere to with digital media. You can test your website's accessibility using the [WAVE Web Content Evaluation Tool](#). If you find significant issues with your institution's website, bring them up with your web developer.
- » Get to know the accessibility capabilities of your other tools, in addition to your primary website. For example, even Google Documents has the ability to add alternative text.

➔ Include Essential Information

- » Post REU application information online by early December, if possible.
- » Make sure to include: application deadlines, program duration and dates, locations, logistics, rate of pay or stipend amount, and costs covered (e.g., travel and lodging).
- » Choose an application deadline that corresponds with other programs (e.g., early February). Choose a weekday in case of issues that arise. February 1st or 15th are often used.
- » Clearly state the eligibility requirements: e.g., must be a U.S. citizen or permanent resident; must be currently enrolled in college and have one semester remaining after the summer for NSF REU programs.
- » Give students until March 15th to decide whether to accept your offer. REU sites can make offers to students prior to March 15th but need to be clear that a decision is not required until the 15th of March, per general guidance from GEO Program Officers.
- » Demonstrate a commitment to diversity, equity, and inclusion, and make clear your efforts to create accessible experiences for students with disabilities. For support, contact the International Association for Geoscience Diversity at <http://www.theiagd.org> or at info_at_theiagd.org.
- » Provide a contact phone number and email address for questions about the application. This will help to make your program feel more welcoming and accessible.



To get an idea of how other programs in the Geosciences Directorate advertise and operate their application processes, visit other REU websites via the [NSF REU site](#).

Check with Your Institution

- » Before you design your application process, check with your HR offices about payment procedures. Most REUs pay students with a stipend and don't formally hire them.
- » Ask about using demographic information in the selection process and whether it is allowed. The history of how universities and other organizations may use demographic data in affirmative action is complex and ongoing as described [in this historical timeline](#).

➔ Setting Up Your Application System

A webpage for the REU is usually the basic platform for the application. Include links to an application form and clear instructions for how to submit transcripts or other documents.



- » Select the platform or tool for handling applications forms, transcripts, letters of recommendation, if required. These might be a departmental website, SurveyMonkey, Google Forms, or Qualtrics. Ensure that the system allows students to upload documents and materials. Test your web application process with someone from outside of your institution.
- » Provide a downloadable PDF of the application form, as faculty sometimes print out forms for students without internet access. Include a mailing address or fax number where they can submit it.
- » If possible, set up a process that confirms the receipt of the application.
- » Provide information on where to:
 - Complete an online application form
 - Upload or email electronic transcripts
 - Submit letters of recommendation
- » **Accessibility:** Be sure that the application form is accessible to individuals with disabilities (e.g., screen reader compatible, high contrast, adjustable text size).
- » Provide a contact phone/email address for questions about the application.

Designing the Application

The application process should be straightforward and clear about what is required and how to submit materials. Applications can be onerous to complete, especially if a student is applying to more than one REU program. Aim to keep requirements as simple as possible. Avoid asking applicants to list tedious information that does not add value to the evaluation of the applicant. Streamlined application requirements might include the following:

- » Personal information (e.g., name, email, phone, address), keeping in mind protecting Personal Identifying Information (PII)
- » Education information (year in college, institution name, major, courses)
- » Research interests (can be a checklist of topics or open answer – this helps with matching students to projects)
- » Skills background (e.g., computer, lab, field, or other skills)
- » Honors, awards, or scholarships
- » Previous work experience, including volunteerism
- » Service or education work (e.g., tutoring, teaching, outreach)
- » Transcripts: Request unofficial electronic transcripts, as they are easier and cheaper for students to send.
- » Essay questions can be the key to finding students who fit your program, and can be the most important part of the application. See below for more information.
- » Include information about potential interview questions that could be used in lieu of recommendation letters or essay questions. Be sure that real-time captioning is available during an interview for students who are deaf or hard of hearing.

Include Demographic Questions at the End of Your Application Form



In order to determine the impact of your recruiting practices, it is important to know the demographics of your applicant pool. Consider comparing your REU application pool with the selected pool in terms of race/ethnicity, gender, disability, veteran status, and first-generation status, regardless of whether this information is used in the selection process. Check with your organization if you are allowed to use demographic information in the selection process or only collect it in aggregated form for reporting purposes. For example, here is one [document of demographic questions](#) that are used in educational programs.

Promoting the REU Program and Application

Make sure that your recruitment strategies are getting your program in front of the right audience. For example, you can advertise the REU on email lists and opportunity boards that have an explicit focus on diversity and inclusion.

If you choose to advertise on social media, you can continue to show that accessibility is a priority by including image alternative text and captions on videos, at a minimum. All key information should be in text form, not just in a graphic. Be aware of your social media audience: will you be reaching out to undergraduates around the US who have no previous exposure to research, or will you be informing PIs at research institutions?

Vocabulary

Word choice can go a long way toward making your materials more inclusive. Here are a few suggestions for words and phrases to use and avoid.

Disability: Use “disabled” or “students with disabilities.” Avoid “handicapped” or “differently abled.”

Race and ethnicity: Avoid “women and minorities” or “minority,” except for “underrepresented minorities.”



One example is the [SOARS internship program which writes](#): “SOARS seeks to involve students from groups that are historically underrepresented in the sciences, including Black or African-American, American Indian or Alaska Native, Hispanic or Latino, female, first-generation college students, veterans, and students with disabilities. SOARS welcomes lesbian, gay, bisexual, and transgender students; students who have experienced, and worked to overcome, educational or economic disadvantages, and/or who have personal or family circumstances that may complicate their continued progress in research careers.”

Gender: Include non-binary genders in demographic questions. In the application, ask for the student’s pronoun with a blank text field to allow the most flexibility. Avoid binary language (men/women, he/she) and use “students” and the pronoun “they” instead.

➔ Implicit Biases in Application Materials

Application Metrics are Often Laden with Biases

Be aware that those with financial resources and strong social capital and support systems may have more experience on their resumes. For example, a student who can afford to go to school without holding a job will have more time to focus on grades and possibly earn a higher GPA. They may also have time to join clubs, participate in extracurricular activities, or gain experience through work that is relevant to their field. See the [chapter on Selecting a Diverse and Balanced Cohort](#) for a more in-depth discussion. Note that the small advantages or disadvantages that a student faces along the way are compounded over time.



Biases in Letters of Recommendation

Research shows that letters are rife with bias, with a tendency to portray women, people of color, and other members of groups historically underrepresented in the geosciences less favorably. This is also true for people from non-research-focused institutions. Furthermore, letter writing places an undue burden on faculty, especially at small colleges where they may be the only faculty member writing letters for multiple students.

“Female applicants are less likely to be described as “brilliant,” “trailblazer,” or “one of the best students I’ve ever had,” according to a study of recommendation letters for highly selective geoscience postdoctoral fellowships” (Kuo, 2016).

See [“Letters of Recommendation: Just Say No”](#) (Inside Higher Ed, 2019). Some REU managers are asking for references rather than letters of recommendation, and then calling the references before hiring the student.

➔ Effective Essay Questions

Standard Questions Give Limited Results

Often essay questions in REU applications ask about students' interests and goals, which may lead one to giving higher rankings to those who have had the time and funds to explore opportunities, and overlook those who have potential but haven't had the chance to develop leadership qualities. These questions might read as follows:

1. Write about what your career goals are and how participating in this REU program will help you meet these goals.
2. Describe the areas of research in the geosciences that interest you most, your personal goals for the internship, and indicate your preference for working in office, lab, or field settings.

One REU site manager wrote, *"We stopped using a question like this, because we found that we got extremely uniform answers from that question, and it didn't help to distinguish the candidates. Nearly every student would write an essay on the theme of 'I want to get a PhD, and this program will help me get into grad school.'"*



Carefully Chosen Essay Questions Provide Insight

Essay questions can be the key to finding students who will make a great participant in your program, especially if you go beyond asking about aspirations and goals. Here are two examples:



1. Describe how you have overcome or dealt with a challenge or adversity in your life. This can be either a specific situation or a broader issue.
2. This program is dedicated to enhancing the diversity of future scientific communities and sharing our science with a broader audience. Describe how you, based on your personal background and life experiences (including social, cultural, familial, educational, or other opportunities or challenges) will contribute to this mission during and after participating in this REU.

Some REU managers suggest adding one of these questions to your essay prompts, citing very informative answers that help with the selection process:

1. Is there anything else that you would like our selection committee to know about you?
2. What unique qualities and characteristics will you bring to our REU program?

Provide Guidance on Essay Length

Include guidance on the answer length for each essay prompt, e.g., “Please write at least 200 words, and no more than 400 words.” Sometimes students who have a lot of potential but have not had a lot of academic preparation might write too little unless a length is specified. Others may write too much.

The Win-Win of Inclusive Promotional and Application Materials

An inclusive REU application provides your site with the opportunity to draw in students from groups historically underrepresented in the geosciences, including those with disabilities, to make your program more successful (Powell, 2018).

- » Show that you care about diversity, inclusion, and the students themselves through the language, statements, and photos used in your website.
- » The essay questions used in your application will also be an indicator of what qualities you value and encourage in your program. This may be important to students who know firsthand the struggles of dealing with racism, sexism, ableism, or other implicit biases in their lives.



Resources

Barron, Brenda. [How To Make Your Website Accessible to People with Disabilities](#).

National Disability Association (Ireland). [Make your websites more accessible](#).

WC3. [Web Content Accessibility Guidelines \(WCAG\) 2.0](#).

W3C Web Accessibility Initiative. [Easy Checks – A First Review of Web Accessibility](#).



Further Reading

De Paor, D.G., Karabinos, P., Dickens, G.T., & Atchison, C.L. 2017. Color vision deficiency and geoscience illustrations. *GSA Today*, 27. DOI: 10.1130/GSATG322GW.1.

Kuo, M. 2016. [Recommendation letters reflect gender bias](#). *Science*. Oct. 3.

Powell, K. 2018. [These labs are remarkably diverse — here's why they're winning at science](#). *Nature*, 558, 19-22. DOI: 10.1038/d41586-018-05316-5.