You are more than just a Biometry student, or a UCSB student in general. As a teacher that was recently in your shoes, I recognize that students have priorities outside of EEMB 146. **Although I have a limited perspective, I would like to provide some tools and insights on developing a professional career outside of this class and UCSB**. My email (sbsambado@ucsb.edu) is always open if you have questions about grad school or what research is like throughout this course and beyond.

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Myself, + the help of others, have collected resources on some topics I think are important to know about:

(If you would like to add or edit anything please send sbsambado@ucsb.edu an email.)

1. How to find different paths in science
2. How to write a CV
3. How to write an email/cover letter to a potential PI/boss
4. Funding opportunities
5. How to get a government job with a biology bachelor's degree - written by my friend, Jacob Weverka!

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Research opportunities explicitly for undergrads!

UCSB or UC specific

Funds for research costs

Helpful for those who are thinking about senior thesis projects or want to pair up with a grad student on a particular project

- **UCSB Undergrad Research & Creative Activities (URCA)URL**

  The URCA grant is an opportunity for undergrads to pursue **$750 in funding for their own independent research project**. By applying for the URCA grant, you become an integral part of the research community at UCSB and will develop important skills like taking a research project from conception to completion, learning how a typical grant application process works and getting hands-on experience with research.

- **UCSB Transfer Student Research Award (TSRA)URL**

  The TSRA grant is an opportunity for transfer students to pursue **$750 in funding for their own independent research project**. By applying for the TSRA grant, you become an integral part of the research community at UCSB and will develop important skills like taking a research project from conception to completion, learning how a typical grant application process works and getting hands-on experience with research.

- **UCSB Faculty Research Assistance Program (FRAP)URL**

  If you are an undergrad in the College of Letters & Science, you can apply for **$350 grants** to work directly with a faculty member on a specific research project. You can also earn **academic credit for your time spent researching**. To find research opportunities, inquire with a professor directly or search through the FRAP directory.

- **Gene & Susan Lucas Undergrad Research FundURL**

  The Gene & Susan Lucas Undergrad Research Fund was created to help **first-generation undergrad** students experience research alongside UCSB faculty. The program supports research for first-generation UCSB undergrad in STEM. Funds may be used for **stipend, research materials, travel, conferences, or field experience**.

- **UCSB Coastal FundURL**

  The Coastal Fund (CF) is a student initiative dedicated to the conservation of UCSB coastline. The CF accepts proposals during 3 funding cycles throughout the year (one per academic quarter). Research proposals are intended for undergrad and graduate coastal research, community and campus programs or coastal education. **Funds can be used for experiment supplies or undergrad stipend**. Find out more information by clicking this link.

- **UCSB Undergrad Research Assistance Program DirectoryURL**

  Maybe you don't really get what "research" is, or may have many different interests, but would like to gain experience. The Undergrad Research Assistance (RA) Directory is a great tool to start with - it will **give you an idea of different research opportunities that are currently advertised by faculty**. Peruse through this link to find out more information.

- Fellowship programs

  Admission to these program offer financial and professional development support. Highly recommend applying for a program if you qualify.

- **Field-based Undergrad Engagement through Research, Teaching, & Education (FUERTE)URL**

  A National Science Foundation (NSF) program for UCSB undergrads organized by members of EEMB department. FUERTE is designed to **build students foundation to succeed at UCSB and develop the skills students need for a career in conservation and environmental sciences**. FUERTE is meant to welcome and support students who are traditionally under-represented in these fields, especially Latinx, Indigenous, Black,

and first-generation undergraduates. As a FUERTE member, students will **receive financial support in summers** in addition to training and experience.

- **UCSB McNair Scholars ProgramURL**

  The McNair Scholars Program is specifically designed to assist undergrads on their entrance to a PhD program. If accepted into the program, participant will receieve a **stipend of $3,000, all expense paid travel to academic conferences, a one-year academic advising and opportunities to have research published in the UCSB McNair Journal**. To qualify for the McNair Scholars Program, you must be either a low-income as defined by US Department of Education and first generation college student or a member of group underrepresented in higher education as defined by US Department of Education (African-American, Hispanic-Latino, Native American, and Alaskan, Pacific Islander/Native Hawaiian).

- **UCSB Monarch Opportunity ScholarshipURL**

  The Monarch Opportunity Scholarship is a collaboration between Office of Financial Aid & Scholarships (OFAS), Career Services, and Undocumented Student Services scholarship developed to ensure that all students have the opportunity to receive financial support and achieve their educational and professional goals. By participating in the Monarch Opportunity Scholarship with the Undocumented Student Services (USS), selected students will serve as Student Mentors for the USS Pre-Pair Program. As a Pre-Pair Program Student Mentors at USS, **students will primarily support a cohort of undocumented students participating in USS's Pre-Pair Program** in order to help them navigate their first year at UCSB. Furthermore, Student Mentors will provide holistic support to UCSB undergraduate undocumented students who are not part of the Pre-Pair Program. Student Mentors will work with Lead Intern and USS Team to identify and develop resources tailored to undocumented students.

- **UCNRS Advancing Inclusivity FellowshipURL**

  The University of California Natural Reserve System (UCNRS) has a **10-week summer internship** that pairs undergraduates with faculty or staff working at the UC Riverside Natural Reserves. Students will work with advisors on a summer research project to gain field experience. Undergraduates from accredited universities within Southern California. First generation students and Pell Grant recipients are encouraged to apply. No field experience is necessary. **Recipients receive a $4,500 stipend for 30 hours/week of work**.

- **California Alliance for Minority Participation (CAMP)URL**

  The California Alliance for Minority Participation (CAMP) provides resources and opportunities to underrepresented students in STEM across many UC campuses. The Summer Research Program provides a **10-week intensive research experience** for CAMP eligible students interested in a career in STEM. CAMP participants work in a UCSB laboratory with a grad student or post-doc research mentor to recieve one-on-one training and support for the research project. CAMP interns also participate in weekly group meetings to develop oral presentaion skills, attend specifical seminars and present their results at the end-of-summer poster session.

- **MARC U*STARURL**

The Maximizing Access to Research Careers at UCSB if funded by National Institute of Health (NIH). The program seeks to increase number of biomedical and behavioral scientists from underrepresented backgrounds in leadership positions. MARC Scholars go through a **two-year program of research, leadership development, and graduate school preparation** guided by individual biomedical faculty mentors.

- **EUREKA!URL**

  A program designed for UCSB undergrads in STEM disciplines. The program is focused on **introducing students in their first year to the broader science community** on campus & **providing exposure to research** through academic year internships. EURKEA is hosted by the Center for Science & Engineering Partnerships (CSEP) at the CA Nanosystems Institute (CNSI).

- Opportunities to develop field ecology skills

- **UCNRS Hastings Reserve William Simes AwardURL**

  Hastings, located in Carmel Valley, is part of the UC Natural Reserve System (UCNRS) that is offering research money for undergrads. The Simes Fund is intended to support costs associated with an extended (e.g., several month) period of **field research at Hastings**. Appropriate uses include costs of housing, food, and other supplies required to conduct fieldwork.

- **UCNRS California Ecology & Conservation Field QuarterURL**

  California Ecology and Conservation is an **undergraduate field program that brings together students from across the UC system for seven weeks of intensive scientific training at UC Natural Reserve System (UCNRS) reserves**. Guided by experienced field instructors, students complete a series of increasingly independent research studies while learning to detect natural patterns, frame questions into feasible research projects, and apply field techniques. At the conclusion of each project, students analyze their data and present their findings in oral presentations, posters, and written reports. Students hone their research, public speaking, and scientific writing skills with constant practice and feedback while gaining a working familiarity with California's diverse ecosystems.

  personal tangent: this field quarter transformed Sam's career goals. The UCNRS is a truly a special place to learn ecology and research skills.

Non-UCSB specific

- **REUs 2023 List (Ecology and Evolution)URL**

  Research Experience for Undergraduates (**REU**) is a National Science Foundation (**NSF**) program aimed to provide **paid research opportunities** to undergraduates. REUs occur **during the summer** months and typically last 9 weeks. REU opportunities can be available at your home institute, or at other universities across the US that have NSF funding.

During an REU, each student is associated with a specific research program where they work closely with the faculty and other researchers. It can be a great opportunity to gain research skills, meet with other researchers/undergrads, and experience what other institutions are like.

This link is not an exhaustive list of possible REUs, but it is a start to see which places are currently advertising. If there is a particular lab group you are interested in at your home institution or other institutions, you can always inquire if a REU is possible via email.

Research events for undergrads

- **EEMB Undergraduate Research Open House**

  Are you interested in Undergraduate research? Want to learn what happens in an Ecology, Evolution, or Marine Biology research lab? If you are, come and join us at the EEMB Undergraduate Research Open House. Date is TBD, but wanted to put this event on everyone's radar. Please keep a lookout for this event on bionews listserv.

  What is the EEMB Undergraduate Open House? The EEMB Undergraduate Open House is an event to expose undergraduates to EEMB research at UCSB through exploring research labs and meeting researchers. EEMB research labs will be open to undergraduates to come watch, meet, and talk to researchers about what they study, and learn how research at UCSB works.

  Why should you attend? You should attend to get a taste of real research and get exposed to the vast range of EEMB research happening on UCSB's campus. You should attend to meet researchers, graduate students, and even other undergraduates. You should also attend if you just want a snack and to take a peek into some new buildings.

  How to Participate: Come to Noble Hall room 2201 ("The Node") at any time between 3pm and 6pm on TBD. There you will be provided with a map, a list of participating labs, and snacks! Follow the map to different labs where you will find researchers ready to share their experiences. Please wear closed toe shoes for entry to all labs. Ask questions and engage!

- **EEMB Undergraduate Research Symposium**

  What: EEMB Undergraduate Research Symposium

  When: TBD... Typically, Spring Quarter during Undergrad Research Week

  Who: The entire EEMB community, including our friends in other departments that study ecology, evolution, and/or marine biology. Students that conducted research of any kind as an undergraduate are encouraged to present a talk or poster!

Where: MSI conference room, balcony, and courtyard

Why: To celebrate the research done by undergraduates in the department and connect these students to research-related resources

Presenters, Please note: ALL students of any major and at any stage in their research are encouraged to present their research if it is in the scope of ecology, evolution, and/or marine biology! Also, you will be able to edit abstracts after registration so please do not fret if your abstract isn't quite where you'd like it to be. More information will be sent in early April.

Please be on the lookout for more details on bionews listserv.

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Groups on campus geared towards professional development

If you identify with any of the groups, I highly recommend checking these programs out which have way more sophisticated professional development tools than I do.

- **UCSB American Indians in Science & Engineering (AISES)URL**

  AISES at UCSB will provide peer support, leadership opportunities, professional development workshops, financial support and career guidance for its members. AISES UCSB and National will support the mission of increasing the amount of American Indians in the fields of science, engineering, and other related technology disciplines.

- **National Society of Black Engineers & Scientists (NSBE) at UCSBURL**

  NSBE connects Black engineers with academic, professional, and developmental resources to succeed in their field. NSBE attends national NSBE conferences, link STEM students with industry and academic opportunities, and facilitate on-campus workshops.

- **UCSB out in STEM (oSTEM)URL**

  Out in STEM (oSTEM) is an organization at UCSB and a chapter of oSTEM Incorporated, the national non-profit organization. We aim to promote & support LGBTQ (lesbian, gay, bisexual, transgender, and queer) individuals and their allies in their pursuit of STEM fields.

- **UCSB Society for Advancement of Chicanos & Native Americans in Science (SACNAS)URL**

  The UCSB SACNAS chapter is part of the national SACNAS Organization, which encourages Chicano, Hispanic, and Native American students, along with students of other ethnic backgrounds, to pursue higher education and assists them in obtaining the advanced degrees necessary for scientific researach, industry, leadership, and teaching careers at all levels. **SACNAS provides many professional development and leadership opportunities for SACNAS members specializing in STEM fields**.

- **UCSB Society of Asian Scientists & Engineers (SASE)URL**
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UCSB SASE's mission is to foster the growth of science & engineering students through professional development, academic support, & community, industry, and academia.

- **UCSB Womxn in Science & Engineering (WiSE)URL**

  A graduate student led, non-profit UCSB organization aimed to promote equal opportunity and inclusion for all members, support scientific & career advancement, create community for women and gender minorities in STEM fields.

Common jargon in science/academia

Often times, there are a lot of words that are spoken, but given no context. It can feel overwhelming to hear these unknown words and feel like you're expected to know them. Here is a quick list of some words I remember having confusion about when I was figuring out what "research" is. **My definitions are not the only way to describe some of these terms**, but hopefully they are general enough to give students a head start next time they encounter them in a conversation, and as you read through this page.

If you think there are other common words that would be helpful to explicitly define, please email sbsambado@ucsb.edu.

Individuals or roles

1. **Technician:** position to help grad or professor w/ research
   - can be field, lab, or computational work
   - usually you get health benefits and monthly salary or stipend
   - take advantage of this position! ask your supervisor for additional responsibilities or development
     - attend grad level seminars, journal clubs
     - if you want to learn something that someone else is doing, ask if you can shadow
     - ask what the authorship policy of the lab is
2. **PI (principal investigator):** oversees the work supported by grant
3. **Doctoral student:** grad student that is admitted to a PhD program
4. **Doctoral candidate:** doctoral student that has passed qualifying exams and is on track to receive PhD
5. **Post-doc(toral):** people who have a PhD that are in transition between career moves
   - transition between PhD and Professorship (academic)
   - transition between PhD and industry (non-academic)
6. **Research group:** referred to as a lab, even if it doesn't have a physical laboratory space
   - comprised of students, researchers, post-docs, PIs

1. **Professors**: called different names based on their hiring status
   - ***tenured***: indefinite appointment
   - ***adjunct***: mostly lecturers
   - ***assistant***: full time faculty, 1st step to tenure
   - ***associate***: full time faculty, newly tenured
   - ***full:*** higher rank than associate

- ***endowed***: funded by an endowment (ie large donation)
- ***emeritus***: retired tenured professor

Money

2. **grant:** typically, support for a specific project
3. **fellowship:** typically, support that has more weight on individual
4. **external funding:** outside campus funding
    - **government source:** NSF, NIH, NOAA, USGS, USDA
    - **private source:** Ford, Hertz, Schmidt, Worster
1. **internal funding:** within campus funding
    - **university level:** central campus fellowships, merit or diversity fellowships
    - **department level:** TAships, from advisor or collaborators

Other acronyms

1. **NSF** : National Science Foundation
2. **NIH** : National Institutes of Health
3. **NOAA** : National Oceanic and Atmospheric Administration
4. **USGS** : United States Geological Survey
5. **USDA** : United States Department of Agriculture