



How to Be a CNR Researcher

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Berkeley
UNIVERSITY OF CALIFORNIA

College of
Natural Resources

College of Natural Resources

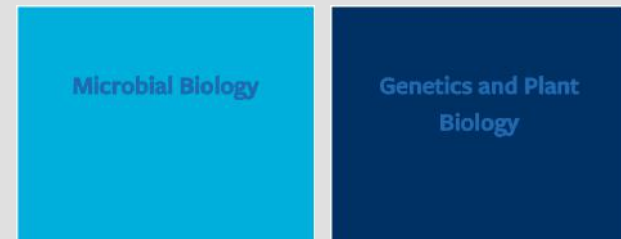
□ Environmental Science, Policy & Management



□ Agricultural & Resource Economics



□ Plant & Microbial Biology

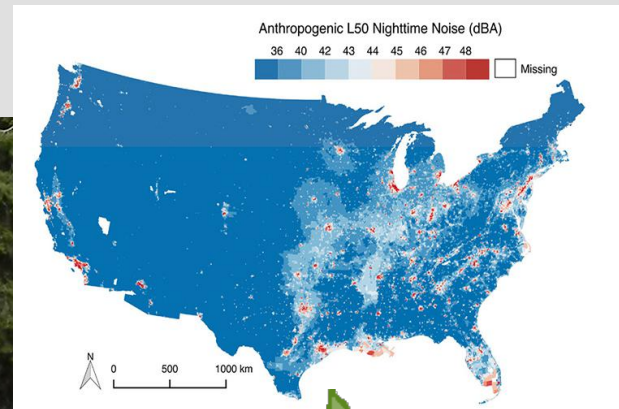
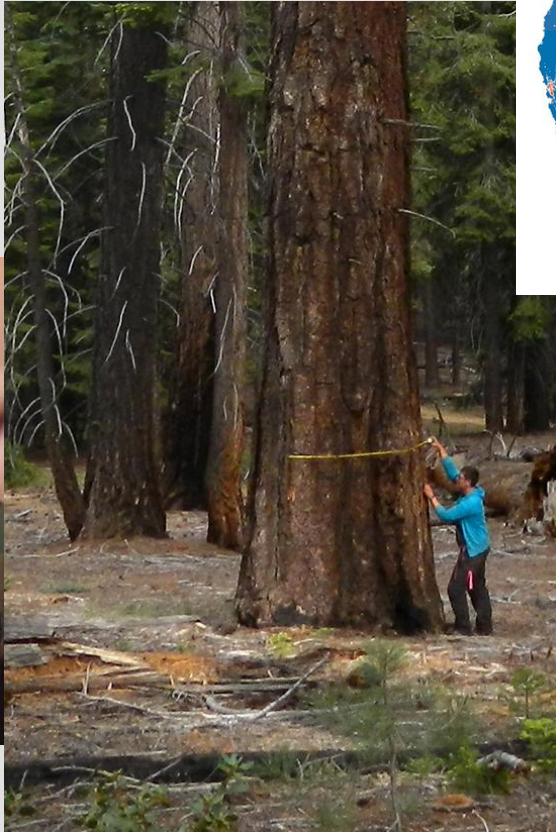
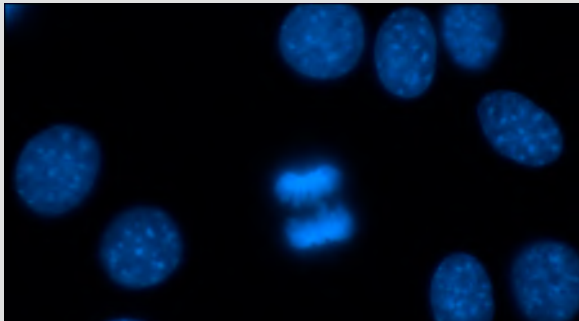


□ Nutritional Sciences & Toxicology



What Makes a CNR Researcher Unique?

- Environmental science, at all scales



M E S A

What Makes a CNR Researcher Unique?

- Interdisciplinary research
 - ▣ Integrate information from two or more disciplines
 - ▣ Understanding perspectives outside your field, makes you a better researcher with unique perspectives

What is a Social Scientist?

What is a BioScientist?

How are they similar?

How are they different?

What Makes a CNR Researcher Unique?

- Cutting edge technologies and resources at your fingertips



What Makes a CNR Researcher Unique?

- Cutting edge technologies and resources at your fingertips



**Monday
Lab Tours**

9:15am
10:15am



What Makes a CNR Researcher Unique?

- Consistently top-ranked Environmental Science program

The screenshot shows the US News & World Report Education website. The main heading is "Best Global Universities for Environment/Ecology". Below the heading, there is a paragraph describing the field of environment and ecology. To the right of the text is a small circular award logo for "BEST GLOBAL UNIVERSITIES 2018" by US News & World Report. Below the text is a link to "See the methodology". At the bottom, there is a "Rankings Search" section with a search bar and a "Region" dropdown menu. The search results show "Showing 1-10 of 200 schools sorted by Subject Rank". The top result is "#1 University of California--Berkeley" with a "100 Subject Score".

#1 **University of California--Berkeley**
 United States Berkeley, CA



What Makes a CNR Researcher Unique?

- Consistently top-ranked Environmental Science program

How do they decide on these rankings?

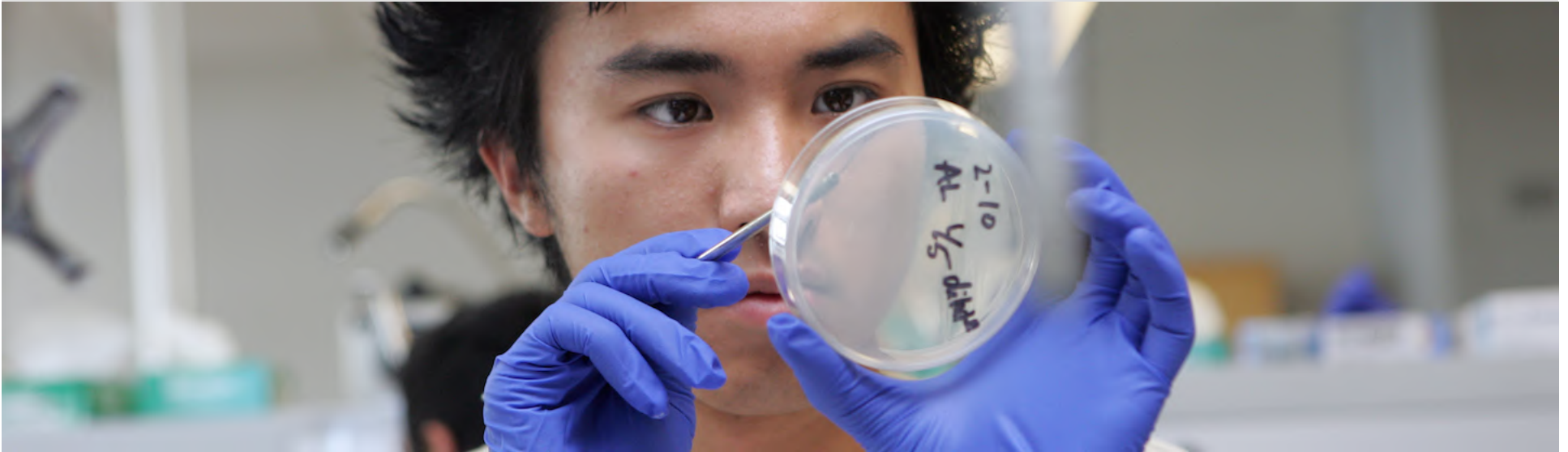
#1

University of California--Berkeley

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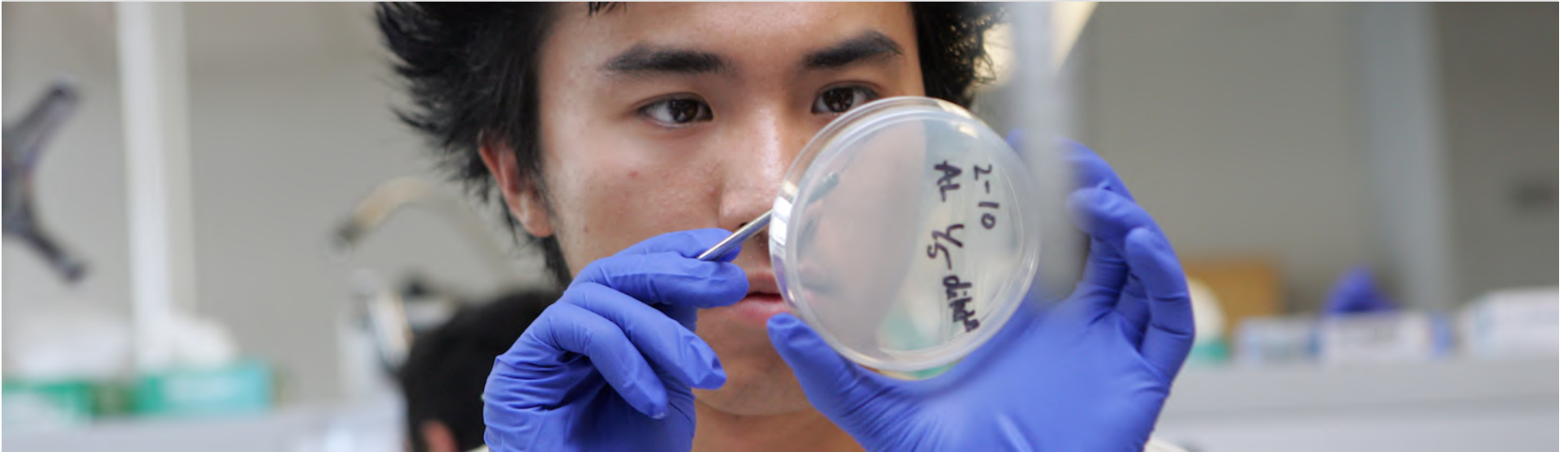


Develop Research Skills



What does it mean to do research as
an undergraduate?

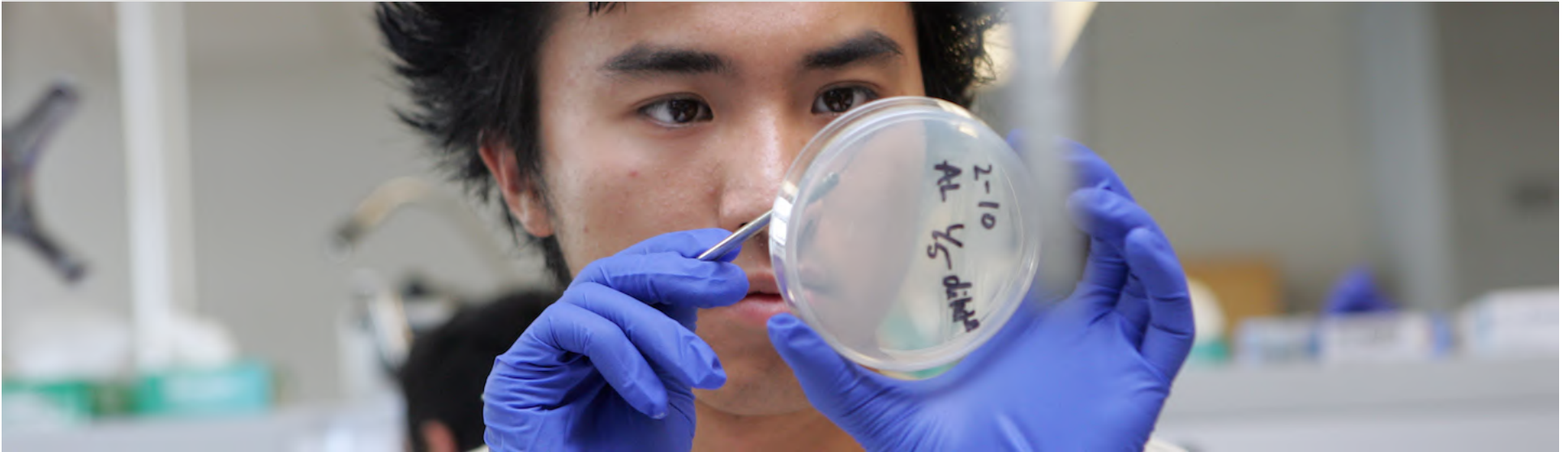
How To Develop Research Skills



□ Research Opportunities

- ▣ SPUR: Sponsored Projects for Undergraduate Research (CNR)
- ▣ URAP: Undergraduate Research Apprenticeship Program (Berkeley)
- ▣ Volunteer

How To Develop Research Skills



- Step 1: Find a lab
 - ▣ Based on what you would like to do

How To Find a Research Lab

- Look for faculty who study something of interest to you:
 - vcresearch.berkeley.edu/faculty-expertise
 - “agriculture”

NAME	EXPERTISE	DEPARTMENT
Miguel Altieri	agriculture, environmental science, pest management	Environmental Science, Policy & Management
Barbara Baker	biochemistry, genetics, signal transduction, plant and microbial biology, biomolecular mechanisms of plant resistance to microbial disease, plant pathogen recognition, plant resistance to pathogen diseases, tobacco mosaic virus, agriculture and crops	Department of Plant and Microbial Biology
Roger Byrne	historical biogeography, vegetation change, prehistoric agriculture, pollen analysis, history of late-Pleistocene/Holocene environment, fossil pollen	Department of Geography
Ignacio Chapela	agriculture, biotechnology, environmental science, microbial biology, policy and management	Department of Environmental Science, Policy & Management
Kathryn De Master	agriculture, environment, rural conservation and development, agri-food systems, sociology and political ecology of agriculture	Department of Environmental Science, Policy & Management
Paul L. Gersper	agriculture, soils, forestry, ecosystem science	College of Natural Resources, Department of Environmental Science, Policy

How To Find a Research Lab

- Look for faculty who study something of interest to you:
 - ▣ SPUR Faculty Initiated Projects

Green Infrastructure in Rising Megacities

Jonas Meckling

Mapping Cannabis in Northern California

Van Butsic

Automated classification of vocalization of Sierra Foothills birds

Steven R. BEISSINGER,
PhD

Beach Flies of Hawaii

Neil Tsutsui

The Anthropocene and the Humanities

Carolyn MERCHANT

Health Effects of Pollution in India

Aprajit Mahajan

Fifty shades of prey: What information do jumping spiders need to catch their food?

Damian Elias

Engineering bs5 disease resistance in tomato

Brian Staskawicz

Landscape genetics of California amphibians and reptiles

Ian Wang

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Undergraduate's Role:

The undergraduates will assist me (Benji Kessler) in analyzing videos of behavioral data. This will involve watching videos and marking which specific behaviors occurred when. The students will receive mentorship in the use of the software designed to collect these data, as well as the statistical methods used to analyze it.

Undergraduate's Qualifications:

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Undergraduate's Qualifications:

What are the top qualifications needed to participate in undergraduate research?

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Undergraduate's Qualifications:

Undergraduates should be dependable, independent, and enthusiastic. An interest in watching spiders eat things is a must.

Dependable

Independent

Enthusiastic

What are the top qualifications needed to participate in undergraduate research?

Scientific Literacy

Berkeley News

Research ▾

People ▾

Campus & community ▾

Arts & culture ▾

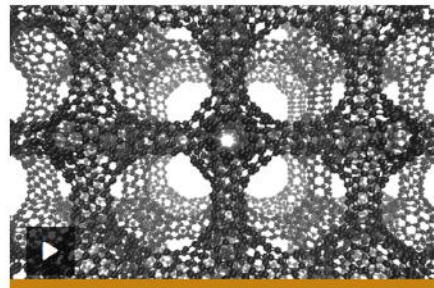
Opinion ▾

Press release



Poor sleep triggers viral loneliness and social...

August 14, 2018



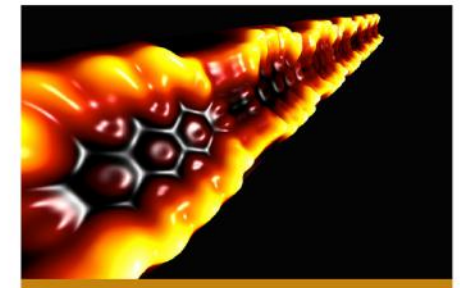
New form of carbon a diamond in the rough

August 13, 2018



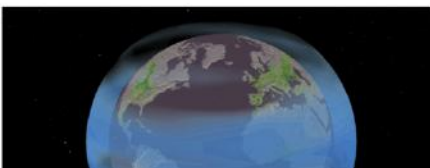
Environmental regulations drove steep...

August 9, 2018



Tying electrons down with nanoribbons

August 8, 2018



<http://news.berkeley.edu/topics/press-release/>

Scientific Literacy

<http://news.berkeley.edu/topics/press-release/>

RESEARCH, SCIENCE & ENVIRONMENT

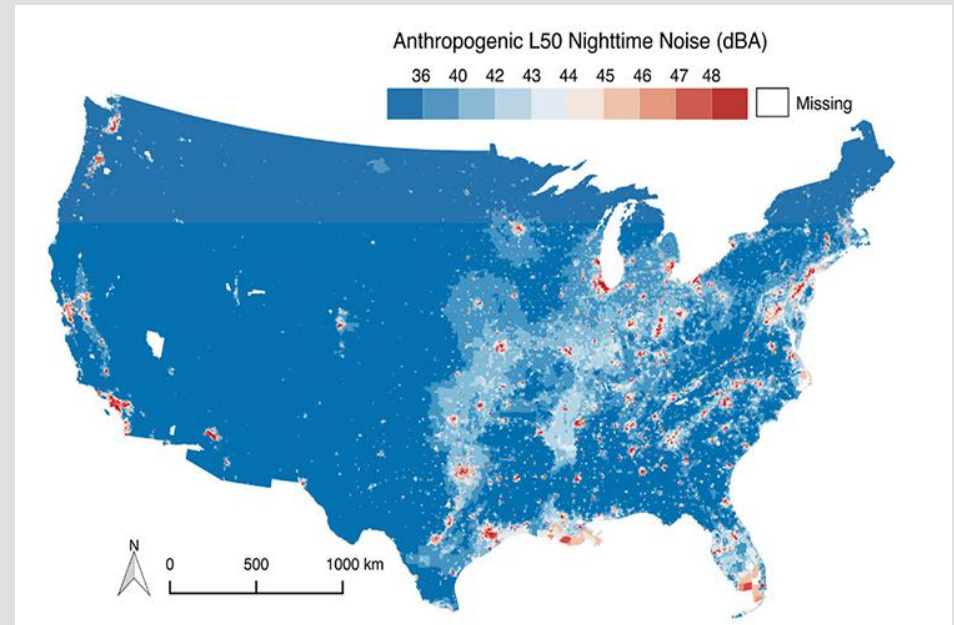
Noise pollution loudest in black neighborhoods, segregated cities



Rachel
Morello-Frosch

stressor usually generated by mechanized sources: conditioning—to hearing loss and other health outcomes activation of the central nervous system, even while blood pressure, heart rate, and cardiac output (Evans et al. 2001). The World Health Organization (WHO) estimated a “no weighted decibels (dBA) based on evidence that sleep is highway Administration noise abatement criteria near health, communication, and economic interests (U.S. Environmental Protection Agency 2001). Noise has impaired cognitive performance (Clark et al. 2012) and hypertension (van Kempen and Babisch 2012), type 2 diabetes (Gehring et al. 2012), and reduced birth weight (Gehring et al. 2014). 100,000 people are lost annually in Western Europe due to noise disturbance. The WHO calculation was based on evidence between noise and health outcomes.

is a logarithmic quantity expressed in decibels (dB); for every 5.5-dB increase, the proportion of individuals highly affected by noise doubles (WHO 2003). Measurements of sound pressure level are commonly adjusted by A-weighting to reflect how humans perceive sound across frequency, denoted as dBA (Murphy and King 2014). Because sound levels vary over time, metrics describing the statistical behavior of the variation are utilized. The energy average, or equivalent, indicator is abbreviated L_{eq} . Multiple exceedance levels are used to characterize magnitude, rate of occurrence, and duration of environmental noise. The L_{50} is the noise level exceeded half of the time, whereas the L_{10} is the level exceeded 10% of the time.



Scientific Literacy

[http://news.berkeley.edu/
topics/press-release/](http://news.berkeley.edu/topics/press-release/)

RESEARCH, SCIENCE & ENVIRONMENT

Study refutes findings behind challenge to Sierra Nevada forest restoration



John Battles



Carrie Levine
Graduate Student

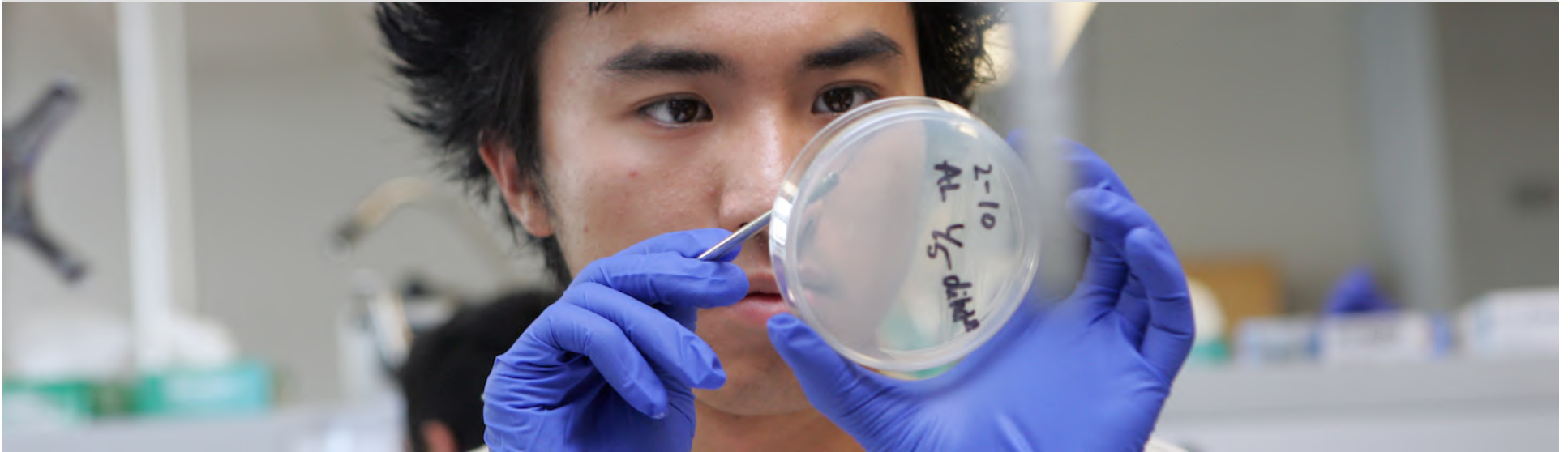
Abstract

Historical forest conditions are often used because historical forests are considered. General Land Office (GLO) surveys of the regionally quasi-contiguous data sets

exist in California. The accuracy of the data in the GLO surveys was evaluated using a new method. The study found that the GLO estimates for the GLO sampling scheme ranged from 0.36 to 1.2-3.8 times larger than the true densities and performed poorly. The Delincé approach obtained accurate estimates for 100 yr. The Voronoi approach is theoretically sound but that its use was limited. The misapplication was attributed to two causes: (1) the Voronoi approach that does not correct for the number of trees sampled and (2) the Delincé approach that does not correct for the number of trees sampled and the error of the true VA due to a weak relationship between tree size



How To Find a Research Lab



- Step 1: Find a lab
 - ▣ Based on which professors you take classes with

Interacting with Faculty



Claire Kremen



Daniel K. Nomura



Justin Brashares

How would you start a conversation with one of these professors?

Where?

What do you say?

Interacting with Faculty



Claire Kremen



Daniel K. Nomura



Justin Brashares

- How do you approach faculty?
- How do you talk with an expert?
- My grades are fine, why would I talk with my professors?

Interacting with Faculty

Search online

Brashares Group

UC Berkeley

Home

People

Research

Research Sites

Publications

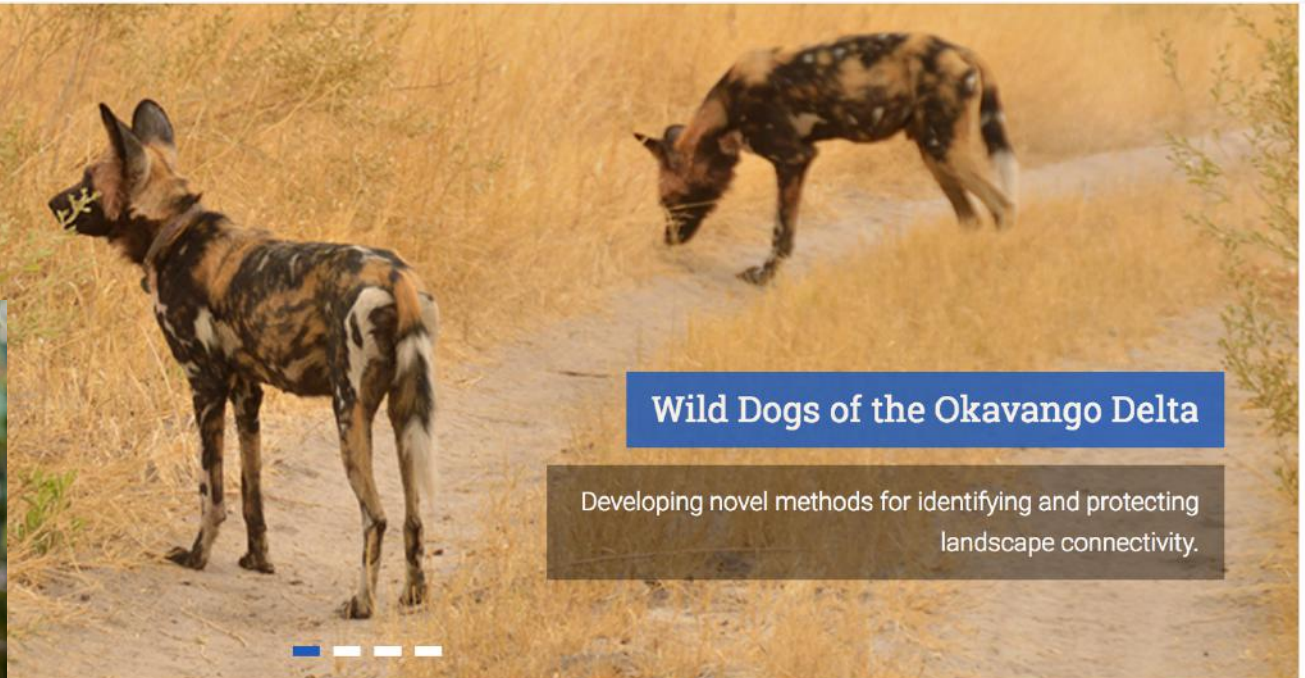
Group News

Donate

Contact Us



Justin Brashares



Wild Dogs of the Okavango Delta

Developing novel methods for identifying and protecting landscape connectivity.

Interacting with Faculty

Search online

Kendall Calhoun

Ph.D. Student



Kaitlyn Gaynor

Ph.D. Candidate



Dave Kurz

Ph.D. Candidate



Alex McInturff

Ph.D. Candidate



Tristan Nuñez

Ph.D. Candidate



Phoebe Parker-Shames

Ph.D. Student



Amy Van Scoyoc

Ph.D. Student



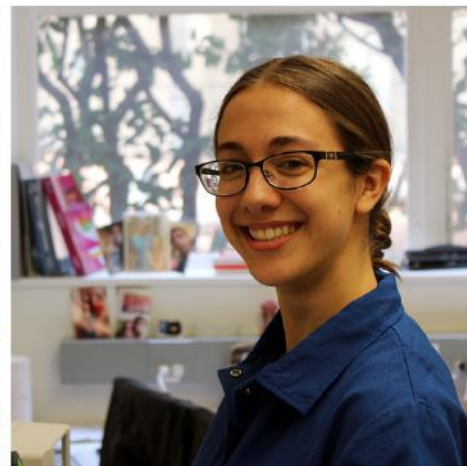
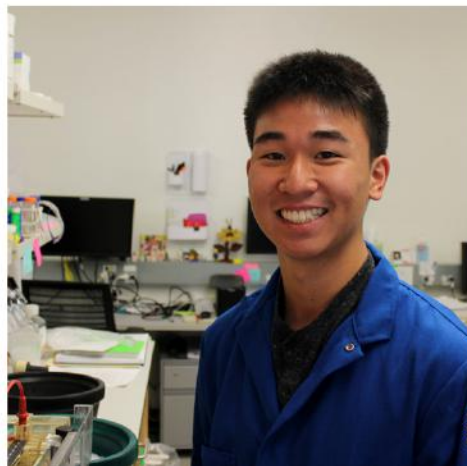
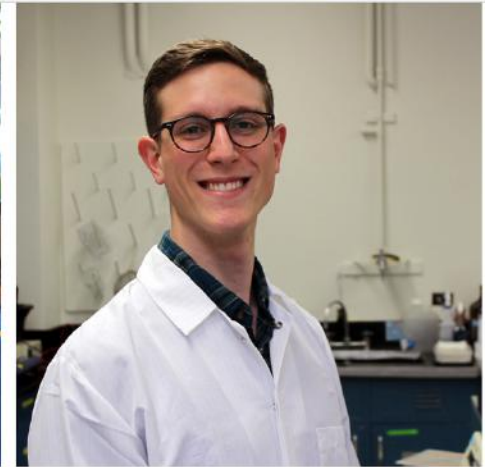
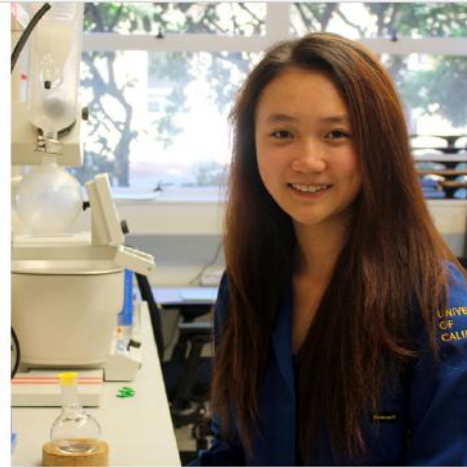
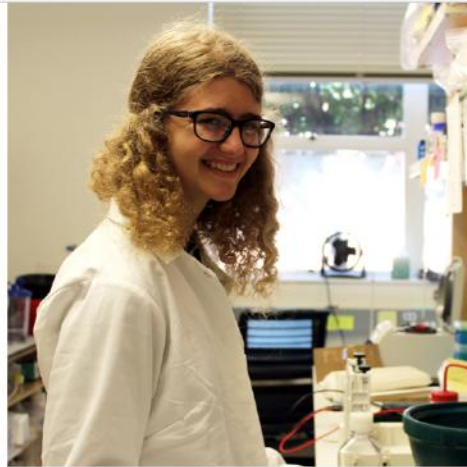
Lauren Withey

Ph.D. Candidate



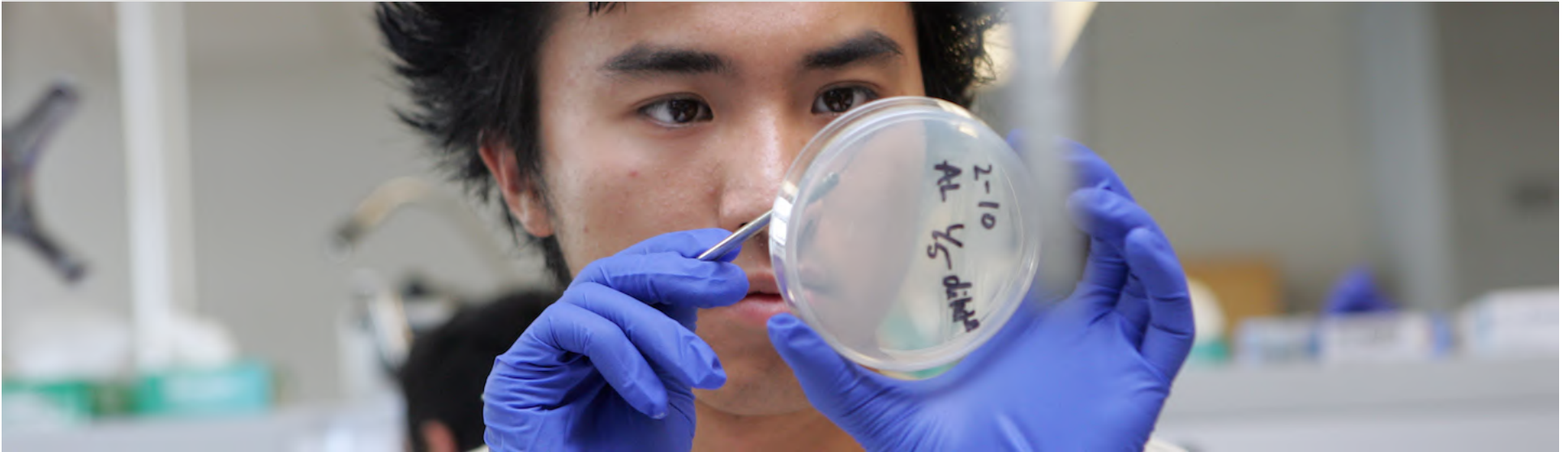
Interacting with Faculty

Search online



Undergraduate Researchers

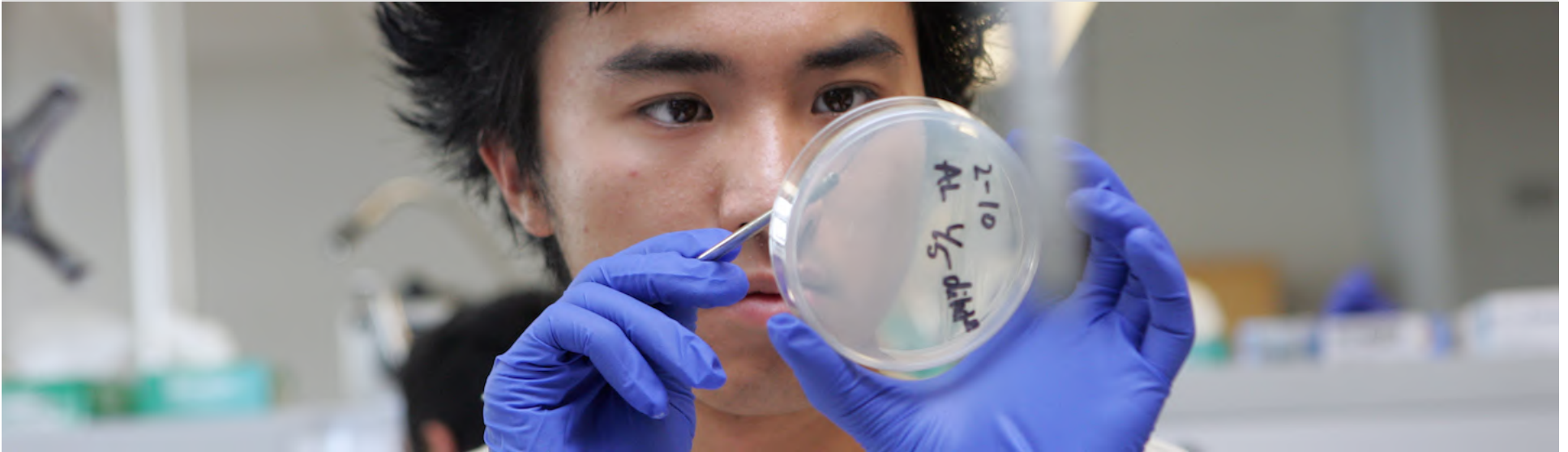
Develop Research Skills



- Step 2: Email faculty & graduate students
 - ▣ Faculty appreciate when students take the initiative

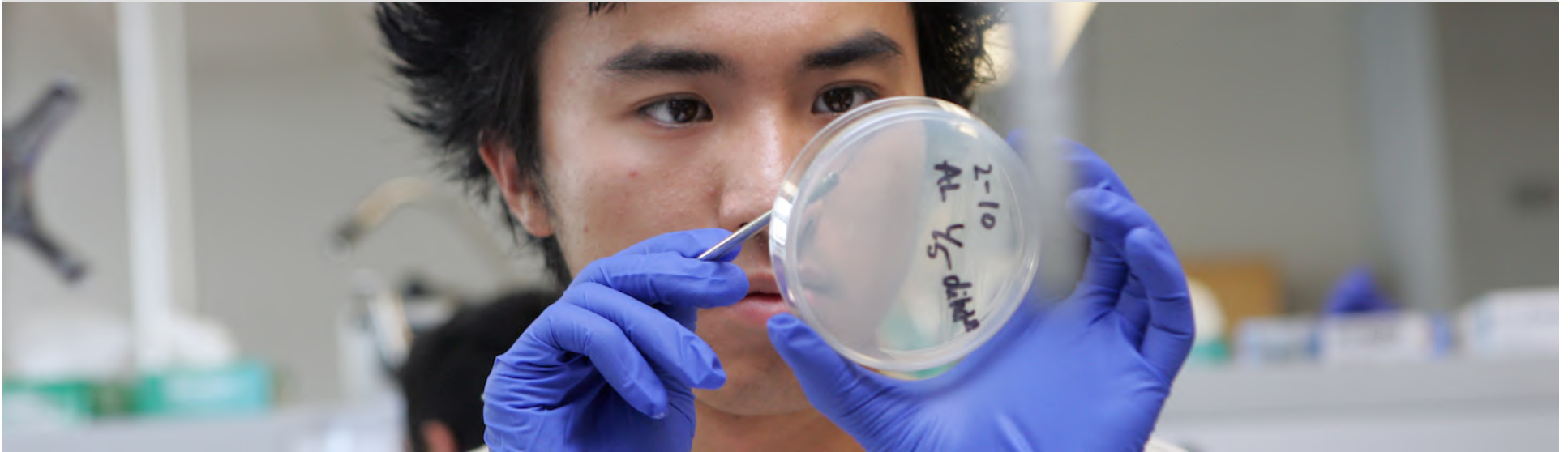
What SHOULD YOU include in an email?
What SHOULD YOU NOT include in an email?

Develop Research Skills



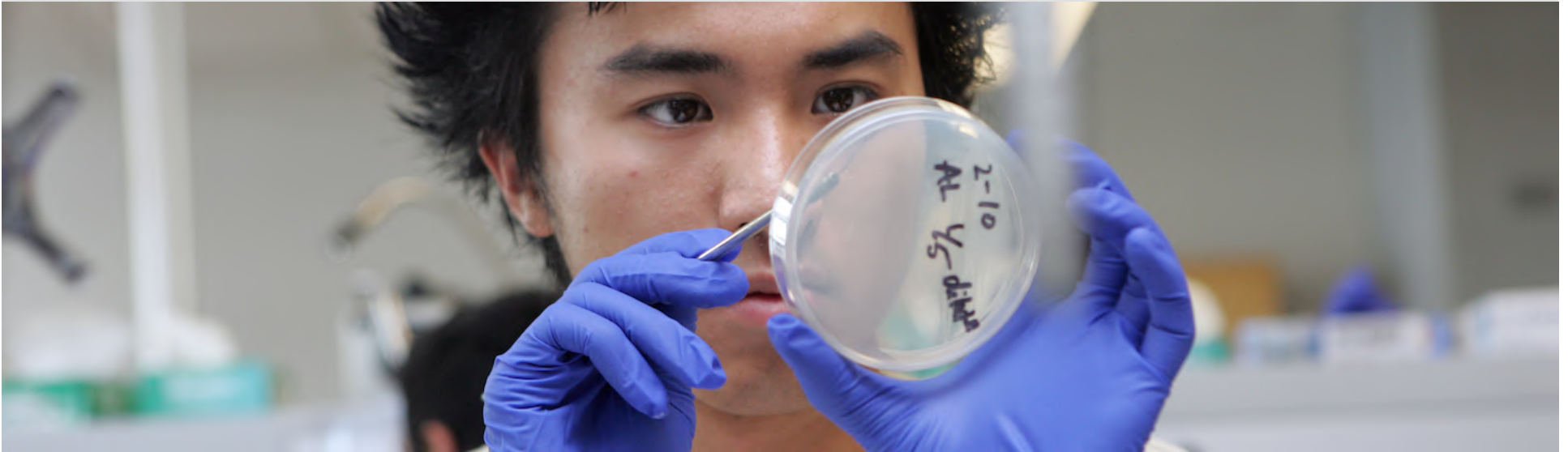
- Step 2: Email faculty & graduate students
 - ▣ Faculty appreciate when students take the initiative
 - ▣ Discuss your background, interests, and what is interesting about the particular lab – but get to the point quickly!
 - ▣ Generic letters will be ignored

Develop Research Skills



- Step 3: Be persistent
 - ▣ Even the best emails frequently receive no reply
 - ▣ Email a graduate student or postdoc in the lab
 - ▣ Email the faculty member again
 - ▣ Visit their office hours

Develop Research Skills



- Get involved with research early
- Ask questions, show interest
- Research can be very different between faculty members

Career Exploration



- What questions or methods are most interesting to you?
- What careers are available?
 - ▣ Further degrees (MS, PhD, MD)
- Letters of recommendation

What Makes a CNR Researcher Unique?

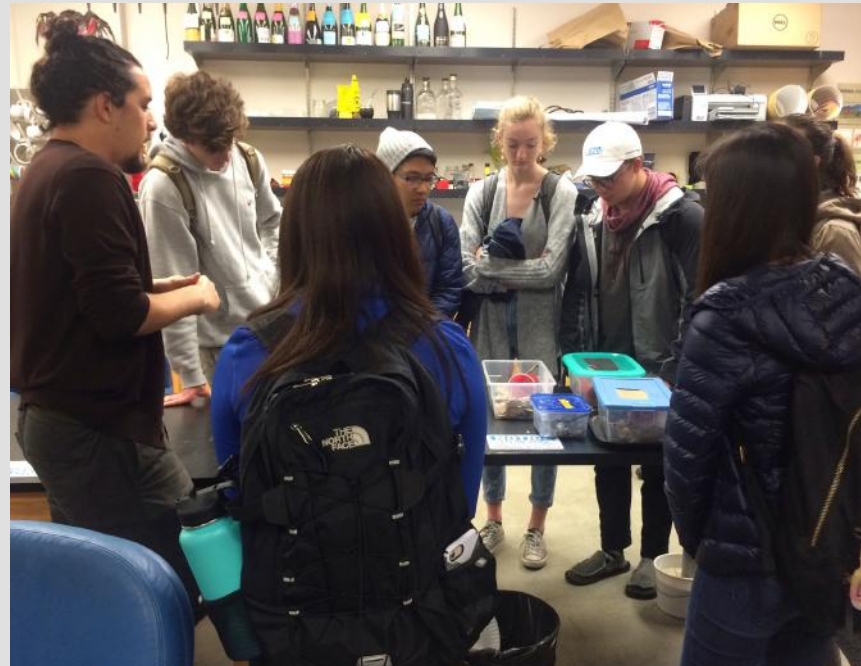
- Strong Mentorship
 - ▣ Professors (classroom/research)
 - ▣ Graduate Students
 - Graduate Student Instructors (GSIs)
 - Research Supervisors
- Mentorship programs
 - ▣ Berkeley Connect (ESPM)
- Freshmen Seminars
 - ▣ How To Be a CNR Scientist



What Makes a CNR Researcher Unique?

- Freshmen Seminars

- ▣ How To Be a CNR Scientist, NatRes 24, 002



What Makes a CNR Researcher Unique?

□ Networking



Your First CNR Challenge

- Talk with a CNR faculty member this week
 - ▣ Ask one question



Welcome to CNR



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