



# **College of Biological Sciences (CBS) First-Year Orientation**

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**We know you worked hard to join CBS.**

## SUCCEEDING REQUIRES PASSION

- Passion for the subjects you study will carry you through the difficulty of higher academics.
- The “right” major is the one you gladly spend time studying.

# CBS Majors

**CBS Majors differ in what they ask questions about and in the way in which they ask questions.**

- **Are you more interested in molecules, cells, organisms, or ecosystems?**
- **Do you prefer “how” questions or “why” questions?**
- **What sort of research problems do you find interesting?**

**Basically, you are choosing a model system for learning how to think. Therefore, you should choose a system that you find fascinating.**

# Special Note for students interested in one of the many Health Professions

- All majors in CBS are considered “pre-med” and “pre-health profession” majors;
- Medical schools are increasingly interested in students having a broad outlook;
  - Therefore, select a major where you will succeed. One of our smaller majors such as Plant Biology & Evolution or Ecology and Biodiversity may be ideal choices for you;
- Medical schools are increasingly interested in students having a broad outlook;
  - You might also consider getting a BA rather than BS degree
- Health Profession Advising would be a great place to discuss your options.

# College of Biological Sciences Quick Facts

47% of CBS undergraduates participated in research and 71% in an internship (2017-18)

**Values**  
Scientific innovation and discovery  
Highest standards of excellence in:  
Teaching  
Research  
Community Involvement

Over 40,000 alumni

9 Majors and  
7 Minors

2 Degree  
Options: A.B. and  
B.S.

5 Departments

# CBS has 9 majors for a BS degree and 4 for a BA\*

	Majors
<b>EVE</b>	Evolution, Ecology and Biodiversity ( <b>EEB</b> ) BS or B
<b>MCB</b>	Biochemistry and Molecular Biology ( <b>BMB</b> ) Cell Biology ( <b>CBI</b> ) Genetics and Genomics ( <b>GGN</b> )
<b>MMG</b>	Microbiology ( <b>MIC</b> ) BS or BA
<b>NPB</b>	Neurobiology Physiology and Behavior ( <b>NPB</b> )
<b>PLB</b>	Plant Biology ( <b>PLB</b> ) BS or BA
	Biological Sciences ( <b>BIS</b> ) BS or BA
	Marine and Coastal Sciences ( <b>MCS</b> ) is a CROSS-COLLEGE major where CBS hosts one track called <b>Marine Ecology and Organismal Biology</b>

\*The B.A. has a foreign language requirement, the B.S. does not.

# College of Biological Sciences (CBS) Degree Requirements Structure

There's more to your  
degree than major  
requirements!



**Total Units:  
180**

**15 units on  
average  
needed each  
quarter to  
total 180 units**

**How do I figure out what courses to take?  
Talk to your BASC advisor.**

# Lower Division CBS STEM Core

## Freshmen/Sophomores

- Biological Sciences (BIS) 2A, 2B, 2C
- Chemistry (CHE) 2A, 2B, 2C
- Mathematics (MAT) 17A, 17B, 17C or  
(MAT) 21A, 21B,
- Physics (PHY) 7A, 7B, 7C

You should plan to:

- complete these requirements by the end of your sophomore year. (~2 STEM/quarter).
- take an average of 15 units every quarter.

# Lower division curriculum notes: What courses should I start with?

- The answer depends on your placement exam scores.

## **TRUST THE PLACEMENT TESTS!**

- The placement exams are designed to make sure that you do well in your first classes in Chemistry, English, and Math at UC Davis.
- These are foundational classes and you need this knowledge to be successful.
- Therefore, if your advisor recommends workload classes in a specific discipline, take this extra prep.

# Lower division curriculum notes: What courses should I start with?

The answer depends on your major and your placement exam scores. It also depends on the availability of seats in a particular class.

**DON'T WORRY! Your BASC advisor will help you create a schedule that will keep you on track.**

## ➤ **Special Note about Math**

- **All majors in CBS require Math 17 ABC**
- Math 21 is a good alternative for students interested in more advanced math or the physical sciences (bioinformatics, computer science, biophysics, structural biology, engineering).
- *Caution! Math 21 is NOT a good alternative for most students if Math 17 is full.*

# Lower division curriculum notes: What courses should I start with?

## SUGGESTED STEM COURSES BY MAJOR.

- Students in **BMB, CBI, GGN, NPM & ULS** majors:
  - Take Mathematics and Chemistry in their your quarter, and add a 3<sup>rd</sup> science class (add Biology 2) by the end of the first year (winter or spring). Start Physics in Sophomore year.
- Students in **BIS, EEB, MCS, MIC, & PLB** majors:
  - Take Biology and Chemistry in your first quarter, and add a 3<sup>rd</sup> science class (Math) by the end of the first year. Start Physics in Sophomore year.
- Another option for any CBS major:
  - Take Mathematics and Biology in your first quarter, and add a 3<sup>rd</sup> science class (add Chemistry 2) by the end of the first year (winter or spring). Start Physics in your sophomore year.

# Lower division curriculum notes: Which BIS 2 course is first in the series?

- ▶ It depends on you and your interests. Neither BIS 2A nor BIS 2B has a prerequisite.
  - ▶ Starting with BIS 2B will be a good plan for many students.
  - ▶ You take BIS 2B, then BIS 2C, and finish with BIS 2A as a good lead-in to BIS 101.
- ▶ Starting with BIS 2A only works for “CHE 2A ready” students.
  - ▶ Students will need a good high school chemistry class to know the chemistry required in BIS2A.
  - ▶ Do you understand the difference between carbon and oxygen? What is the difference between a covalent bond and a hydrogen bond? What does pH mean? What is an electron? By lecture 5, can they recognize a molecule as a protein, a lipid, a sugar, or a nucleic acid after we have explained the distinguishing features of these molecules?

# Fall 2019 Scheduling Preparation: What types of courses should I take?

## PLAN A

Major Course

Major Course

GE

- If ELWR is not satisfied, ELWR course; If satisfied, Lower Division Composition or GE

BIS 5 or First Year

Seminar

APPROX. UNITS: 15

## PLAN B

Major Course

GE

GE

- If ELWR is not satisfied, ELWR course; If satisfied, Lower Division Composition or GE

BIS 5 or First Year

Seminar

APPROX. UNITS: 15

## PLAN C

GE

GE

GE

- If ELWR is not satisfied, ELWR course; If satisfied, Lower Division Composition or GE

Non-Major or GE

BIS 5 or First Year

Seminar

APPROX. UNITS: 15

**General Education Classes:** CBS students are encourage to select their GE classes based on interest and should sample broadly. There are many good choices, including music, dance, art history, languages, and studies of other cultures. What should the person you want to become know about?

# You can also select your general education courses based on your future career goals.

- ▶ Many CBS students interested in the health care professions have found the following classes helpful.
  - ▶ **Classics 30** explains the Greek and Latin roots of language and incorporates a lot of biological terms.
  - ▶ **Philosophy 31** introduces students to scientific reasoning and analysis, useful for exams such as the MCAT (other good choices are PHI 5 or 12).
  - ▶ **History 2/STS 2** is “Introduction to the History of Science and Technology.” The course has a strong critical reasoning component, useful for exams such as the MCAT.
  - ▶ **Philosophy 15** introduces students to Bioethics.

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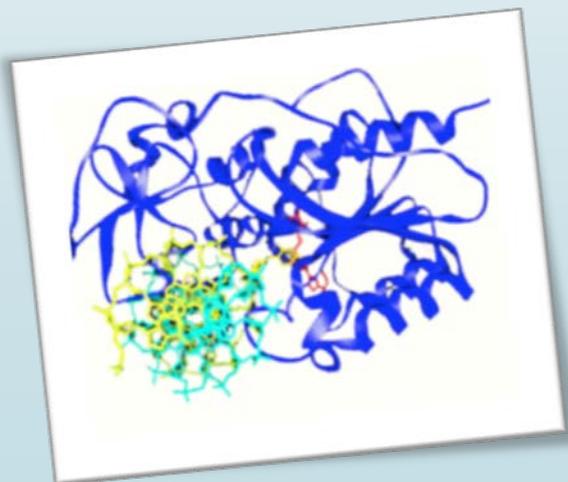
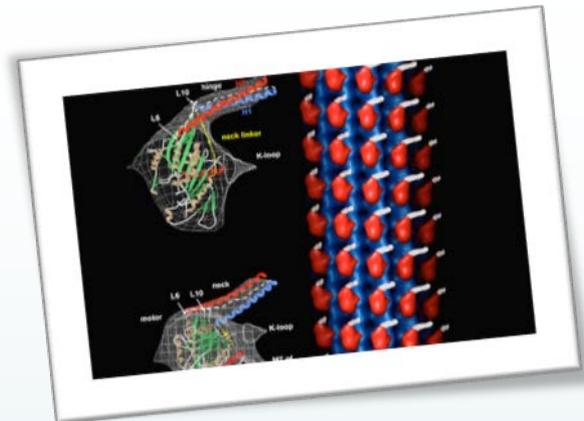
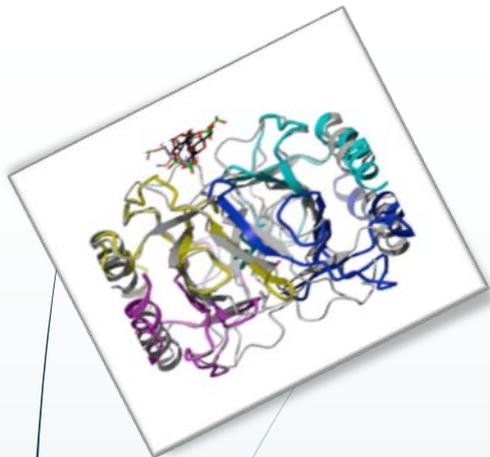
# Evolution, Ecology & Biodiversity (EEB)

Understanding global biodiversity— from the evolution of genomes to the behavior of species and the functioning of communities across the Tree of Life



- Broad and balanced exposure to biology
- Understanding the diversity and distribution of living organisms
- Application of ecology and evolution to all life sciences, including disease
- Darwinian Medicine class

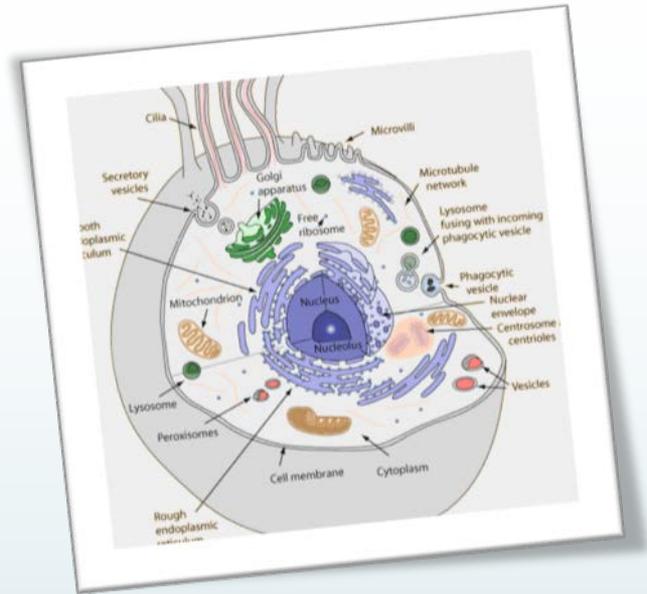
# Biochemistry and Molecular Biology (BMB)



- ◆ Introduces students to the chemistry of living organisms
- ◆ Training in the experimental techniques that are used to probe the structures and functions of biologically important molecules
- ◆ Students who enjoy both chemistry and biology and who are comfortable with quantitative approaches to problem solving will find this major a rewarding field of study

# Cell Biology (CBI)

All complex biological phenomena have their root in mechanisms that operate at the cellular level



Studies in cell biology ask questions such as:

- How does a cell divide and communicate with other cells?
- Why do some cells become cancers?
- How do cells age and die?
- What are stem cells and what are their magical properties?
- How do cells become infected with viruses e.g. HIV?



*C. elegans*

# Genetics and Genomics (GGN)

Study of genes, hereditary, and variation in a wide range of model systems



*A. thaliana*



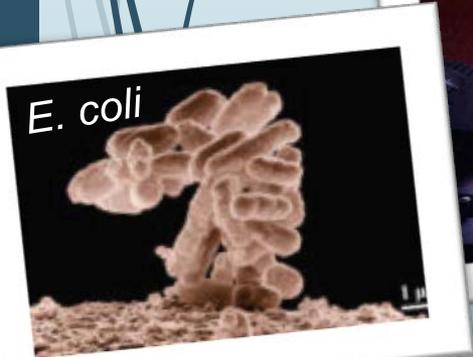
*S. cerevisiae*



*D. melanogaster*



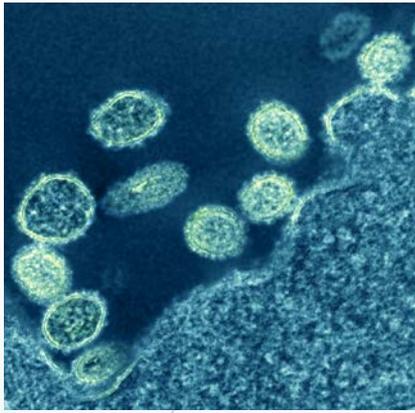
*H. sapiens*



*E. coli*



*M. musculus*



**Microbiology (MIC)**  
Microbes are the most abundant (and ancient)  
organisms on earth -  
many are pathogens....but most are not

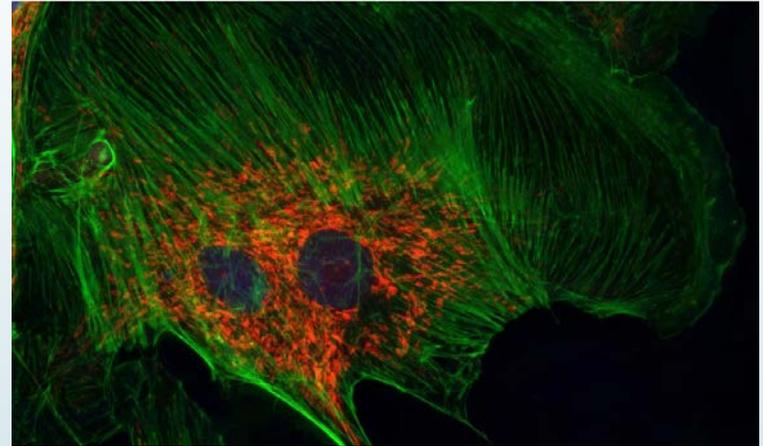


- Microbiology majors learn about the microbial world and the interactions of microbes and their environment.
- Microbiology is great training for medical fields since many diseases are caused by microorganisms.



# **Neurobiology, Physiology & Behavior (NPB)**

Understand vital functions common to all animals



Students in this major will study functional mechanisms, as well as the control, regulation, integration, and behavior that relate to these mechanisms at the level of the cell, organ system, and organism.

# Plant Biology (PLB)

Plants influence all aspects of life on earth.

Learn how the internal timer/circadian clock allows plants and humans to regulate their physiology.



Revealing organismal differences by analyzing DNA sequences, chromosomes, and gene expression!

- Guaranteed research opportunities
- Hands-on experience in modern life science research
- Designated scholarships
- Contributions to human health and environmental stewardship



# Biological Sciences (BIS)

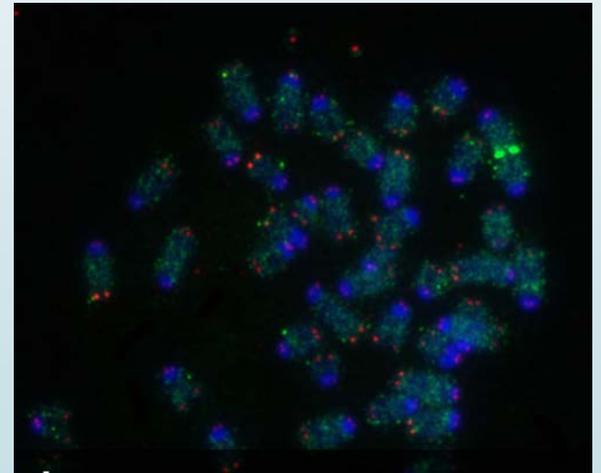
This is our broad cross-college major.



Biology is a good foundation for any career, so don't forget about environmental law or science writing, in addition to more traditional paths.

## **BIS Major:**

Students complete a broad set of preparatory courses and select one or more areas to focus on for their upper division specialization.





# Marine and Coastal Sciences (MCS)

marine ecology and organismal biology track

Study the ecology and organismal biology of the marine environment. Delve into the physiological adaptations of organisms and the biology of marine species from the molecular to population levels.

Field work is a key component of this track.



# SUCCEEDING REQUIRES PASSION

*Take the time to explore the different CBS majors*

“Don't ask yourself what the world needs. Ask yourself what makes you come alive and then go do that. Because what the world needs is people who have come alive.”

- Dr. Howard Thurman

# Next up: Students resources to help you with the transition to UCD



<https://www.davisenterprise.com/files/2014/02/gunrock-bikeW.jpg>

# BASC is your best resource for success in CBS

UC DAVIS



## Biology Academic Success Center

College of Biological Sciences

Quick Links >

ACADEMIC ADVISING >

MAJORS AND MINORS >

STUDENT RESOURCES >

ABOUT US >



### Academic Advising

Meet with an experienced academic or peer advisor

→ **Scheduled or Drop-in Advising**



### Majors and Minors

Learn about undergraduate degree programs in the College of Biological Sciences

→ **Major and Minor Specific Information**



### Student Resources

Resources to help you navigate your time at UC Davis

→ **Explore student support resources**

# There is **one** location for CBS advising: **BASC**

All staff and peer advising takes place in the Biology Academic Success Center (BASC) in Sciences Lab Building, around the corner from the BioBrew Coffee Shop.

Students are called to mandatory advising in the fall/winter.

Faculty Master Advisors are associated with each major and can be visited in their departments.



**A BASC advisor will help you structure a schedule that works for you and your goals**



# How can advising help me?

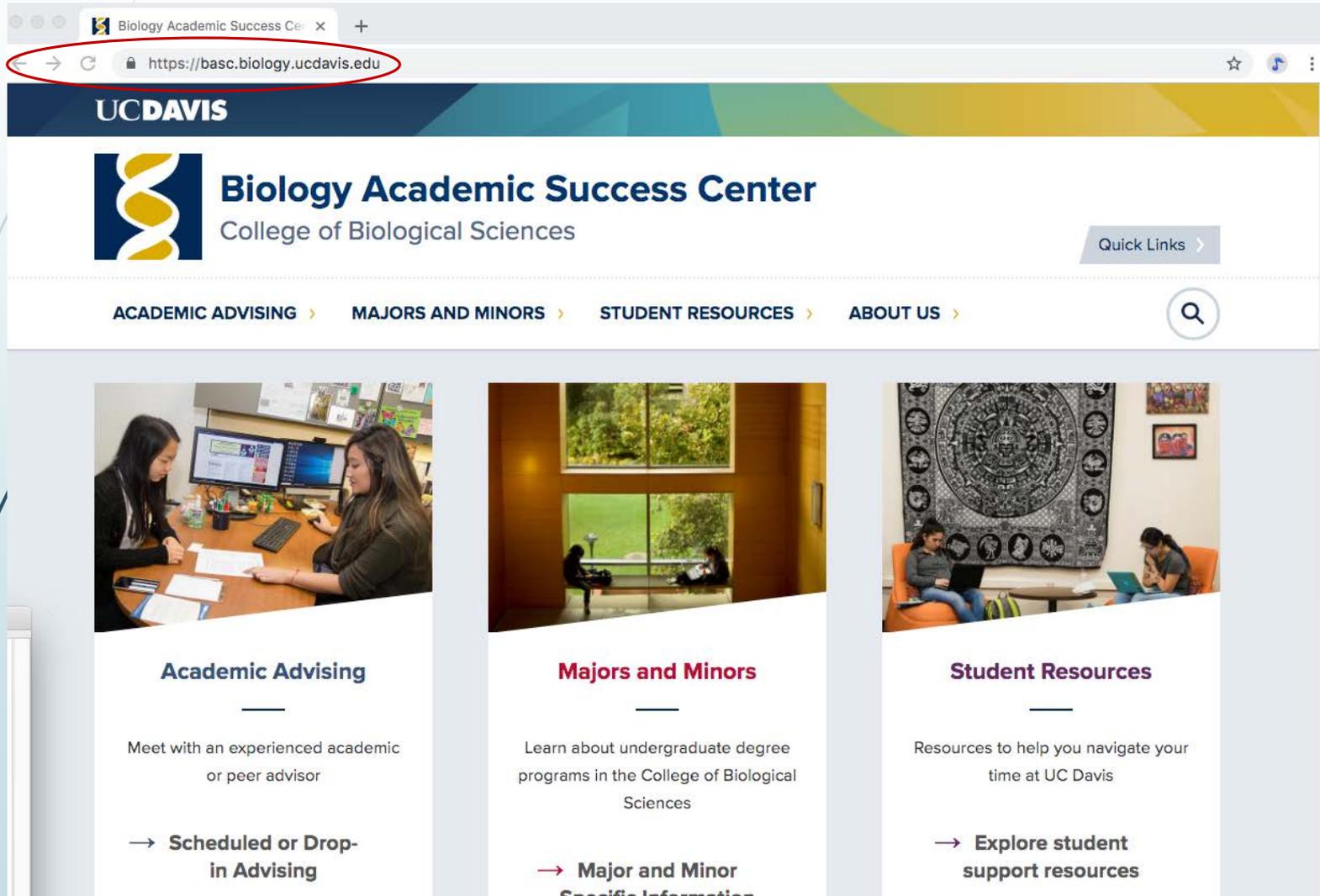
## Staff advisors at BASC help you in many ways:

- Check in with you and your transition during Mandatory Advising
- Provide academic advice on particular majors:
  - Assist you in making an academic plan and choosing courses
  - Give advice on changing majors
  - Help you maintain progress toward degrees and GE
- Support you through any academic difficulties:
  - Leave of absence from school
  - Student petitions
  - Special situations
  - Referrals to other campus services

NOTE: Come to the BASC as soon as something is taking a turn in the wrong direction.

**Peer advisors** are available on a drop-in basis anytime the BASC is open; peer advisors are fellow students who have shared your experiences.

# Check out the BASC website for more information on their many programs



The image shows a screenshot of a web browser displaying the Biology Academic Success Center (BASC) website. The browser's address bar shows the URL <https://basc.biology.ucdavis.edu>, which is circled in red. The website header features the UC Davis logo and the text "Biology Academic Success Center" and "College of Biological Sciences". A navigation menu includes "ACADEMIC ADVISING", "MAJORS AND MINORS", "STUDENT RESOURCES", and "ABOUT US". Below the menu are three main content areas, each with a photo and a title: "Academic Advising" (photo of two students at a computer), "Majors and Minors" (photo of two students sitting on a bench by a window), and "Student Resources" (photo of two students sitting on orange chairs in front of a large tapestry).

**UCDAVIS**

**Biology Academic Success Center**  
College of Biological Sciences

Quick Links >

ACADEMIC ADVISING > MAJORS AND MINORS > STUDENT RESOURCES > ABOUT US >

Q

**Academic Advising**

Meet with an experienced academic or peer advisor

→ **Scheduled or Drop-in Advising**

**Majors and Minors**

Learn about undergraduate degree programs in the College of Biological Sciences

→ **Major and Minor Specific Information**

**Student Resources**

Resources to help you navigate your time at UC Davis

→ **Explore student support resources**

# Health Professions Advising

Check out the website: [hpa.ucdavis.edu](http://hpa.ucdavis.edu)

UCDAVIS

**UCDAVIS**  
HEALTH PROFESSIONS ADVISING



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- [HEALTH PROFESSIONS >](#)
- [PRE-HEALTH PROGRAMS >](#)
- [APPLICATION PREP >](#)
- [SUCCESS STORIES >](#)
- [ABOUT US >](#)



Our Mission

# Upcoming Event at HPA



*Health Professions Advising presents:*

**Pre-Med Orientation**

**Saturday , September 28<sup>th</sup>**

**9 am - 1 pm California Hall**

 Health Professions Advising/@ucd\_hpa  [hpa.ucdavis.edu](http://hpa.ucdavis.edu)

 [healthprofessionsadvising@ucdavis.edu](mailto:healthprofessionsadvising@ucdavis.edu)  1090 Orchard Road

# BioLaunch

UC DAVIS COLLEGE OF BIOLOGICAL SCIENCES

UCDAVIS



College of Biological Sciences

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**BioLaunch: First-Year Experience Program**

**New Website:**

Currently under construction for 2019-2020 class

# Bio Launch Mentor Collective

## How does it work?

- You should have received an email from me providing you with a registration link.
- Once you are registered, you will be asked to complete a survey asking about your background, interests, and what you are looking for in a mentor .
- Based on your answers, you will be connected with a CBS students, who has volunteered to help you learn the ropes at UC Davis.



# BIS 005: Exploring Biological Sciences (1) P/NP

- ▶ **Lecture/Discussion class**– 1 hour. This course provides students with perspective on CBS and the resources and opportunities that are available at a major research university like UC Davis.
- ▶ The instructor is Dr. Michele Igo, who is the Associate Dean of the College of Biological Sciences. She will be inviting faculty, researchers, representatives from different campus resources, and other people on campus to talk about the unique opportunities available at UCD.

# First Year Fall Welcome & Research Fair

- **HELD AT THE BEGINNING OF THE FALL QUARTER**
- Meet your **BioLaunch** peers.
- Pick up your **BioLaunch** T-Shirt
- Talk to faculty, post-docs, graduate students, and undergraduates about research opportunities on campus

*You will receive an email with details and RSVP information to help us figure out how much food to order.*



# How Do I Get Involved in Undergraduate Research?

Transform your research ambitions into reality, one step at a time.

<https://biology.ucdavis.edu/undergraduate-research>

# Research and Internship Opportunities

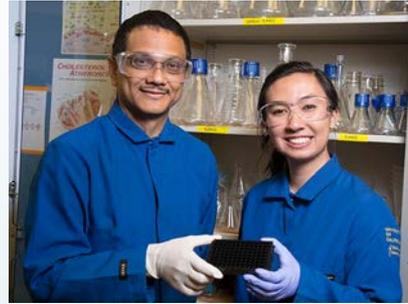
- The current faculty count in the College of Biological Sciences is about 130.
- There are about 700 biologists on campus. They offer a wide range of research opportunities all available to you.
- 90% of our undergraduates in biology do some form of internship or research before they graduate.
- Research is fun and you can highlight your ability to apply knowledge on your resume.

Some students join the author team on a published paper.

**Rewards:** Taste of the field; letter of recommendation(s); expanded skills & contacts.

**Risks:** Time away from studying; balance and time management may be more difficult.

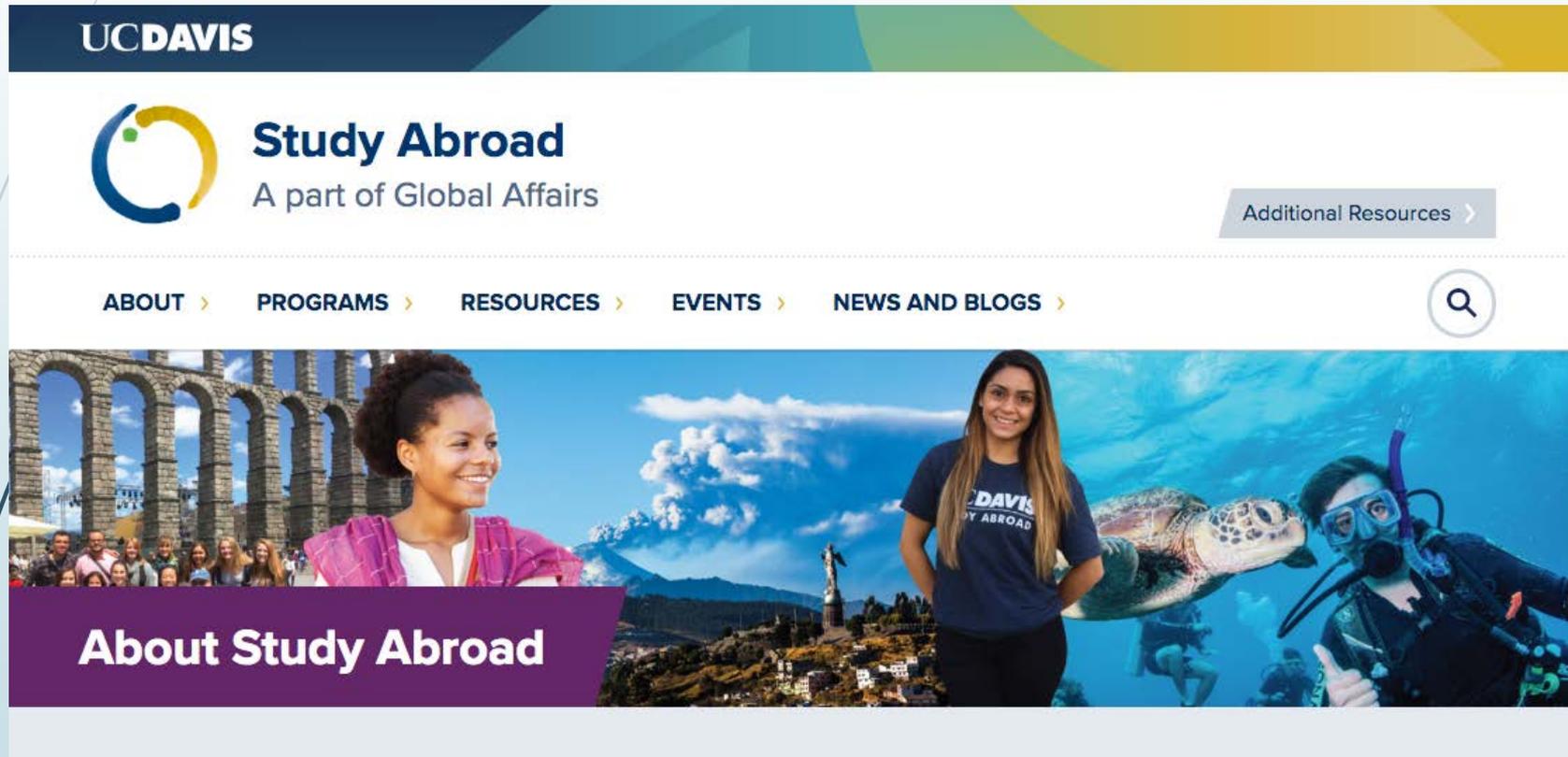
# Research and Internships



- Speak with your BASC advisor
- Talk to your faculty adviser or other faculty
- Do well in a faculty member's class
- Visit the Internship and Career Center (ICC)
- Visit the Undergraduate Research Center (URC)
- Be active and informed in contacting faculty

**You can get  
research (PUF)  
and travel  
grants**

# Check out CBS courses and various internships at Study Abroad



The image shows the top portion of the UC Davis Study Abroad website. At the top left, the UC Davis logo is displayed in white on a dark blue background. Below it, the Study Abroad logo features a stylized circular icon with blue and yellow segments, followed by the text "Study Abroad" in a bold blue font and "A part of Global Affairs" in a smaller grey font. To the right of the logo is a grey button with the text "Additional Resources" and a right-pointing chevron. Below the logo and button is a horizontal navigation menu with the following items: "ABOUT", "PROGRAMS", "RESOURCES", "EVENTS", and "NEWS AND BLOGS", each followed by a right-pointing chevron. A search icon is located on the far right of this menu. The main banner below the navigation features a collage of images: a woman in a pink shawl, a group of people, a woman in a blue "UC DAVIS STUDY ABROAD" t-shirt, a sea turtle, and a scuba diver. A purple banner at the bottom left of the main image contains the text "About Study Abroad" in white.

UC DAVIS

**Study Abroad**  
A part of Global Affairs

Additional Resources >

ABOUT > PROGRAMS > RESOURCES > EVENTS > NEWS AND BLOGS >

Q

**About Study Abroad**

# BIS2A on the Emerald Isle 2019



## Other opportunities:



- **UCD Washington DC Program:** Internship  
e.g. environmental group
- **Marine Biology Lab at Bodega Bay** (spring or summer classes)
- Credit for **internships** is limited to a total of **6 units** that can be used towards graduation.
- Credit for **tutoring** is limited to a total of **3 units** that can be used towards graduation.



**CONGRATULATIONS ON YOUR  
ADMISSION!**

**WELCOME TO THE COLLEGE OF  
BIOLOGICAL SCIENCES!**