A TDP, in addition to its regularly scheduled classes, offers Explorations, optional enrichment opportunities to pursue special hobbies and interests, research career options, and develop new skills.

Explorations are offered either as individual one-day workshops or as a series of multiple weeks. Be sure to check the dates of each session. The sessions are scheduled on Wednesdays, except for H1 Day of Nursing & Medicine, which will take place on a Thursday.

Most SD Explorations will take place on the UC Berkeley campus, including series workshops and the Environment and Human Welfare sessions, which will take advantage of the wealth of museums and labs available. The Health Professions Explorations are held in San Francisco, with chartered bus service from Berkeley.

Read through the descriptions on the following pages. We hope you’ll find topics that capture your interest. And when you do, complete the Enrollment & Consent Form in this Program Guide. Students who qualified for financial aid will be considered for financial aid for Explorations as well.

**Dates**

<table>
<thead>
<tr>
<th>enrollment deadline</th>
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Learn about these topics and more through captivating presentations, stimulating discussions, hands-on activities, and fun experiments. UC Berkeley’s College of Natural Resources is presenting a unique opportunity for you to discover how to use science to understand health issues and the environment. This is a chance to become involved in an interactive experience and to work with and learn from professors and graduate students who are involved in fascinating research in labs and out in the field. We will explore using the amazing wealth of resources on campus. We will get a glimpse of what it takes to be a scientific scholar as we tackle challenging contemporary problems and learn how to find answers and solutions.

Explorations offers five individual sessions, each focusing on a different aspect of environmental health. Enroll in any or all of these sessions and benefit from this intriguing learning experience. Please note the times for each session, as they do vary. Also, bring a lunch or money to buy lunch for the all-day sessions.

The College of Natural Resources (CNR) at UC Berkeley offers undergraduates a wide range of majors and interdisciplinary programs, whether a student’s interests lie in biology, nutrition, environmental sciences, policy, economics, or elsewhere. Students find a small college home in CNR through individualized faculty advising and low student-teacher ratios, while also having access to the vast resources of a large research university such at Berkeley. CNR majors prepare students for graduate work, law school, medical school, and a whole host of careers. Past graduates have stepped into prominent positions and have found meaningful work.

Find out more about the College of Natural Resources and exciting areas of study in the field of science through these Explorations!

The Environment and Human Welfare

- How do you know whether a new fad diet is healthy for you?
- How can tiny microbes be so useful in helping to clean up pollution, or so lethal as to endanger or kill us?
- How do toxins and chemicals affect our health and the health of our communities?
- What are the local ecosystems that shaped the Berkeley campus and what methods do we use to understand the structure and function of those ecosystems?
- What role do humans play in the environment?
- How do we learn about wild animals, and what do we learn from them?

Do you know what mammals and birds live in the Bay Area? In this exploration you’ll learn about natural history and museum science through labs and a field trip studying local species. We will start off by getting an introduction to the various mammals and birds that inhabit the region. Next, we will examine mammal and bird specimens in a lab, studying vertebrate morphology, species identification, and exploring topics in ecology and evolution. Finally, we will then apply what we learn in lab on a field trip, as we observe and identify mammals and birds in their natural habitat in a local reserve, Strawberry Canyon in the Berkeley Hills.

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E1 Wildlife Biology
Mammals & Birds of the Bay Area
June 21, 8:30 - 4:30; June 28, 8:00 - 12:00
For all SD students
fee: $35

Do you know what mammals and birds live in the Bay Area? In this exploration you’ll learn about natural history and museum science through labs and a field trip studying local species. We will start off by getting an introduction to the various mammals and birds that inhabit the region. Next, we will examine mammal and bird specimens in a lab, studying vertebrate morphology, species identification, and exploring topics in ecology and evolution. Finally, we will then apply what we learn in lab on a field trip, as we observe and identify mammals and birds in their natural habitat in a local reserve, Strawberry Canyon in the Berkeley Hills.

E2 Ecosystem Sciences
A Natural History of the Berkeley Campus
June 28
8:30 - 4:30
For all SD students
fee: $25

The Berkeley campus is a fascinating place. We often focus our attention on the architecture and man-made sights, so it is easy to overlook the natural features that are a major component of what shaped this area. In this investigation of ecology, we will study local campus ecosystems, focusing on how Native Americans in the region lived off this land. In the course of our explorations we will learn field techniques that natural resource managers use to assess the ecological condition of these habitats.
Tiny organisms smaller than what the naked eye can see abound all around us. These microbes play an important role and take on various tasks, from pollutant to scrubber, and silent killer to life enabler. Learn more about this microscopic world of wonder as it relates to bacterial pathogens and the human immune system. Peering through microscopes and touring various labs, you will gain a deeper understanding of the vast array of bacteria. We will cover current topics in science such as antibiotic resistance, “good” versus “bad” bacteria in the human body, biowarfare, and biodefense.

Are you really what you eat? What kinds of foods keep your body healthy and strong? What are some diseases directly related to nutrition? In this session, learn about current topics and issues in nutrition which include, but are not limited to, the government’s new food guide pyramid, popular fad diets, and new food technology. We will discuss obesity and Type II diabetes, and what should be done in order to control these epidemics currently sweeping our nation. By conducting an analysis of our own diets and exercise habits, in addition to studying a variety of sample menus and nutrition labels, we will see how we can translate nutritional information to apply to our daily meals.

Bring a lunch, either from home or from a restaurant, and we will begin our discussion using your meal as an example.
Health Professions and You

Have you always wanted a rewarding career that offers you the chance to help individuals and the community, and that provides unlimited job opportunities and growth potential? The University of California San Francisco (UCSF), University of San Francisco (USF), and University of the Pacific (UOP) are offering an invaluable opportunity for you to pave a path for your future and to learn what it takes to become a healthcare professional or researcher in today’s world and in years to come.

This is a chance for you to become involved in an interactive field trip experience where you will work with and learn from some of the health industry’s best doctors, nurses, pharmacists, dentists, researchers, and technicians. You are sure to walk away with a positive experience and newly acquired knowledge.

We are offering two sessions to select from, each dedicated to a different health profession. Register for one or both sessions to get the ultimate exposure and learning experience out of these Explorations.

Students will gather at 8:30 a.m. at the West Crescent on the UC Berkeley campus before boarding a bus, which will provide transportation to UCSF. At the end of the Exploration, the bus will take students back to Berkeley. Those wishing to meet the group in San Francisco must provide prior written notification to the ATDP office. As this Exploration lasts the duration of the day, students will need to bring a bag lunch or money for food. The bus will return to the West Crescent by 4:30 p.m.

Students who wish to participate in the hands-on activities for each of the field trips must submit the signed parental consent forms along with the enrollment form. If a student registers without a consent form, s/he will only be able to observe the demonstrations. Students placed in these Explorations must also sign a HIPAA confidentiality agreement to participate—this form will be included with your placement confirmation.

Be sure to enroll early as these trips have limited space and will fill.

H1 | Day of Nursing & Medicine

June 29 *note this Exploration takes place on Thursday
8:30 - 4:30
Completing Grades 7-9
fee: $60

A joint program offered by UCSF and USF Schools of Nursing
• See the technologies used in medical care
• Work in the Skills Lab with needles, blood pressure monitors, and medical equipment
• Discuss procedures for the Operating Room
• Practice patient care procedures such as inserting needles for injections and drawing blood, assessing various sounds of the heart and lungs
• Learn to insert an IV on a mannequin
• Learn how to put on gloves, gown and mask for the Operating Room
• Participate in an Operating Room Mock Surgery
• See the latest in radiology technology
• Study pathologies by observing and handling human heart, lung, and brain specimens
• Learn about various ergonomic & sports injuries (torn ligaments, broken bones, etc.) and treatments
• Understand the role of stretching and exercise in preventing injuries
• Examine rehabilitation equipment, crutches, slings, and splints
• Gain experience in orthopedic surgery with hands-on casting
H2  Day of Biomedical Research

July 12
8:30 - 4:30
Completing Grades 9-11
fee: $60

Interested in a different aspect of medicine? What else can you do with an advanced degree in science? In this session, you will get an introduction to the area of medical research and biotechnology. Gain an understanding of the research process and the development of experimental techniques. View research labs. Learn about cutting-edge work on the frontline of the fight against diseases such as cancer and HIV/AIDS. How does this work lead to the development of vaccines and pharmaceuticals? how does this affect patient care, disease prevention, and public health? We will cover a wide range of topics, including data management and patient-subject relations.

H3  Day of Dentistry

July 26
8:30 - 4:30
Completing Grades 7-11
fee: $60

A joint program offered by UCSF and UOP Schools of Dentistry
• Create molds of teeth
• Learn about strategies for infection control
• Develop and read X-rays
• See what can be revealed in the saliva test
• Drill and fill typodonts
• Tour dental labs
• Explore new advancements in the field, such as chemical treatments to kill bacteria and prevent cavities, and lasers that replace the need for drills or shots

P1  Eyes on Optometry

June 28
1:00 - 4:30
Completing Grades 8 and up
fee: $30

A little fuzzy on what an optometrist does? Participate in this session to get some focus on a day in the life of an optometrist. The session will include a visit to UC Berkeley’s School of Optometry, home to the nation’s premier OD program. Presenters from the School will introduce students to the cutting-edge tools and technology. You will “examine” some of the various tests that optometrists perform, why they do them, and what they are looking for. The activities will also touch on the science of vision and the eye. Additionally, students will learn about academic preparation necessary for applying to a graduate program in optometry. At the end of the day, you’ll have greater insight into optometry, eye care, and vision.

This session is offered by the UC Berkeley School of Optometry.
S1  Adobe Photoshop
June 21, 28, July 12, 19, & 26
8:30 - 12:00
For all SD students
fee:  $150

In order to examine how single images, photo collages, and photo essays are used to communicate an idea or to tell a story, this five-session series will cover a number of subjects in photography. These include reviewing basic photographic elements (such as composition, lighting, subject matter, texture, and point of view), “dissecting” a single lens reflex (SLR) camera, and using a disposable camera to take pictures during the day. We will then analyze our photographs and learn how to manipulate them in a popular commercial image-editing application, Adobe Photoshop, to construct diptychs, triptychs, photo collages, or photo essays. We will spend a large portion of our time in a computer lab as we learn to use Photoshop to express our ideas.

S2  Basic Darkroom Photography
June 21, 28, July 12, 19, & 26
1:00 - 4:30
Completing Grade 8 and above
fee:  $180

Are you fascinated by photographic images? Do you want to learn how to transform tiny 35-millimeter negatives into 4” x 5” glossy prints? Are you curious about the ins and outs of a black-and-white darkroom? Then this class is for you!

We will begin by discussing composition, lighting, and camera basics. We will start by shooting on black-and-white film on the first day of class. Then, we will focus on darkroom technique, including developing film, and working with light and time to produce a print.

Film and developing materials are provided; you will need to bring a 35-mm (manual or automatic) camera. Register early as space is limited.

S3  Experimental Darkroom Techniques
July 12 & 26
8:30 - 12:00
Completing Grade 8 and above
fee:  $90

Are you curious about exploring some experimental techniques in darkroom photography? Do you wonder how and why black-and-white photos are turned brown? (It’s not just because they are old.) Do you wonder about how artists hand-paint black-and-white photographs for effect? If you would like to explore these and other experimental photo techniques, sign up for this two-session class.

Knowledge of basic black-and-white darkroom photography is required. Concurrent enrollment in Basic Darkroom Photography is acceptable. Students should bring a selection of black-and-white prints and negatives to class. Fee includes a Marshall’s photo oil set, paper, and other supplies.
**Women, Feminism, and Politics in the United States**

June 21, 28, July 12, 19, & 26

1:00 - 4:30

Completing Grade 8 and above

fee: $80

How has the position of women in the United States evolved from the 1859 Seneca Falls Convention, when women’s rights activists first declared the discrimination they faced politically, to today, when women are present at many levels of government? How has the position of women changed in society due to political gains such as the right to vote, the right to equal employment, and the right to abortion? What broader societal changes have shaped women’s political and legal gains in the twentieth century? What barriers do women still face in politics and society, and what can be done to break down those barriers?

This Explorations workshop will address these questions and more, as we trace the historical trajectory of the feminist movement in the United States and relate the goals of feminism to the position of women in today’s society.

Topics to be discussed may include: the women’s suffrage movement; “Rosie the Riveter” and the influence of women workers during World War II; Betty Friedan’s *The Feminine Mystique* and second-wave feminism of the 1960s; the addition of Title VII to the 1964 Civil Rights Act outlawing workplace discrimination based on sex; women’s activism surrounding Roe v. Wade; the entrance of women into politics; sexual harassment law; and the barriers women still face in obtaining equality in employment, politics, and society.

We will read primary documents from each historical era of the feminist movement as well as articles and excerpts from books that address historical and current events. Other activities will include watching films, conducting oral histories, and conducting our own research on feminism today.

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**Schools, Students, and Free Speech**

June 21, 28, July 12, 19, & 26

8:30 - 12:00

Completing Grades 8 and up

fee: $80

In 1965, a group of students decided to wear black arm bands to protest the nation’s involvement in Vietnam. The school district suspended the students in violation of a policy against armbands. What ensued was a case appealed to the US Supreme Court about free speech and students in public schools.

Students in this five-day Exploration will study the background to this case, its arguments, and the Supreme Court Justices’ opinions. Additionally, we will look at the precedent this case has set for other rulings. Ultimately, we will consider how this case affects us as students today and what free speech and freedom of expression mean. We will also discuss what is allowed under free speech at school and in the classroom, and what limits are placed, such as in what we say, what we write, and even what we wear. Through this Exploration, we will also develop an understanding of the everyday implications that a Supreme Court ruling might have on schools and students.

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**Documentary Digital Photography**

July 12, 19, & 26

1:00 - 4:30

Completing Grade 9 and above

fee: $80

What is your reality? Your “real world?” If someone made a documentary about you, what would it look like?

We will learn how to use digital cameras to document our lives, and then use Adobe Photoshop to enhance our images by adding text and/or other graphic elements. Taking photos and manipulating images, we will create a digital photo-autobiography. Students must provide their own digital cameras.
In studying the world around us, scientists try to identify patterns that are simple, but general and powerful in explaining the enormous diversity of things that can occur. In this series, students will learn to think like scientists, picking out patterns and exploring the properties of these patterns by performing a variety of experiments, constructing models, and interacting with computer simulations. Students will learn to apply principles of familiar systems (like pumping a playground swing or jumping on a trampoline) to understand less familiar systems (like the shattering of a wine glass by an opera singer). Students will find this patterns way of thinking to provide an invaluable foundation for their future science classes.

This Exploration is designed for students who have successfully completed at least Algebra I. The class is a part of a U.C. Berkeley research project in innovative techniques for science instruction and sessions will be videotaped as part of this effort.

You’re getting ready to take an AP course but aren’t sure how to tackle it. Where do you start? Developing a plan is integral to making sure you succeed in the class. Course requirements may vary, but certain universal study skills are required of all undergraduates, indeed all students. By having a solid study strategy upon entering college, you will significantly reduce your stress in transition, learn more efficiently, and reach your intellectual potential faster:

In this workshop, you will develop study skills to help you in your current classes and that you can apply to college coursework. Topics will include syllabi analyses, time management, note-taking, writing papers, speech preparation, classroom exams, and other study skills. Each student will receive a book on study skills.

Same as S9, but in the afternoon
### SAT Math Prep (AM)
**June 21, 28, July 12, 19, & 26**
8:30 - 12:00
Completing Grade 9 and above
$160

The new math section of the SAT has replaced Quantitative Comparisons questions with questions on geometric sequences, sets, functions, and data interpretation. This series will introduce students to some of the new question types that appear in the Math section of the new SAT while reviewing math concepts that test-takers will encounter. Each student will receive an SAT preparation text.

Students must have completed at least Geometry and Algebra II by the beginning of summer.

### SAT Math Prep (PM)
**June 21, 28, July 12, 19, & 26**
1:00 - 4:30
Completing Grade 9 and above
$160

Same as S11, but in the afternoon.

### SAT Critical Reading Prep (AM)
**June 21, 28, July 12, 19, & 26**
8:30 - 12:00
Completing Grade 8 and above
$160

This five-session series is designed for students who want exposure to and experience with the new Critical Reading section of the SAT which the College Board began administering in March 2005 for the class of 2006. The focus will be on test-taking and vocabulary-building skills that will also help with other standardized tests. Students will have extensive practice with numerous reading comprehension and sentence completion questions. Each student will also receive an SAT preparation book.

### SAT Critical Reading Prep (PM)
**June 21, 28, July 12, 19, & 26**
1:00 - 4:30
Completing Grade 8 and above
$160

Same as S13, but in the afternoon.

### SAT Writing Prep (AM)
**June 21, 28, July 12, 19, & 26**
8:30 - 12:00
Completing Grade 9 and above
$160

The new SAT includes a 800-point section which includes a 25-minute essay and 49 multiple choice questions about grammar, usage, sentence structure, and diction. Through practice with the questions and essay, students will develop greater facility in using language, a skill also necessary to do well in college.

The essay asks the student to develop and express a point of view on an issue. This requires the ability to think critically, to organize logically, and to write clearly and correctly. Each class will include a practice essay with feedback and opportunity for revision.

In addition, students will become familiar with the form and content of the multiple-choice questions and will review or learn the basic principles of sentence structure and grammar. Topics will include grammatical agreement, sequence of tenses, pronoun cases, coordination and subordination, modification, and parallel structure. Each student will receive an SAT preparation text.

### SAT Writing Prep (PM)
**June 21, 28, July 12, 19, & 26**
1:00 - 4:30
Completing Grade 9 and above
$160

Same as S17, but in the afternoon.
**Enrollment**

1. When completing the attached Enrollment Form, note that grade levels are based on the grade you completed before summer. Some Explorations fill earlier than others, so be sure to list alternatives. Make sure your Explorations do not conflict with your regular ATDP course(s) or with each other.

2. If enrolling in H1 Day of Nursing & Medicine or H3 Day of Dentistry, complete the Parental Consent Form(s) on the back of the Enrollment Form.

3. Write a separate check for each Exploration you are requesting (except alternatives). Make checks out to “UC Regents.” On the memo line, write the student's full name and the Exploration number. *If you qualified for financial aid, we will consider you for financial aid for Explorations.*

4. Mail in your Enrollment Form and payment early—we process them as they are received. Forms without payment will not be processed. We will accept enrollment forms after the May 1 deadline, but only process them on a space-available basis.

5. You may return the Enrollment Form and check(s) along with your regular ATDP acceptance packet materials. If doing so, do ensure that a separate check is submitted for each Exploration and not combined with the ATDP tuition.

6. We will mail placement notifications starting on May 17.

7. If all of your preferences or alternatives are full, or if we cancel your Exploration due to low enrollment, we will notify you by mail and void your check(s).

**Cancellations**

If you need to cancel, please write or fax (510-642-0510) us as soon as possible and before the cancellation deadline date of June 7 so that those on the waiting list will be able to attend. We do not accept cancellations by phone. Otherwise, you will be responsible for the amount due. There will be no refunds for those who do not show up for or miss their Explorations.

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**Credits**

All photos
Casey Cheung
UC Berkeley

except
p. 3, student w/ microscope
Jane Scherr

pp. 4 - 5, students & volunteers
Jean Chao
UCSF Medical Center