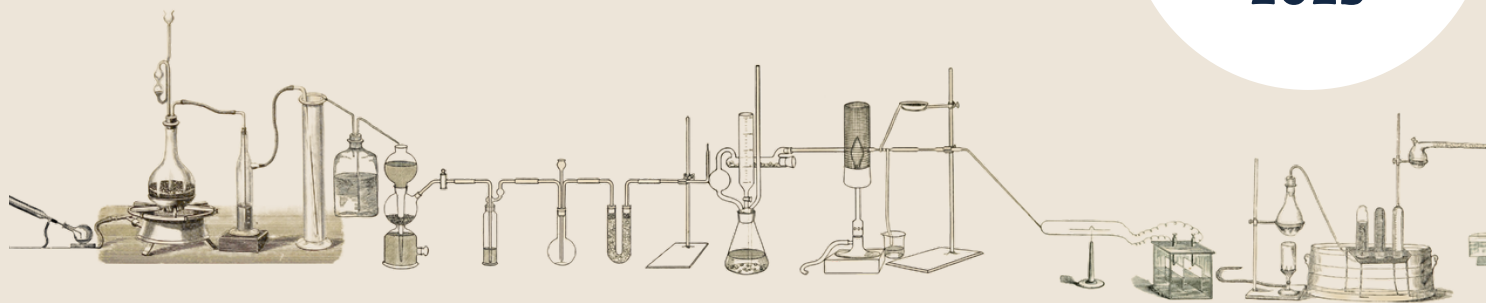


# *Summer Science*

## **CAMP 2023**

**JULY  
10-14TH  
2023**



## *California Northstate University*

### **COLLEGE OF HEALTH SCIENCES**

Bring some science to your summer and join us for a week of exploration and fun at CHS! Featuring four exciting programs specifically designed for middle and high school students! Programs include: Microbiology, Biotechnology, Chemistry, and more!

**2910 PROSPECT PARK DRIVE,  
RANCHO CORDOVA 95670**

**FOR MORE INFORMATION, PLEASE VISIT  
[HEALTHSCIENCES.CNSU.EDU](http://HEALTHSCIENCES.CNSU.EDU) OR EMAIL [CHS.SCIENCES@CNSU.EDU](mailto:CHS.SCIENCES@CNSU.EDU)**

# Summer Science CAMP 2023

## **Microbiology- Discovering the World Around Us**

**Lead Faculty: Dr. Damon Meyer**

Examine the incredible world of microbiology by exploring the abundance and diversity of microorganisms found all around us. Participants will learn to use standard microbiology laboratory techniques to identify and characterize a variety of microorganisms.

**Morning Session - Appropriate for middle and high school students!!**

## **Computational Small Molecule Pharmaceutical Discovery**

**Lead Faculty: Dr. Nicholas Valley**

Pharmaceuticals – whether over-the-counter or prescription – are a very common and sometimes essential part of many people's lives. The road to generate a pharmaceutical is a long, varied, and arduous one - full of pitfalls. Often, to help streamline the process, computers can help guide scientist's efforts to sets of molecules that have a better chance of success. Small molecule pharmaceuticals are used in a broad range of applications from fighting cancer to relieving pain and inflammation. In this summer experience, you will learn some of the properties that make a pharmaceutical viable and how to use various computer simulations and databases to predict those properties for novel molecules. Attendees will choose a biologically relevant target, draw viable molecular structures, and determine the binding affinity of the molecular structures to the intended target.

**Morning Session - Appropriate for high school students!**

## **Get Bright with Biotech: The Biology of Fluorescence**

**Lead Faculty: Dr. Parisa Jazbi and Katie Caswell, M.S.**

Learn about the exciting field of biotechnology through hands on laboratory experiences! Students will engage in lab techniques commonly used in academic and industry labs while exploring applications in biomedical and agricultural fields! These activities include: CRISPR-Cas9 gene editing, Disease diagnosis, DNA transformation (we will make bacteria glow!) and identifying GMO's in food using PCR!

**Afternoon Session - Appropriate for middle and high school students!**

## **What Can the Fly Brain Teach Us About Human Brains**

**Lead Faculty: Dr. Ravi Ranjan**

We may not look like fruit flies or fly like fruit flies, but there is an important commonality: Both humans and fruit flies have nervous systems that respond to chemical neurotransmitters present in the brain that help regulate movement, learning, and emotion. Wait...what? Do small-brained fruit flies (*Drosophila melanogaster*) learn, have memory, and remember better than others? Yes! This is one of the many reasons fruit flies are excellent model systems for exploring the genetic basis of human behaviors. Together, we will explore and investigate the evolutionary relationship between genes, neural networks, and the system of organization within the invertebrate and human brain. A reciprocal understanding of brain circuitry and its regulation may just convince us we are not as different as we think.

**Afternoon Session - Appropriate for middle and high school students!**

**Bring some science to your summer and join us for a week of exploration and fun at California Northstate University, College of Health Sciences!**



For more information and to register online,  
visit [www.healthsciences.cnsu.edu](http://www.healthsciences.cnsu.edu) or email [CHS.Sciences@cnsu.edu](mailto:CHS.Sciences@cnsu.edu)



## Summer Science Camp Registration

Final date to apply is July 3<sup>rd</sup>, 2023. Payment is due at time of registration. Any cancellations must occur before the deadline date. After the deadline, medical/bereavement issues can only be settled for a full refund with a physician's note.

PLEASE PRINT

Name: \_\_\_\_\_ Age: \_\_\_\_\_  
Last First

Address: \_\_\_\_\_  
Street

\_\_\_\_\_ City State Zip

E-mail: \_\_\_\_\_

Home Phone: (\_\_\_\_) \_\_\_\_\_ Cell Phone: (\_\_\_\_) \_\_\_\_\_

How did you hear about our program:  website  friend/family  school  other \_\_\_\_\_

Medical conditions we should be aware of: \_\_\_\_\_

School currently attending: \_\_\_\_\_ Current grade level:  7<sup>th</sup>  8<sup>th</sup>  9<sup>th</sup>  10<sup>th</sup>  11<sup>th</sup>  12<sup>th</sup>

### Program Session:

- |   |   |
|---|---|
| <input type="checkbox"/> Microbiology: Discovering the World Around Us<br>July 10-14 <sup>th</sup> , 9:00 am – 12:00 pm         | <input type="checkbox"/> What can the Fly Brain Teach us about Human Brains?<br>July 10-14 <sup>th</sup> , 1:00pm – 4:00 pm   |
| <input type="checkbox"/> Computational Small Molecule Pharmaceutical Discovery<br>July 10-14 <sup>th</sup> , 9:00 am – 12:00 pm | <input type="checkbox"/> Get Bright with Biotech: The Biology of Fluorescence!<br>July 10-14 <sup>th</sup> , 1:00pm – 4:00 pm |

**Program Fee: \$250.00 for half-day or \$475.00 for full-day**

\_\_\_\_\_  
Parent/Legal Guardian Signature Print Name Date

NOTE: PLEASE VISIT [www.healthsciences.cnsu.edu](http://www.healthsciences.cnsu.edu) AND COMPLETE ALL REGISTRATION FORMS FOUND AT THE SUMMER SCIENCE PROGRAM LINK. PLEASE MAKE CHECKS PAYABLE TO: **CALIFORNIA NORTHSTATE UNIVERSITY**

MAIL ALL REGISTRATION FORMS AND PAYMENT TO:

CNU College of Health Sciences  
ATTN: Katie Caswell  
Summer Science Program  
2910 Prospect Park Drive  
Rancho Cordova, CA 95670

**If you have any questions, please email**  
[CHS.Sciences@cnsu.edu](mailto:CHS.Sciences@cnsu.edu) or call 916-686-7674