The Molecular Biology of Cancer – Good Cells Gone Bad

What is cancer? Why is it so hard to cure? What are the current approaches and techniques used by research scientists to fight this devastating disease? In this hands-on laboratory, camp students will learn the cellular and molecular basis of cancer and its causes and have an opportunity to perform some of the fundamental lab techniques that are the foundation of cancer research. Students will learn current laboratory protocols for techniques that include DNA restriction digest, gel electrophoresis, ELISA (enzyme-linked immunosorbent assay), and microarrays. Students will also perform an Ames test, a brain dissection, and use basic online bioinformatics tools to explore gene mutations and cancer.

**Location:** Whitworth, Spokane, WA.

| Camp Dates | 6/15-6/19 | 6/22-6/26 |

**Location:** Seattle Pacific University, Seattle, WA.

| Camp Dates | 7/13-7/17 | 7/20-7/24 | 7/27-7/31 | 8/3-8/7 | 8/10-8/14 | 8/17-8/21 |

Medical Microbiology

Students will be introduced to common disease causing pathogens, including bacteria, fungi, and viruses. As an introduction to microbiological techniques, students will isolate and grow bacteria and fungi collected from indoor and outdoor environments, then test different strains of bacteria for resistance to several antibiotic compounds. As a culmination, students will perform diagnostic tests as they work through a medical case study of a patient suspected to have a microbial infection.

**Location:** Seattle Pacific University, Seattle, WA.

| Camp Dates | 7/13-7/17 | 7/20-7/24 | 7/27-7/31 | 8/3-8/7 |

Next Gen Science – Origami of Life with Bioinformatics

Delve into the world of genomics, proteomics, genetic sequencing, and other next-gen sciences and immerse yourselves in a universe of infinite possibilities. The students in this camp learn about bioinformatic techniques, to use powerful databases and tools, and explore cutting-edge computational biology research relating to biotechnology and medicine. Students will examine a genetic basis for human variation and DNA barcoding to study biodiversity or food fraud. In each project, students will use several bioinformatics methods to analyze their data. It is a perfect wet and dry lab combination for students interested in both computers and biology.

**Location:** Seattle Pacific University, Seattle, WA.

| Camp Dates | 7/13-7/17 |

Other details:

**Eligibility:** Grade 9-12 as of September 2020

**Fee:**

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<th>Tuition</th>
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<td>$625*</td>
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*For member list, visit our website [www.nwabr.org](http://www.nwabr.org)
Crime Scene Investigation (CSI)-Solving a Murder Mystery

The campers will learn and apply various forensic and molecular biology techniques used by forensic scientists. Students will learn DNA fingerprinting, ELISAs (enzyme-linked immunosorbent assays), blood typing, heart dissection, and blood spatter analysis. Towards the end of the week, campers will take charge of a mock crime scene and use what they have learned to solve the mystery on their own!

**Location:** Whitworth, Spokane, WA.

| Camp Dates | 6/15-6/19 | 6/22-6/26 |

**Location:** Seattle Pacific University, Seattle, WA.

| Camp Dates | 7/13-7/17 | 7/20-7/24 | 7/27-7/31 | 8/3-8/7 | 8/10-8/14 | 8/17-8/21 |

**Location:** Bellevue College, Bellevue, WA.

| Camp Dates | 8/3-8/7 | 8/10-8/14 | 8/17-8/21 |

Global Health Challenges

What is global health? What are some of the biggest health challenges and disparities that we face both locally and globally? How can we best use science, technology and community resources to help solve these issues? Students in this camp will participate in hands-on lab activities and critical thinking exercises to explore problems and possible solutions to some of the most pressing current global health challenges.

Topics and activities will include clean water and sanitation, air pollution and climate change, infectious and non-communicable diseases, anti-microbial resistance, and access to primary health care and education. In a culminating project, the students will design and test a container that can safely deliver critical medications to inaccessible areas via drone technology.

**Location:** Seattle Pacific University, Seattle, WA.

| Camp Dates | 8/10-8/14 | 8/17-8/21 |

www.nwabr.org/campbiomed

For more information or questions, contact us:
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425-786-8138, 206-957-3337