



Health Science Immersion Program (HSIP)

Program Snapshot of Curriculum and Structure

Fall 2019

*Location: USC Health Sciences Campus
9 Saturdays (2-5pm) from Sept. 28th to Nov. 23rd*

Fall 2019 Health Sciences Immersion Program (HSIP)

In Fall 2019, our Health Science Immersion Program (HSIP) will give high school students an introduction to the research, academic and professional aspects of the health sciences field. Students will hear from science professors, advanced graduate students and experienced health professionals who will deliver comprehensive lectures about their field and work. Our curriculum will be supplemented by discussions, panels, workshops and a small group project intended to give students a comprehensive experience as they consider their future college and career opportunities. The program will take place on the USC Health Science campus. HSIP will be a transformative, hands-on understanding to your future!

Speaker Presentations/ Workshops

Students will hear directly from the professors and graduate students who are researching groundbreaking developments in the health sciences.

College Admissions/ Career Pathways

Students will learn about how the health sciences connects to their future goals in college and the professional field

Affinity Mapping Discussions/ Leadership Workshops

Students will have comprehensive discussions about how they relate to the health sciences field and will also engage in workshops that help them understand their strengths in a team

Group Project

Student will prepare a small group research project and presentation related to a health science topic (neuroscience, human anatomy, cancer research)



General Overview of Program

- Students gain a powerful extracurricular opportunity by attending HSIP for 9 Saturday afternoons from 2 to 5pm
- In addition to speakerships, workshops and discussions -- HSIP students will be divided into groups of 4-5 for a simple group final presentation
- Program takes place at USC Health Science Campus; readily accessible to many students in Southern CA by public transit

Program Snapshot of HSIP Daily Curriculum

SATURDAY, SEPTEMBER 28th

2:00pm: Program Orientation for Health Sciences Immersion Program

The program begins as all students meet our staff and board members. We will introduce our organization and the basic structure of our Health Science Immersion Program. We will cover our curriculum and provide an overview of these transformative 9 weeks. The students in our program will be from different backgrounds and perspectives, but for this program we will be brought together as a team. We will review the common program expectations from participants, our HSIP program goals and expected student outcomes.

2:55pm: Curriculum Opening: Learning, Teaching and Researching in the Health Sciences



Staff members will deliver a general presentation about the health sciences field that will provide key background to speaker presentations. The basic aspects of the research process from scientific inquiry as well as grant seeking, proposal writing and research team/department structure will be covered. The distinctions between undergraduate and graduate coursework will be noted. A basic overview of different fields in the health sciences will be provided.

3:25 pm – Intro to Group Projects



Students will receive their cohort assignments as well as their research topic. Groups will be assigned to one of three topics (human anatomy, neuroscience or cancer research). An overview of the HSIP group project will be presented. During this session, the cohorts will discuss the the general science research article handed out to all groups and a specific introductory research article specific to their cohort topic. After spending the first half of the session discussing these articles, students will receive the group presentation break down worksheet and their next topic article.

4:00pm: What Causes Cancer and Why is it so Difficult to Defeat? Jamil Momand PhD – Professor of Chemistry, Cal State Los Angeles

Most families have been touched by cancer, a disease that accounts for about 25% of deaths in the US. The word cancer conjures in our minds tragedy, sadness, indignation; but the reality is more hopeful as new treatments offer the possibility of managing cancer so that it does not dominate our lives. Dr. Momand, a cancer researcher for over 30 years, will present an overview of the molecular underpinnings of cancer and explain why it is so difficult to treat. His talk will end on a hopeful note as he explains how prevention and new treatment strategies are defeating cancer.



Professor Jamil Momand

SATURDAY, OCTOBER 5TH

2pm: “The World of a PhD Graduate Student”, Nicholas Jackson

Nicholas Jackson is a current UCLA molecular biology PhD graduate student who will speak to HSIP about his journey to graduate school and his current experience. This includes the academic pathway as well as how his personal interests were developed through internships and his undergraduate classes. He will also discuss the procedures of conducting his research and developing as a graduate student. He will cover the work/life balance dilemma presented to graduate students and how their typical weeks look like. He will then conclude by discussing what potential career pathways could await him.



Nick Jackson Speaking in July 2019 HSIP

3pm: Neuroscience Basics: An Intro to Neuroscience Research Megan G. Massa – PhD Graduate Student, UCLA

From worms to birds, mice to humans, neuroscience research leverages the power of organisms at all levels to gain a deeper and more thorough understanding of the nervous system and diseases that afflict it. And as neurotechnology continues to advance at an ever-increasing rate, what tools and models scientists use depend on the scientific question being investigated. This introductory talk aims to lay the groundwork for future conversations about neuroscientific inquiry. We will briefly cover the levels of research (basic, translational, clinical), what types of models and techniques are typically employed, and what considerations one must take to weigh the pros and cons of each type of study. Students should leave well-armed to tackle future discussions with research scientists.



4pm: College Admissions Workshop With CollegeLaunch

A college admissions counselor will deliver a presentation about how students can present their own personal narratives and accomplishments to excel in a holistic admissions process. This includes on how to best present extracurricular activities like HSIP in your college applications and to highlight your dedication to learning. The workshop will highlight the significant advantages of the UC system. It will also explore out of state options for college which often accept more extensive, holistic applications. In these private school applications, many students can achieve outsized results with a strong personal statement, supplemental essays, in-person alumni interviews and letters of recommendation. The workshop will also explore how college admissions can be applied to students looking to pursue their education and career in the health sciences.



SATURDAY, OCTOBER 12TH

2pm: “Bench to Bedside: Translating Science into Medicine” Amy Yu – PhD/ MD Graduate Student, UCLA

Many scientific discoveries are made in laboratories every day, but scientists and doctors alike must work together to turn those discoveries into real treatments for patients. The evolution of scientific knowledge into practical, targeted treatments is a complex process, fraught with its unique challenges and conflicts. Amy Yu, a student in both medicine and research, will discuss this evolution from the perspectives of both the researcher and the doctor, highlighting how their roles differ but converge on the one goal of helping patients. She will cover how basic biology and chemistry is applied towards new treatments, imaging techniques, and diagnostics that empower doctors and allow patients to live longer and better lives.



Amy Yu

2:50pm: Medical School Student Panel Lunchtime Talk

Several medical students from the UCLA Geffen School of Medicine will speak about their journey to medical school and what motivated them to take this path. They will discuss their educational experience based on their current year and their expectations toward future years of education and residency. There will be a discussion about the work/life balance of their field as well as challenges that young medical professionals face. Panelists who are pursuing their MD alongside another program such as a PhD will discuss their dual experience.



3:35pm: “How to Build a Brain: Lessons From the Fruit Fly” Bryce Bajar – PhD/ MD Graduate Student, UCLA

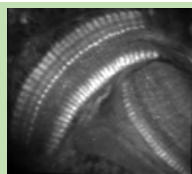


Image of Fly Brain

The human brain is complex: it has over 10 billion cells and over 10 trillion connections called synapses. How is something so complicated built during development? The fruit fly has been very useful in addressing this question because its brain is relatively simple and surprisingly similar to our own. In the fruit fly, Bryce Bajar investigated how periodic neural activity occurs as connections form in the brain. In this presentation we will discuss how this newfound phenomenon could be an important part of our understanding of brain development.

4:30pm: Group Work

SATURDAY, OCTOBER 19TH

2pm – “Career Choices in the Health Sciences and Preparing for Them” Thomas Landefeld, PhD

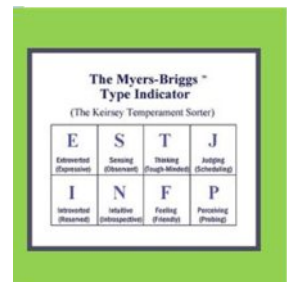


Professor Thomas Landefeld

Students will gain an initial exposure to the numerous professions and vocations that embody the health sciences field. While many students aspire to be a nurse or doctor, one of the first steps in good career preparation is refining these vague missions into specific goals. Professor Thomas Landefeld will begin by presenting an overview of specific health science career pathways open to students. This includes covering high-demand professional roles in the health science, such as physicians, dentists, physician assistants, pharmacists, etc.. There will then be an introduction to different types of doctors, e.g. allopathic physician, osteopathic physician, chiropractor, etc. and medical specialists who serve in the fields, e.g. orthopedist, neurosurgeon, endocrinologist, pediatrician, etc. Academic roles such as becoming a professor or entering science education will also be covered. The presentation will then discuss how students can prepare academically for different career pathways as well as financial and professional considerations. Dr. Landefeld is a longtime Professor of Biology and Pre-Health Advisor at California State University, Dominguez Hills and is author of the book *Mentoring and Diversity: Tips for Students and Professionals*.

3:10pm – Myers Briggs Strengths Assessment

During the week before their HSIP session, students will receive a take home version of the Myers-Briggs assessment, which is the world’s leading personality traits examination. It will take about 20 minutes to complete and the results will be revealed during this session. During this session a trained leadership consultant will help students interpret their results and understand what comparative strengths and skills they possess. They will then learn about how this relates to what type of future leader they might make in the classroom and workplace. This will help students understand what type of job positions they might find the most satisfying and component in undertaking.



4:00pm- Researching Chronic Disease and Formulating Treatment

Austin Mircheff, PhD – Professor, USC Keck School of Medicine



Professor Mircheff

Professor Austin Mircheff will deliver a lecture related to his lab's recent research on chronic, immune-mediated inflammatory diseases, one associated with the eye (dry eye disease) and one associated with the joints (osteoarthritis). He will also speak toward how researchers systematically approach disease mechanisms to formulate new methods for treating diseases. Professor Mircheff is a longtime professor at USC Keck School of Medicine.

SATURDAY, OCTOBER 26TH

2:00pm- Making a World Class Difference for Others While Making Dentistry Fun

Jack Von Bulow, Dentist and Owner of Temple City Dental Care

Dr. Jack Von Bulow is a Dentist and the founder of Temple City Dental Care. Dr. V is a longtime weekly columnist and has written for various San Gabriel valley newspapers (currently, Arcadia Patch.com); he is also the author of three books, Can We Smile (2003) Molar Jockey Memoirs (2007) and The Most Interesting Dentist in the World (2018). In this talk, Dr. Von Bulow will cover his personal journey into Dentistry and his vision of total dental health; he'll share how a journey that began for a kid in the 10th grade (and the first in the family to attend college) led to a career that became a calling on his adopting a vision that extended beyond the confines of the office. Dr. V will share why looking and listening for fun, following your passion, and serving patients, co-workers, and the community like family can make all the difference in being happy, staying young, and being fulfilled. Today, being a dentist can mean transforming and saving lives. Who knew the masterpiece smile you would create would be your own?



Dr. Jack Von Bulow, DDS

3:00pm- Affinity Mapping: Why Are We Interested in the Health Sciences?



Affinity Mapping
HSIP July 2019

After several weeks of HSIP we want students to spend time reflecting about how they feel their perception of the health sciences field has evolved. Students will reflect on what they learned from the speakers as well as from the group project. Students will then also consider the educational goals and professional aspirations they wish to pursue in the health sciences. We will utilize a unique discussion style known as “affinity mapping” to create a collective picture of what HSIP students are thinking. We will then discuss how their current perception differs from when they began the program.

4:05pm– “How to Present Your Best Self” Career Development Workshop

One of the most well-received workshops during Summer 2019 HSIP involved students considering their own mission statements and how they could best communicate these to others, like a future employer. During this workshop, students will practice their interview skills, develop and elevator pitch and formulate a STAR story. They will practice delivering these pitches to each other and use the opportunity to gain constructive feedback.



Leadership Workshop HSIP
July 2019

Saturday, November 2nd

2:00pm –Why Health Scientists Study Animal Anatomy to Develop Cures for Human Diseases

Michael Bordy, PhD - Lawyer, Former Science Academic, Impact Internships Board Member

During this hour long presentation, Dr. Michael Bordy will deliver a presentation regarding research in health sciences into animal anatomical structures and their implications for the development of medical drugs for human patients. Dr. Bordy will speak about his own past research at the University of Kansas and Johns Hopkins regarding the effects of various hormones upon Sertoli and Leydig cells in rats. He will then explain some of the scientific, ethical and professional procedures that scientists undertake before conducting research on animals.



**Michael Bordy,
PhD**



3:05pm - Group Project: Presentation Template and Article Discussion

Students will continue discussion of their group's research articles, and in this session will be provided with several discussion questions. We will continue to learn how to annotate science research articles. Students will also receive the power point template to begin planning for their final group presentation.

4:10 pm - Undergraduate College Life & Science Research

A panel of undergraduates who have engaged in research as part of a science lab team will speak about their experiences both as researchers and college students. The panel of undergraduates will elaborate on some of the challenges and rewards they have encountered in college. This includes their course of study, student life and development as individuals. They will then discuss their research projects from finding a mentor and developing a proposal toward the actual research process. They will discuss general tips and advice for high school students considering their future in college.



Apply and Find More HSIP Info Online at impactinternships.org/apply

Photos of students are from HSIP July 2019. Only 6 weeks shown to reduce length of program snapshot. Final scheduling and sequence of speakers is subject to change. Please contact us at info@impactinternships.org if you have questions about HSIP curriculum.