SPOTLIGHT: THE UNDERGRADUATE RESEARCH EXPERIENCE

What is your current position and how did you get to where you are?
I am **Holly Honore**. I am an undergraduate senior chemistry major at Xavier University of Louisiana. In my sophomore year, I was selected by faculty to participate in the National Institutes of Health (NIH): Building Infrastructure Leading to Diversity (BUILD) initiative, which works toward increasing diversity in the biomedical research workforce and exposing undergraduate students to research opportunities, research mentors, and different graduate programs.

What made you decide to do research as an undergraduate student?
During my freshman year at Xavier University of Louisiana, I joined the chemistry club where I would later learn about the BUILD research program. Through the BUILD program I was able to meet with potential mentors and participate in various activities. The idea of working in a lab and working with a professor on a specific research project really appealed to me.

As an undergraduate researcher, was there particular incidents that stand out?
I have been working with Dr. Florastina Payton-Stewart since 2020. The Payton-Stewart research laboratory focuses on designing and synthesizing anti-cancer agents through the use of organic/medicinal chemistry. My research project focuses on synthesizing anti-cancer agents which will be evaluated in endocrine-resistant breast cancer cell lines.

Starting my research experience during a global pandemic has to be the thing that stands out most to me. My first year of research was all virtual, but I am now physically in the lab for my second year. As an undergraduate researcher, I believe that working in the lab is essential to research. The pandemic delayed that for me, but I have come to realize that working physically in the lab is not the only element of research.

While doing virtual research, I learned that reading and analyzing academic journals, articles, and reviewing previous and current research is crucial to conducting research. During that time, I was able to fully understand the background of my research project and the role I would have once I was in the lab. I am grateful that I had the time to learn how to conduct literature reviews that ultimately help me better understand my research project. In short, the pandemic played a part in me learning valuable research skills outside of the lab that will help me in the future.

How did undergraduate research affect your career direction or play a role in your career choice?
I am still working toward my undergraduate degree, but my current research interests include organic and medicinal chemistry and I am open to other areas of research. Previous coursework, such as organic and analytical chemistry, have influenced my interests and prepared me for research work.
I would like to continue following the research path I am currently on, but also explore research in the field of cosmetic chemistry. I know that organic chemistry is fundamental in formulation development for cosmetic products.

As I continue working toward my degree, I am eager to gain more research experience and improve my laboratory knowledge, skills, and abilities. I also plan to pursue a Ph.D. in Pharmaceutical Science so that I can get on-hands training in the chemical processes used to formulate cosmetic products. If we meet 10 years from now, I hope that I can tell you that I am working as the lead cosmetic scientist on a research team that formulates and develops cosmetic products for everyday use.

Any final thoughts?
I would encourage undergraduate students to reach out to their professors to ask them about possible research opportunities. Specifically, ask a professor in your area of interest to be a mentor and meet regularly with that professor because he or she may be able to assist with research opportunities on campus and other places. I would also suggest undergraduate students join clubs related to their majors—that is another great way to get information about research opportunities on campus and beyond.