Since 1989, the Life Sciences Summer Undergraduate Research Program (LSSURP) has supported students interested in pursuing a Ph.D. or M.D./Ph.D. in STEM through hands-on mentored research. The 66 LSSURP scholars from across the country presented their research projects in a campus wide poster symposium to culminate the 10-week program. LSSURP students, Jessica Osuchukwu and Katherine Guilliams, share how this experience impacted them:

**Jessica Osuchukwu** is a senior biology major at Bowie State University, a Historically Black College or University, who has participated in the Life Sciences Summer Undergraduate Research Program (LSSURP) in 2021 and 2022.

**Who was your mentor and what was your research project?**

My mentor this summer was Dr. Christopher Wilke, a physician scientist in the department of radiation oncology. We tested 3D printed brachytherapy applicators to see if they were sufficient enough for superficial radiation therapy delivery. In collaboration with the Industrial Engineering Department, the specific goal of this project was to test our method of developing automated techniques to eliminate the variability in treatment quality by printing brachytherapy applicators and measuring radiotherapy dose delivered to a patient phantom model.

**How did LSSURP strengthen your interest in STEM?**

The LSSURP program provided me with the opportunity to not only explore the field of cancer research, but understand the different avenues of a career in STEM. Over the course of two consecutive summers, I have worked under the mentorship of Dr. Reuben Harris studying the cancer mechanism and Dr. Christopher Wilke understanding how to elevate radiation therapy.
Through these two experiences, I know for a fact that research was for me as I thoroughly enjoyed my time in the lab.

What are your future goals?

My future goals after undergrad are to obtain an M.D./Ph.D. with an oncology focus in order to become a physician scientist. With an M.D./Ph.D., I hope to use my interdisciplinary training to directly translate my biomedical research discoveries to optimal patient care.

Please provide anything else you would like to mention about the program?

I will forever be grateful for the LSSURP and how it has helped me to shape what I would like my future career to look like. I entered this program for the first time in summer 2021 with very little advanced research experience. Stepping out after my second summer in the program is definitely a rewarding feeling as I feel a lot more confident in my goals. I am especially thankful for being part of the Pre-MSTP program this year where I got to shadow in an outpatient clinic and become acquainted with the welcoming community that is the MSTP at the UMN.

Katherine Guilliams is a senior biology major at the University of Wisconsin, Stevens Point.

Who was your mentor and what was your research project?

During the ten week program, I had the privilege to work with Dr. Subree Subramanian. Our research investigated the resistance mechanism of tumor extracellular vesicles (TEVs) and how modifying TEVs can lead to better tumor outcomes for immunotherapy. We found that the TEVs were being uptaken into the dendritic cells as a mechanism of resistance and potential therapy. Not only was learning the research process interesting and challenging, but the preliminary results of our research were fascinating. I’m so grateful for the time and effort invested in me by my graduate mentor, Travis Gates. He taught me that failure in the lab is to be expected and gave me the freedom and the confidence to fail and try again. Because of this, I began to see patterns and different ways to problem-solve the challenges I was confronted with. Travis also demonstrated true collaboration, which allowed for more minds to work together to form a well-rounded experimental design and to accomplish the most difficult of tasks.

How did LSSURP strengthen your interest in STEM?

Throughout my time spent at the LSSURP, I learned the value of networking, gained greater understanding of laboratory research, and increased my patience and determination to rebound after failure. The lessons learned this summer will prove invaluable as I look to the future and consider pursuing my PhD, MS or other degrees. My success following graduation with my biology degree has only increased because of my time spent with the Life Sciences Summer Undergraduate Research Program.
What are your future goals?

My time spent participating in the LSSURP, only increased my passion for research. In the future, I plan on learning more about the immune system, microbiome, and how lifestyle impacts health. I am especially interested in discovering ways one can reduce the risk of diseases such as cancer. In addition, I am curious to understand how each individual’s genetics and microbiome influence patients’ response to lifestyle changes.

Please provide anything else you would like to mention about the program?

During my junior year, I became greatly interested in research, particularly in the field of cancer; therefore, one of my professors encouraged me to apply to summer research programs. After completing the ten week Life Sciences Summer Undergraduate Research Program (LSSURP), my passion for research was only enhanced, my character grown, and my opportunities significantly expanded.

From the moment I entered the lab, I realized how serious the dedicated LSSURP staff, such as Danielle Watt and Colin Cambell, truly were about investing in my future. In addition to being impressed by the committed staff, I also took the initiative to begin learning about the resources that were available to me and was encouraged to take proactive steps toward my future career goals.