

From Classroom to Lab: Farhan Fuad

Sai Nikhita Gaddam

Lake Forest College
Lake Forest, Illinois 60045

Undergraduate research allows students to extend classroom learning into real-world scientific practice. For Farhan Fuad, a Lake Forest College Graduate from the Class of 2025, this opportunity came through a summer research internship at the Shirley Ryan Ability Lab in Chicago. Formerly known as the Rehabilitation Institute of Chicago, the Ability Lab has been ranked the nation's top rehabilitation hospital for decades. Its unique model integrates patient care with active research, ensuring that discoveries in the lab directly inform treatment for individuals recovering from stroke, spinal cord injury, traumatic brain injury, and other conditions. For undergraduates, this setting offers not only technical training but also a chance to witness how science drives advances in patient care.

Farhan was drawn to the Ability Lab because of his interest in applying his background in neuroscience and psychology to real-world clinical problems. He was drawn to the institution's mission of advancing rehabilitation science through translational research and saw the internship as an opportunity to contribute to meaningful work while developing his research skills. The chance to move beyond theoretical learning and engage in scientific discovery within a leading research hospital was a compelling next step in his undergraduate journey.

His project focused on examining the genetic influences on post-stroke aphasia, a language disorder that affects communication ability following a stroke. Recovery outcomes for aphasia vary significantly across patients, with some regaining substantial language function while others experience lasting impairment. The research aimed to identify genetic markers that may explain these differences and provide insights that could eventually guide more personalized rehabilitation strategies. Farhan's responsibilities centered on molecular biology techniques, including DNA extraction, polymerase chain reactions (PCR), and allelic discrimination assays. Each procedure required precision and careful attention to detail, as errors in technique could easily compromise results. A typical day in the lab involved preparing samples, running assays, recording and analyzing data, and meeting with his supervisor to review progress. At times, he also joined discussions with the broader research team, giving him insight into how his work fit into the larger research effort.

Adapting to highly technical procedures under time constraints was one of the most demanding aspects of the internship. Like many researchers, Farhan encountered setbacks, including failed assays and inconclusive data. At first, these challenges were discouraging, but they became some of the most valuable lessons of the internship. He came to understand that unsuccessful experiments are not wasted efforts but opportunities to refine methods and strengthen problem-solving skills. This perspective shift improved his technical abilities and deepened his appreciation for the research process.

Through the experience, Farhan gained more than laboratory expertise. He developed patience, adaptability, and resilience, all qualities that are as essential as technical skills in scientific work. He also recognized that progress in research is rarely linear. Meaningful results often emerge gradually, after repeated trial and error. Accepting this reality not only made the work more rewarding but also shaped his outlook on science as a career. The internship also helped clarify his academic and professional trajectory. Working at the intersection of genetics, neuroscience, and psychology confirmed his interest in translational research and reinforced his plan to pursue graduate-level training, potentially through a PhD program. By contributing to a project with direct clinical implications, Farhan gained confidence that his studies could be applied to solving meaningful problems in medicine and rehabilitation.

Mentorship played an important role in his growth. Support from supervisors at the Ability Lab and from Professor Andrea Domenighetti at Lake Forest College challenged him to think critically, approach problems persistently, and view obstacles as integral to the scientific process. These experiences strengthened his identity as a researcher and underscored the value of thoughtful mentorship in undergraduate education.

Reflecting on his time at the Ability Lab, Farhan encourages future students to approach off-campus research with curiosity and flexibility. Asking questions, even those that seem basic, accelerates learning and fosters collaboration. He advises students to expect challenges and embrace them as part of the process, noting that research rarely proceeds smoothly. He also emphasized the importance of patience. Entering with the expectation of steady, linear progress had initially made setbacks more stressful. Recognizing that meaningful discoveries often come only after repeated trials would have made the experience less daunting from the start.

Farhan's summer at the Shirley Ryan Ability Lab illustrates the transformative impact of off-campus research. Immersed in an environment where clinical care and science are seamlessly integrated, he not only built technical skills but also developed the resilience and adaptability needed to thrive as a researcher. His experience shows how undergraduate research can clarify academic interests, prepare students for graduate study, and provide direction for professional goals. Lake Forest College continues to encourage student participation in research, both on and off campus. Experiences like Farhan's highlight the opportunities available to undergraduates who seek to apply their studies beyond the classroom. His work at the Shirley Ryan Ability Lab reflects not only his individual growth but also the broader benefits of undergraduate research: the ability to connect theory with practice, overcome challenges with persistence, and prepare for future contributions to science and medicine.



Farhan Fuad, Class of 2025, after his graduation ceremony.

Note: Eukaryon is published by students at Lake Forest College, who are solely responsible for its content. This views expressed in Eukaryon do not necessarily reflect those of the College. Articles published within Eukaryon should not be cited in bibliographies. Material contained herein should be treated as personal communication and should be cited as such only within the consent of the author.

References:

1. <https://www.sralab.org/>. Farhan Fuad