Nano Steps, Giant Strides: Rachelle’s Transition from Internship to Full-Time Success
July 30, 2024 | Grace Hsieh

Meet Rachelle Nineveh Salmani, SJSU, ‘23, whose journey from San Jose to the iconic halls of Stanford has been shaped by her Assyrian heritage and a childhood steeped in ambition. Raised with the steadfast belief that success meant pursuing a career in either medicine or law, her upbringing was defined by the weight of familial expectations. But life took a turn when a spur-of-the-moment spontaneous decision she made to join an after school robotics club in fifth grade sparked a fire within her - a passion for science that would reshape her life's trajectory. Amidst the clatter of moving LEGO® contraptions and the thrill of learning new physics concepts, she unearthed a calling she never knew existed.

In October 2021, in the midst of the global pandemic, Salmani took another leap as she joined the nano@stanford team as an intern in one of the program’s first cohorts. What began as an opportunity in times of uncertainty has since blossomed into a testament to her resilience, tenacity, and curiosity. Having started her academic journey initially as a local community college student, she later transferred to San Jose State University, a four-year institution in the Bay Area, to complete her bachelor’s degree in public health. Following her graduation, she
stepped into a full-time role as a Process Operations Associate at the Stanford Nanofabrication Facility (SNF). Talk about a full-circle moment!

Although it has already been almost three years since, Salmani still vividly remembers her first day as an intern. She recalls being guided on a safety tour, led by former SNF staff member, Maurice Stevens, where she found herself feeling overwhelmed by the size of the facility and the plethora of machinery in the lab. The safety features being explained all seemed like a blur, and even navigating the space felt like she was in a maze. Though she initially doubted her ability to handle the tools as an intern with no prior experience, she credits the warmth and assistance from staff members for lowering the barrier, and appreciates how they took the time to walk her through the complexities of nanotechnology and acclimate her to this new and unfamiliar environment.

As an intern, Salmani’s responsibilities were diverse, ranging from restocking PPE to mastering complex processes like dry etching and plasma etching. She also regularly participated in education and outreach events and played a pivotal role in hiring and training new intern cohorts. Reflecting on her journey, Salmani cherishes several memorable moments, from achieving milestones like patterning the Hoover Tower onto a wafer to bidding farewell to a beloved staff member through a heartfelt video montage.

Salmani using the SVG Coater Track 2, a photolithography tool, in the SNF cleanroom. This process – crucial in the electronics industry – deposits a light-sensitive material, photoresist (PR), to form a pattern onto a surface.
When asked to describe the internship in one word, she said that it was *transformative*. She valued having the opportunity to contribute to the lab’s growth and innovation. She is also extremely appreciative of Ludwig Galambos, a research engineer and consultant, for his mentorship. Galambos gave great guidance both in the technical aspects of engineering in the cleanroom and in life advice, such as work-life balance and interpersonal skills. Inspired by Galambos, Salmani strives to pay it forward and mentor others in the same way.

Now, as a Process Operations Associate, Salmani collaborates closely with staff on projects that advance both the lab and Stanford University. In this capacity, she is currently focusing on preparing lab processes for Engineering courses at Stanford University, ensuring they are feasible for our staff to teach. One process involves developing an NMOS transistor, which is still in the developmental phase. Additionally, she oversees tool alignments and qualifications to ensure their proper functionality and safety. Aside from managing processes, she serves as a trainer for several tools, which allow her to connect with lab users in our facilities, helping to foster a safe user community.

Although her new role revolves heavily around process improvement and operations in the lab, it also centers around our flagship community college program. Salmani is dedicated to enhancing the internship program by introducing structured support initiatives for upcoming cohorts. These include but are not limited to: establishing key milestones/objectives to be reached by target dates, assigning interns to staff-guided projects, and kicking off a new weekly SNF Intern Process Clinics led by esteemed staff members. Another key undertaking for her is building a tight-knit community among the interns. Throughout the past few months, Salmani has been actively organizing nano-intern hangouts for team bonding, scheduling and running monthly meetings for intern report-outs, and even recently taking a group of interns to Washington D.C. for *TechConnect World Innovation Conference and Expo*!

*Salmani (bottom center) led a group of nano@stanford interns on a trip to Washington D.C. to attend TechConnect in June.*
Salmani is excited to apply both the hands-on training from her internship, and the knowledge she gained throughout her time here to her new role and the various challenges that lie ahead.

Her advice to new interns and those looking to follow in her footsteps is to seize every learning opportunity and proactively seek out experiences that will broaden their skills and knowledge. By engaging with mentors and embracing new challenges, they too, can pave their own path to success in the field of nano.