BioGENEius Awards: In Anvita Gupta's Words

She's spoken at international venues and even presented research to President Obama. But when it comes to giving talks, Anvita Gupta is perhaps most proud of the stories she's shared with girls. Though her international nonprofit, [LITAS for Girls](#), the computer science major from Stanford University has inspired hundreds of young women across the globe to pursue their passions in STEM. In the essay that follows, Gupta explains why she has science fairs—and even strep throat—to thank for the remarkable success she's achieved thus far in her academic career.

I first became interested in science at age five through my pediatrician, Dr. Quinn, whom I idolized both for his ability to make me laugh and to treat my strep throat every year. This first contact with science has colored the view I have had of the field ever since; I am passionate about science foremost becauseof its ability to treat afflictions of humankind, whether they are a child's sore throat, or an international epidemic. High-school science fairs gave me the audacious idea that I could be a scientist at any age. Drawn by my interest in medicine, I began to research drug discovery, discovering that it takes 10 years and 1 billion dollars to produce a single drug. I had the idea that artificial intelligence could help drastically reduce the cost of finding new medicines. In one project, I developed an AI model to discover new drugs for diseases like Cancer, Tuberculosis, and Ebola by targeting disordered proteins, previously thought to be undruggable.

I would ultimately present this research at national and international venues, and even to President Obama at the White House Science fair. However, more than the accolades, I was struck by how every person visiting my project had a loved one who had passed away from cancer. Sometimes in tears, they told me what this research meant to them. They taught me that science is not meant to be circulated among the elite; science is meant to be on the ground, for public benefit. This spirit of science for impact is one I recognized instantly in BioGENEius. In 2015, I was the first place International BioGENEius winner in Healthcare; the two things I remember most are my elation as my name was called out in front of all of BIO, and the judging. As biotech experts themselves, BioGENEius judges directly understood the impact of my work in computational drug discovery; we would brainstorm new use cases for my work on the spot, even while judging was going on.

Since BioGENEius, I have gone on to major in Computer Science (Biocomputation & Artificial Intelligence tracks) at Stanford, earning my bachelors and masters in four years and publishing three first-author papers in journals like Nature Machine Intelligence and Wiley's Molecular Informatics. I conduct research

in the Stanford AI lab on deep learning for genomics; specifically, developing AI algorithms for synthetic biology; I envision and work towards a world where we can program biology – create personalized therapeutics, designer proteins, and even optimized microorganisms.

I believe sharing stories of science is incredibly important to inspire young people to join the field – especially the underrepresented and disadvantaged young students who might not otherwise. In 2014, I founded LITAS For Girls, an international nonprofit to inspire young women in STEM, for this reason. LITAS has reached more than 500 girls worldwide, with fifteen chapters across India, the Bay Area, and the West Coast. Girls in LITAS learn STEM through our peer-led curriculum and build impactful projects with their knowledge.

By sharing my story, I hope to enamor another young scientist with the passion that drives me even today – to take my curiosity about the universe and use it to better the world through science.

The content and views presented here are those of the individual Challenge participant.