

# Passion Impels Her

Teen's achievements in complex science research and other pursuits fueled by passion

By Cindy Ziervogel

**N**eerja Aggarwal is an experienced research scientist in the complex world of nanotechnology. She calls research her thing.

When it comes to understanding success in the research world or any world, Neerja can break it down to its simplest form. Her theory is straightforward. Her conclusion is spot on. She explains it all in just one word: Passion.

"I tell people to find their passion. Explore their curiosity. Make their difference in the world. Find that one thing and just go all out for it," said Neerja.

This fall Neerja will be a senior at Hightower High School, and she has many avenues to be passionate about. Not only has she found her one main thing in the very sophisticated and technical world of scientific research, she's been fortunate enough to find her passion for several other things as well.

Yet Neerja's zeal for research shows up in several aspects of her life. In academics, her research skills recently landed her an enviable spot in Los Angeles at the Intel International Science and Engineering Fair, which, among other things, has the distinction of being the world's largest international pre-college science competition.

In the work world, Neerja has a coveted research internship at Rice University that she practically designed herself. After attending Rice University's two-week Nanoscience Discovery Academy last summer she knew she was hooked, she set a goal of fashioning an internship at the school.

First, she spent time learning everything she could about the complex world



Neerja Aggarwal at the Intel International Science and Engineering Fair.

of nanotechnology. And, since there was no internship available, no opening, just a dream and a plan, Neerja delved into researching Rice's Who's Who list of the nanoscience world and contacted about 10 professors who were doing the same research she was interested in. She didn't email everyone all at once; rather it was a process. Really, it was more like a lesson in perseverance. But she never gave up and eventually found her way to Dr. Andrew Barron, who welcomed Neerja and her research project. Once accepted into the Barron research lab, Neerja asked Alvin Orbaek, a Ph.D. candidate graduate student of Dr. Barron's, if he would be her supervisor and mentor.

"She was very keen to work on energy related research, particularly hydrogen

storage. But we don't do this kind of research right now, so there wasn't an opening for her," said Orbaek.

But, that didn't stop her either, because she believes there are always people out there to help, it's just a matter of asking.

The way Neerja describes her love of research, she could just as easily be describing the latest teen clothing craze or a hot new rock band. She tackles complex research with the giddiness of a young child, yet at the same time with the maturity and sophistication of a seasoned scientist.

"The hard part is there's no guidebook when it comes to research. You're on your own," she said. "I love the challenge. Every day was unique and offered the flexibility for me to explore and expand on a new idea or perspective. The internship was extremely valuable because I learned so much. Alvin was an amazing mentor."

If Neerja's enthusiasm could be duplicated in a lab, bottled up and sold, the world would stand in line to buy just a few drops of the elixir.

"I wake up every morning and want to do things. I thrive on work," she said. And, this attitude doesn't go unnoticed either. With all the accolades her mentor can bestow on her, what he likes best is that she's not boring.

"She can have fun with life through theatre and also be interested in the smallest chemical details of her research and work. She is always optimistic. For Neerja it is all an opportunity. I wish I was as successful as she is now when I was her age. She is a role model for her generation."

With a personality fit more for a professional motivator or at least someone running for class president, Neerja laughs

when she mentions the stereotypical “science dweeb” description that plagues her field. Yet if anyone can dispel this unflattering title, it’s Neerja. This energetic, affable and articulate teen is happy whether she’s conducting solitude work in a basement laboratory or hanging with the theater kids, another favorite pursuit of hers.

Neerja first found her niche for acting in elementary school and has experience with Hightower theater both on stage as an actress and behind the scene as a stage manager. She loves both roles. One year at a theatre banquet, Neerja got a spoof award for “Most likely to make a list out of you,” recognizing her exceptional organizing skills. Yet, theater also gives her an opportunity to express herself, to be animated and a completely different person when assuming a role.

Neerja described an international theater festival she recently attended as the one place where she could go and hug a random stranger, then strike up a conversation, and 10 minutes later that person would become her new best friend.

“There are two places I love to be: either in a lab or onstage. Science is a medium for me to explore the world around me. Theatre is a medium for me to express myself.”

In addition to having found her passions, Neerja believes in service and giving back. She’s been active in Girl Scouts for many years and is now working on her Gold Award project, a summer exploratory science camp for young kids. She plans to host an all-day workshop called Step into Science for third, fourth and fifth grade Girl Scouts. The girls will perform fun experiments in recycling, chemistry, biology, physics, earth science and engineering.

Not only is Neerja known for her hard work and dedication, but ideas seem to just flow out of her.

“At our Girl Scout meetings we might be brainstorming to help one of the girls come up with a project idea or what to put on a poster for one of our events. If the room gets quiet or there is a lull, we all look to Neerja who quickly generates



Neerja Aggarwal

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fantastic ideas and then gets up to begin putting them in place,” said Mary Hodges, leader of GS troop 175.

Neerja has served as an inspiration and a role model to a lot of students her own age as well. Dr. John Ramon, Hightower High School’s science teacher and science fair coordinator, said that when students approach him asking how they can do well in science fairs, he always uses Neerja as an example and tells them to interview her.

“Nothing motivates student more than their peers. The good thing is Neerja is always able and willing to help others succeed. She embraces her role. When you listen to her excitement and depth of knowledge on her work as she presents it, you might mistakenly think you are listening to a graduate student; when you look at her poster, and how complicated it seems, you will think that it was done by a graduate student. Neerja is just a junior in high school. That is what amazes me.”

Neerja credits her family, particularly

her mom, Uma, and dad, Gopal, for being her support and inspiration.

“They are in business, both entrepreneurs. My parents have no background in science. They never pushed me; they just expected me to do my best. The rest, they figured I’d make the right choices. They are the best support anyone could ask for.”

Neerja is also proud of her older sister, Supriya who is studying accounting and finance at the University of Houston Honors College. Neerja gives her older sister applause for teaching her at young age. Like when Neerja showed an early interest in math and science and Supriya taught her exponents while she was still in kindergarten.

Neerja’s 8-year-old brother, Raghav, shows a fascination for space and astronomy. So now, Neerja is helping encourage his interest.

When Neerja was Raghav’s age, she declared she was going to be a doctor. Years later, as a teen, she kept with the theme and joined the Medical Academy, a very selective magnet program at Hightower High School. And, here too, Neerja’s passion shines. She’s been on the state executive board of Health Occupations Students of America and has interned at MD Anderson Cancer Center where she observed surgeries, shadowed doctors and learned about the medical field.

Neerja may enter an M.D./Ph.D. program after college, although when it comes to her career goal, she’s still experimenting with ideas. But she knows one thing for sure, regardless which direction she takes, service has always been and will continue to be a priority.

“Each of us can do such amazing things to change the world and we will.” ●



If you know of an outstanding Fort Bend kid to highlight in an upcoming edition, please contact Cindy Ziervogel at [CindyZiervogel@comcast.net](mailto:CindyZiervogel@comcast.net).