

Sabera Talukder

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Education:

Stanford University; Stanford, CA; Sept 2014 - June 2018

- Double Majoring: Biochemistry with Honors and Electrical Engineering (Controls) with Honors
- Class of 2018, Restrictive Early Action Admit
- Conducted Research through 10 out of 15 quarters at Stanford

Los Gatos High School; Los Gatos, CA; Aug 2010 - July 2014

- Took 11 APs, 6 Honors Courses, and 1 Community College Class; Academic GPA - 4.7

Honors:

Publications:

- Primary author and oral presenter of “A portable electrostatic precipitator to reduce respiratory death in rural environments” at IEEE Compel 2017.
<http://ieeexplore.ieee.org/abstract/document/8013316/>

Main Science Awards:

- Google Science Fair (July 2012): 7,000 applicants - 1 of 5 global finalists in the 15-16 age category
- Scientific American, Science in Action Award (July 2012): 1 of 13 global finalist

Recognition for Extra-Curricular Activities:

- Sajida Foundation (NGO: Dhaka, Bangladesh): Project of the Year Award, LGHS Language Outreach Club, Dec 2013
- Santa Clara Society of Women Engineers: Outstanding Junior Science Award, May 2013
- LGSUHS Board of Trustees: Academic Excellence and Citizenship Award, June 2012

Experience:

Research & Internships:

- **Biology (Biochemistry) Honors Project**; Stanford, CA; March 2017-June 2018
Worked in Professor Tom Cladinin’s lab modifying the lab’s behavioral rig to be a closed loop control system. Will continue to perform experiments to define the visual pattern recognition circuitry in the fly brain, as well as artificially implant memories into flies.
- **Electrical Engineering Honors Project**; Stanford, CA; June 2016-July 2017
Worked in Professor Juan Rivas’ lab and created an end-to-end portable, durable ESP that could aid the 4.3 million people a year who die from illnesses attributable to household air pollution, caused by cooking fumes in developing countries. In recognition of this work I was featured in a Stanford EE Spotlight alongside Stanford professors and graduate students.
<https://ee.stanford.edu/spotlight/sabera-talukder>
- **Electrical Engineering Research Experience for Undergraduates**; Stanford, CA; June 2015-Aug 2015
Worked in Professor Kwabena Boahen’s lab and used neurogrid and python to create a large scale model of the human cortex and thalamus. The model is the largest hardware model of the brain ever created. The significance of this research is to see if a hardware model of the brain could be created and used in place of animal models.
- **Medtronic, Neuromodulation Deep Brain Stimulation Division**; Minneapolis, MN; Aug 2013:
I interned in the Neuromodulation Division at Medtronic HQ in Minneapolis. I worked in the Neuromodulation Deep Brain Stimulation Pain group and developed a procedure for pain threshold testing that replaces the traditional method of “1 to 5” pain response; the procedure was used in a clinical trial.
- **Pani (Water) Purification Project**; Los Gatos, CA & Dhaka, Bangladesh; Sept 2011-Dec 2012:

- Designed, developed and deployed a UVc, solar powered, sub \$25 water purification system in 2 of Sajida Foundation's day-care centers for street children.

- This research project was conducted to understand what causes children to become sick (waterborne pathogens) and to then develop a low cost (< \$25), solar-based water purification system that alleviates the pathogens. The system also had to be deployable in rural villages and low lying flood affected coastal regions of Bangladesh, so that the people who needed the water most could have access to it. Project website: <https://sites.google.com/site/panipurification1/>

- Field Research Dhaka, Bangladesh; Dec 2012

Implemented 2 Pani (Water) Purification Systems in daycares for street children, water samples from the systems were tested at: ICDDR,b (World's leading cholera research institute)

- Field Research Dhaka, Bangladesh; Sept 2011

Conducted field research to analyze the bacterial and fecal matter contamination from 24 different drinking water sources. The locations and results of my findings can be viewed at: <https://www.google.com/maps/d/u/0/viewer?mid=1GzXlKDzJr6KX8E9uPQheSAoy59k&ie=UTF&msa=0&dg=feature&ll=23.752374470895724%2C90.365231&z=13> Samples tested at: ICDDR,b (World's leading cholera research institute) & Incepta Pharmaceuticals

National Broadcasts and Presentations - Evangelist for Clean Drinking Water; June 2012 - Present

- HBO's Showtime; Los Angeles, CA; Aug 2013; 2.5 hr filming
- Cal Academy of Science; San Francisco, CA; Sept 2012
- Google + Hangout Broadcast; July 2013 <http://www.youtube.com/watch?v=T6baa-h5oT0>
- NPR Science Friday with Ira Flatow; June, 2012; My interview begins at 12:50 in the following link: <https://www.npr.org/2012/06/29/155992720/meet-the-energy-saving-gadgets-of-the-future>
- PBS Newshour Special; June, 2012

Significant Sports Accolades; June 2002 - Jan 2012

- Santa Clara Aquamaids and Los Gatos Angelfish: Synchronized Swimming (2003-2010)
 - Gold Medalist: US National Championships, Team, 2008, Binghamton, NY
 - Gold Medalist: California State Games, Solo, 2010, San Diego, CA
 - Silver Medalist: US Nationals Championships, Team, 2007
 - Top 20 Rank in the U.S., Individual Figures, Oxford Ohio, 2008

Community Service:

- American Cancer Society, Los Gatos Discovery Shop: June 2009 - Aug 2014
- Founder & President Language Outreach Club, Los Gatos High School: Aug 2011 - Aug 2014
 - Club improves the language comprehension, speaking skills and confidence of female 17-21 year olds in Bangladesh. All years of students improved ~92% in pronunciation and critical reading in one year. The club still runs at Los Gatos High School despite the fact I graduated 4 years ago.

Skills:

- Spanish; speak, read, write (fluent)
- Bengali; speak (novice)
- Stanford Salsa Dancing; Member of Los Salseros De Stanford; 2015 - Present
- Musical Theater; Played Nina (lead role) in *In the Heights* at Stanford in 2016; 2004 - Present