

The logo for SWE NEXT, with 'SWE' in blue and 'NEXT' in light blue and yellow.

SWENext Special Edition – April 2020

These are extraordinary times. Pandemics can be scary. We are all being affected in some way. Most of you are not attending school as you normally would. Many of us engineers are working from home. We're all adjusting to this environment where we have to maintain physical distance from one another.

But physical distance doesn't mean we can't stay connected. Reaching out virtually to maintain relationships is more important now than ever before.

In an effort to stay connected with our SWENexters while physical distancing, the SWE member volunteers who work on the SWENext Program are bringing you this special edition newsletter. We are featuring just a few of the many engineers and companies that are helping people and helping the world during this difficult time. We are also sharing activities you can do while you are quarantined.

You'll see the regular April SWENext newsletter soon. Please stay safe and know that SWENext is here for you. If you have any questions, please contact us at swenext@swe.org.

- - *The SWE Member Volunteers on SWE's Student Programs (SWENext) Committee*

How Engineers Are Helping During the Pandemic

Engineering is a "helping" profession. Every day engineers help deliver clean water, reliable energy, safe transportation, fast communications, life-saving medical equipment, cleaning and hygiene products and food.

During the pandemic, engineers are doing even more to help people around the world.

We asked SWE members to tell us what they or their company are doing that helps people during the COVID-19 pandemic. We also asked them to tell us how they are keeping themselves motivated. Here is what they told us.

Jayshree Seth

*Ph.D. in Chemical Engineering, Clarkson University
Corporate Scientist and Chief Science Advocate at
3M
Minneapolis, Minnesota*



3M is responding to the rapidly changing COVID-19 outbreak by providing personal protective equipment (PPE) and supplies where they are needed the most. I am incredibly proud of the work my coworkers around the world are doing to support the public health and government response to the outbreak. I know that the safety and health of our people and the public are top priorities.

I'm able to work from home and stay in touch with my team members around the world. I'm thankful that we are safe and I'm very proud to be a 3Mer during these times. I am extraordinarily proud of the fact that our 3M masks, gowns and hand sanitizers are helping to keep doctors, nurses and others on the front lines safe and protected. This keeps me motivated to continue our work!



Justina Sanchez

*Degree in Computer and Electronic Engineering, ITT
Technical Institute - San Diego
Product Safety Engineer at TÜV SÜD America Inc.
San Diego, California*

My company inspects manufacturing processes to make sure other companies are making products as accurately as possible. For the pandemic, we're allowing certain manufacturers who normally need to be inspected four times a year to get inspected twice a year. We're also working with them to do inspections online, where they set up a camera and show us their process over video chat. By inspecting the companies, we make sure that the products they're making are safe.

The generosity of my company has kept me motivated because they've been really helpful to all of their employees. Headquarters provided what was needed to work from home, including printers, paper and laptops. We also have a Skype session every Friday where any employee can join the call and talk to other employees about different topics, such as tips for working from home, how to home-school our kids and how to exercise through Skype!

Dhanu Thiyagarajan

*B.S. Bioengineering, University of Pittsburgh
Doctor of Medicine (M.D.), Temple University*

*OBGYN Resident, UI Health
Chicago, Illinois*



During the pandemic, I'm working to help pregnant women and women in pain. My colleagues and I are brainstorming devices and processes that would give our patients more options for telemedicine, self-testing and home-monitoring. With these options, they don't have to see the doctor in person as much.

For example, pregnant patients need to visit their doctor every one to four weeks. Now, they might only have to come in four times during their nine-month pregnancy. This way, we can continue proper medical care from the safety of their own home!

I'm staying motivated by the energy and dedication that my fellow co-workers have.



Gisella Lamas Samanamud

*PhD, Environmental Sciences & Engineering,
University of Texas at San Antonio
Lecturer at University of Kentucky College of
Engineering
Paducah, Kentucky*

Engineers at the University of Kentucky have partnered with local community colleges to do 3D printing of personal protective equipment (PPE) components. In Paducah, the request is for at least 1,000 components that will have to be assembled to support local hospitals. My colleague Kim Sayre, Director of Industry Engagement at the Lexington campus, is assisting requests with prototypes, testing and analysis used by healthcare workers during this outbreak.

The generosity of the University of Kentucky, and the leadership and proactivity of their employees, have kept me motivated. I appreciate all they are doing as we move forward this semester. The University itself has implemented 24/7 technical support with online resources so that everyone can keep learning or working remotely. The Director of our program has maintained weekly meetings via Zoom for students, faculty and staff so that we can support each other while maintaining social distancing.

Mary Zeis

*B.S. Chemical Engineering, University of Pittsburgh
R&D Associate Director at Procter & Gamble –
Retired
Pittsburgh, Pennsylvania*



At Procter & Gamble (P&G), I worked on improving the product and packaging for Tide Detergent, Dawn Dishwashing Liquid, Crest Toothpaste and Pampers Baby Wipes. All of these products are needed to keep people clean and healthy. Now P&G engineers are working hard to maintain the production, distribution and availability of all of their brands, including Charmin toilet paper. Also, P&G has installed new lines to make hand sanitizer in five manufacturing sites around the world. And work is underway to produce face masks at nearly a dozen P&G manufacturing sites around the world. This is a product that they never made before.

I am staying motivated because I am confident that engineers and scientists will solve this problem. It may take many months, but in the end, they will solve it. That's what engineers do!

5 Things to Do While Quarantined

Spending weeks at home isn't ideal, but this is a national emergency, and it's important we all do our part to keep ourselves—and those around us—healthy. Fortunately, this time at home has allowed us to get creative in terms of how we spend our free time. These are just a few ideas we thought of, but we're sure you can think of more. Share them on Instagram with the hashtag #SWENextTop5.

1. **Read a book.** Pick 5 books you have always wanted to read but never had the time. There's enough time now! Pick a book and start a virtual book club with your friends! Prefer to listen to your books? Audible has made a bunch of titles free for kids, tweens and teens!
2. **Commune with nature.** Walk around outside in the sun at a healthy distance from other people. Take advantage of the spring weather and time on your hands to go out and observe nature. Try downloading an app, such as iNaturalist, so you can record, catalog and share what you found! The app also facilitates connection with thousands of scientists to help users identify the species they have observed. Earth Day is April 22nd so think about taking a garbage bag with you to collect trash!
3. **Cook.** Cooking is a great way to investigate the phases of matter – solid, liquid and gas. Boil water for pasta and serve ice water to drink, and you've got all the phases covered. Try doubling or halving a chocolate chip cookie recipe to practice your math skills. Make rock candy and watch crystals grow using the [instructions HERE](#).

4. **Look at Colleges.** Use the [College Matching Wizard](#) to answer some important questions about your preferences for college. Then search for colleges that match your choices and review your results with your parents. Identify five to ten colleges about which you would like to find out more information. You can also check out the SWE College Section Videos at this [SWENext YouTube link](#).
5. **Get Artsy and Crafty:** You can make stylish [Paper Beads](#) in a multitude of colors and patterns with simple steps and easily accessible materials. These paper beads help develop motor skills, promote problem-solving and provide a creative outlet!

Bonus! Here's another thing you can do while quarantined!

Check out videos on Khan Academy. Khan Academy has lots and lots of videos on all sorts of topics. You can learn about math, science, history, art and any other topic you might be interested in! [Check out this course on Imagineering!](#)



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