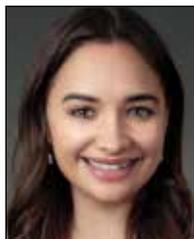


Graduate student survival in a COVID-19 virtual world

By Victoria Christensen



Christensen

Most of us grew up going to school outside the house. Leaving for kindergarten made our parents cry, then leaving for college brought more tears. Going out of our comfort zone is an important part of our growth as individuals. Along the way, we find out how we learn best and how we like to interact with others.

I found through my undergraduate education that I learn best by asking questions and discussing topics with others rather than relying solely on reading textbooks and working independently on assignments. Group projects and presentations are my favorites because they cater to my extroverted personality and my desire to expand my leadership skills.

In the wake of the COVID-19 outbreak, all academic communities are facing unprecedented challenges in re-shaping the education process. Online classes and virtual learning were used previously but were by no means universal like they must be now. Our professors and teaching assistants must find new ways to engage students without traditional in-person lectures, office hours, exams, and discussions.

How do educators ensure their students retain information while maintaining high academic standards? With the collective experience in remote teaching being what it is, some of our professors and teaching assistants will undoubtedly struggle with conveying content.

What can students do to ensure they get the same quality education in this new format? Surely, some level of self-reflection is necessary to make adjustments that work for you. Patience and communication from both sides are going to be crucial.

Speaking as a graduate student who spends a lot of time in the laboratory working on experiments and in meetings discussing results with others, self-isolation and social distancing is not easy. Practicing self-discipline is necessary to remain productive. We do not have a classroom of students surrounding us or an office of fellow graduate students working to keep us accountable.

To fully focus on my online classes, I turn my phone off or keep it across the room. I practice self-discipline by resisting

use of other monitors to check email or multi-task in other ways during lecture. I would not be doing that if I was in class, so I should not be doing it now. If this self-discipline is hard for you, turn on your webcam. It is easier to keep yourself engaged when you know your professor and other students can see you listening intently (or not).

Even with the changes in format, graduate coursework remains an important element of our education, providing the foundation of scientific principles that help us contextualize our research findings. My advice to other students is to continue to take classes seriously. Although there will be some adjustment time, we are extremely fortunate to have technology that allows us to continue learning off-campus.

Outside of coursework, most laboratories have shut down, leaving experimentalists questioning what to do next to further their research goals. Personally, I am taking this time to think about the problems I am tasked to solve in alternative ways. For example, I am using mathematical models and existing databases to answer questions I was trying to answer experimentally. I am also using this time to summarize my thoughts and findings in writing. Writing is a task that is always on the backburner for me, and I am thankful that I have this opportunity to catch up.

What's on your backburner? Perhaps it is learning to code, learning a new language, building a better understanding of the literature, or taking steps to advance your professional development goals. Right now is an opportune time to tackle these tasks. After the quarantine is over, we will have taken steps to become more well-rounded researchers.

This time is also opportune to strengthen our relationships and communications with group members and advisors. Outside of virtual group meetings, I have weekly meetings with my advisor to discuss progress in a one-on-one setting. These meetings help to build accountability on my end, as it would if we were meeting in person. Accountability can also be built into regular meetings with groupmates, for example, by doing activities like journal clubs.

Meetings that keep up your social dynamics and friendships are also important. I have regular "Coffee Chats" scheduled with my office mates to simulate the refreshing chats we had in the office. In these meetings, we discuss our well-being, hobbies we are taking up, and goals that we have set for the quarantine period. These meetings remind me that I am not alone in adapting to this new normal.

Finally, maintaining healthy habits outside of work are essential to keeping your sanity during this time. My "normal" routine previously consisted of going to the campus gym early in the morning before heading into the office and spending evenings socializing with different groups of friends at trivia nights, hosting movie/television show viewing parties, and cooking or sharing meals.

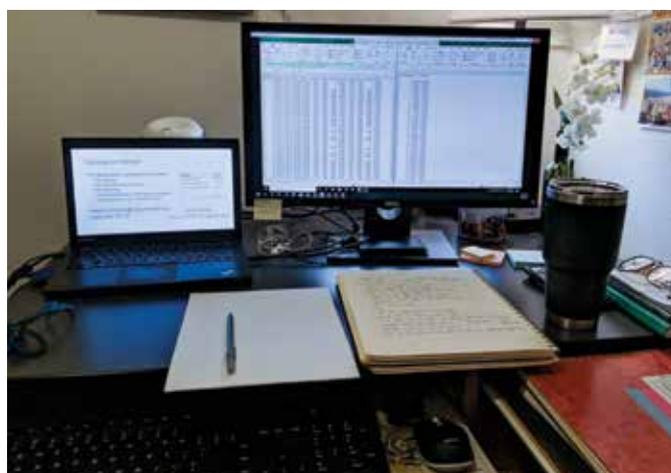
My "new normal" still incorporates exercise, but it now takes place in my apartment in the evenings (so as to not wake my roommates).



Figure 1. Some members in Frank Zok's research group having our weekly group meeting over Zoom.

I've found new workouts that are fun and challenging and are a refreshing change of pace from my previous routines. Even my roommates join me, adding to the fun of what used to be a solo activity. Being at home also leaves time for cooking new healthy meals (and baking some yummy desserts). Social hobbies are still possible over Zoom, they just take slight adjustments. I joined a book club, started playing video games, and have happy hours with family and friends virtually.

Most materials science graduate students are fortunate to have job security and institutional support for many of their needs during this crisis and should focus on the positive aspects of their circumstances. We can take this opportunity to work on personal growth and to develop skills in communication and self-discipline that we will bring with us throughout our careers. In the process, we will become more well-rounded individuals and researchers. Thanks to virtual communication technology, we can also continue to work toward our long-term well-being by strengthening support networks with mentors, advisors, group members, and friends. When we look back on this time in our lives, we should be proud of the adjustments we made to keep ourselves mentally strong both personally and professionally.



Credit: Victoria Christensen

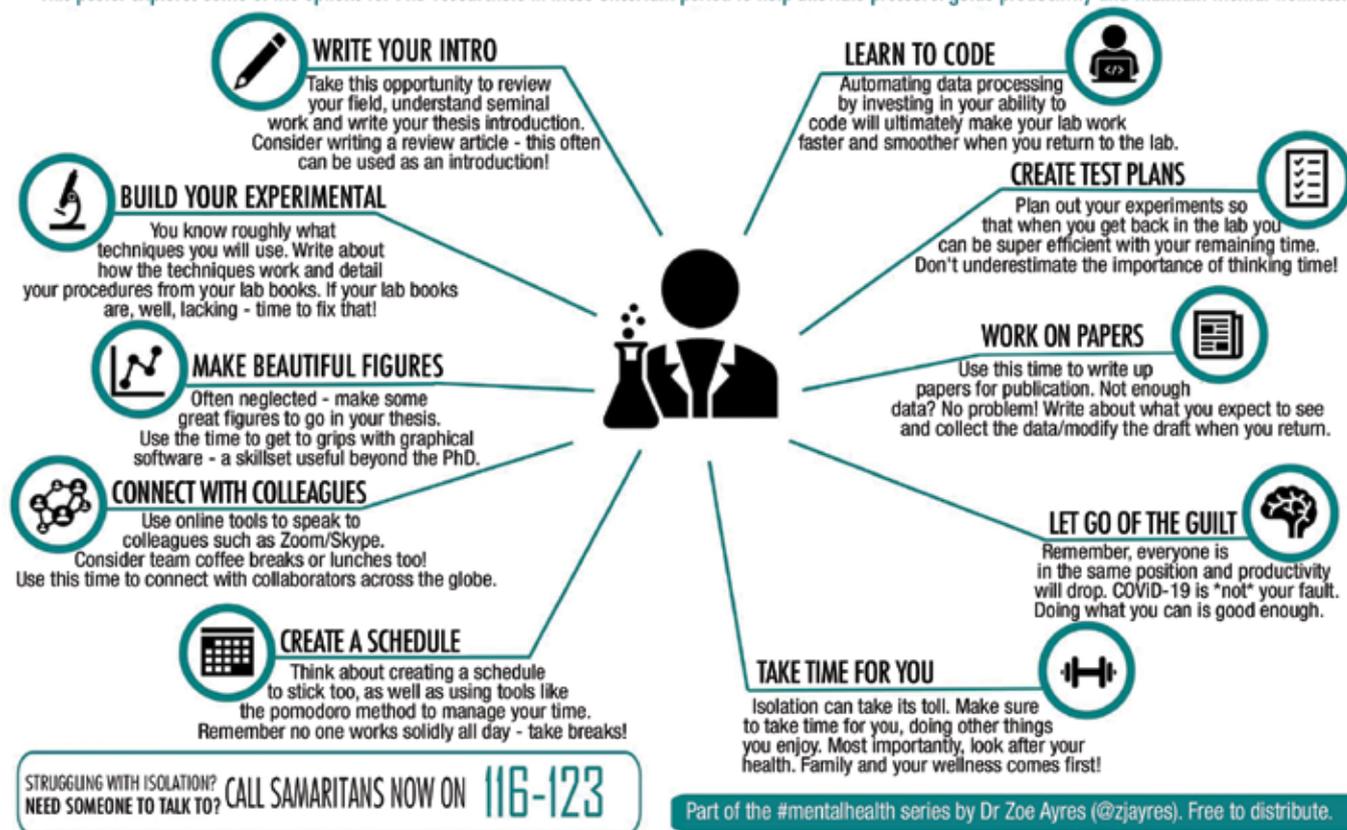
Figure 2. My personal work-from-home setup.

Victoria Christensen is a second-year graduate student at the University of California, Santa Barbara, working in Prof. Frank Zok's research group. Her research focuses on understanding the thermodynamics and kinetics behind oxidation of boron nitride coatings in silicon-carbide-based ceramic matrix composites. She is excited to get back into the lab after quarantine to run experiments and to organize in-person activities with her research group and friends. ■

SCIENTIST WITHOUT A LAB? A PhD RESEARCHER GUIDE TO COVID-19

In these unprecedented times, many of us are finding ourselves without the ability to perform lab work and are having to self-isolate.

This poster explores some of the options for PhD researchers in these uncertain period to help alleviate pressure, guide productivity and maintain mental wellness.



Credit: Zoe Ayres, Hach Company

Figure 3. An infographic providing more ideas to help Ph.D. students research from home. I find the "letting go of the guilt" topic to be so important!