Scientists who have children are trying to manage their productivity as employers, universities and schools worldwide have closed in an effort to contain the COVID-19 pandemic. Here's what six researchers are doing to navigate the tensions that arise when full-time work and full-time parenting intersect at home.

Share the day

Marica Branchesi, an astrophysicist at Gran Sasso Science Institute, L'Aquila, Italy.

The schools here in central-south Italy closed on 4 March. My children, who are three and four years old, my partner and I are all together in a 100-square-metre apartment on the first floor of our building. We are lucky to have a large balcony, where we spend a lot of time in sunny weather. Under a 9 March federal order, we can go out only for food or medicine. The order, which recommended as much remote work as possible, makes it impossible for me to meet with my students and postdocs.

By 16 March, our institute's entire staff was working remotely for an indefinite period. Institute buildings remain open for limited hours for...
I am separated from my large extended family — grandparents, parents, sister, uncles and cousins — who all live a three-hour drive away in Urbino, central Italy. There is the devastating awareness that, if something bad happens, we cannot meet or go to help each other. We have video or phone calls every day with my parents, my sister’s family and with my grandparents, who both are more than 90 years old.

It is difficult to work and to concentrate, but it is important to think of something else and to continue one’s life. I am lucky because I can continue to work remotely.

Life goes by slowly, between the desire to work as if nothing special is happening, and the search for information on the coronavirus, waiting for numbers that might indicate an improvement of the situation. I share the day with my partner, a physicist who also works at the Gran Sasso Science Institute. One of us works while the other spends time with the children, devising games to stop them from getting bored, and then we swap roles. Some days my partner is more busy with work; other days, I am. We often work for three or four hours after the children go to bed, sometimes as late as 2 a.m. while they sleep. It is not particularly efficient because I am usually tired by then.

The work has not changed much — data from telescopes, satellites and gravitational-wave detectors can still be received on our personal computers. However, I miss the human contact, and the ideas that arise during long group discussions using blackboards or by sharing notes and printed documents in person. We continue to explore the Universe, but we feel a little more alone.

Negotiate with kids

Javier G. Fernandez, a materials scientist at Singapore University of Technology and Design, Singapore.

My campus set a social-distancing policy on 17 February, shortly after the Singaporean government raised its alert level in response to COVID-19. All personnel were assigned to one of two teams that alternate between working on campus and working from home, to minimize contact between individuals. Most classes have now moved to an online format.

I’m much more productive because of the reduced administrative workload and the lack of ‘important’ meetings that, apparently, can be swapped for a couple of e-mails.
When I work from home now — if I have a phone or online meeting after 5 p.m., or if it was a day when our three-year-old daughter’s school was closed — I always make people aware that she will be around and that the meeting might be interrupted. [Schools and workplaces in Singapore were open on certain days at the time of this interview.] My advice is, don’t stress over trying to hide that your children are home with you. Being a person doesn’t make you less of a professional.

I share all tasks related to childcare and the household with my spouse, who is a product manager for the online shopping platform Alibaba. In general, this task-sharing happens organically, but we have some basic rules. For example, I picked up our daughter from school every Monday, Wednesday and Thursday, and my spouse picked her up every Tuesday and Friday. So whoever was not collecting her could work longer hours on those days.

That is not entirely written in stone. We make changes occasionally, but communication is crucial for those specific arrangements.

If we are both working from home, we divide childcare into morning and afternoon sessions: I take care of our daughter in the morning while my spouse focuses entirely on work, and we swap in the afternoon. Sometimes, one of us might get some work done during our childcare session, but looking after our daughter must be the priority during those hours. Our system works for us because we perceive the process as a collaborative effort, rather than as a competition.

Being strict with time is crucial. Set precise schedules and focus on what you are doing. As we say in Spanish (I’m from northern Spain), ‘No se puede estar en misa y repicando,’ which literally translates as, ‘You can’t be attending mass and ringing the bells at the same time.’ We use it to exemplify two things that you might want to do at the same time, but which you can’t do right simultaneously.

Strict schedules help our daughter to become used to a routine, and she contributes to it instead of fighting it. I negotiate deals with her. For example, if I need to focus for 1–1.5 hours, I ask her to play on her own during that time. She might watch television or play with her stuffed toys. I commit to my promise that if she does it, we will then play or read or go outside together.
Younger children might be able to focus for only 30 minutes at a time. Pick a time frame that is achievable for your child, so that you will both feel successful. The important thing in these negotiations is to be strict not only with the working hours, but also with the playing hours. In the end, if you embrace those, they become an excellent way to release stress.

It doesn’t work all the time. Kids are kids, so there is inherent randomness in them, but they are growing and are incredibly good learners. So you can grow together.

**Work in bursts**

*Sapna Sharma, a freshwater ecologist at York University, Toronto, Canada.*

Our public schools closed on 13 March. I have enjoyed the extra time with my son, who is four years old, and whom we are home-schooling for several hours a day. But I have had to move meetings online through the video-conferencing service **Zoom**. I hold these approximately one-hour lab and collaboration meetings while my son is awake, during regular working hours. He usually does an independent activity then, such as colouring, playing with toy cars and trains or working on his sticker collection, or he watches a cartoon. Sometimes, he comes to sit on my lap and joins the Zoom meetings. I am fortunate to work with colleagues who are patient and understanding, and enjoy my son popping in.

I also work in shorter stints – 45–60 minutes at a time during the day – while my son is busy with his own activities in the same room. During this time, I can work only on teaching, service, editing and outreach work. It’s difficult to write or work on research during this time, so I try to do that before my son wakes up at 9:30 a.m. and after he goes to bed. Depending on the day, and because it was especially busy while transitioning my teaching to online courses, I work a total of 6–8 hours a day. My research, which I can do remotely, involves analysing large data sets to understand the impacts of climate change on lakes.

I make detailed notes on what I absolutely need to do when I have time for work, and go straight to my to-do list as soon as I get a chance. I am fortunate to have an incredibly supportive husband, who helps to give me focused work time when I need it. He has a PhD in particle physics and works in quantitative risk management, and is also working at home during this pandemic. He and I alternate caring for our son, typically for a couple of hours at a time. For example, if I am in a meeting or teaching, my husband will play with and take care of my son during that time, and vice versa. If we are both in a meeting or working at the same time, my son will watch something on TV.

Our schedule of meetings with others is pretty well structured. Work time is not structured, and we found that we’re both putting in very long days to accommodate working and taking care of our son.
When we are both busy or in a virtual class or meeting, our local friends and family help us out by ‘playing’ with our son over video call. My parents live outside Toronto and my husband’s parents are in Chicago, Illinois. Both sets had offered to help in person during this time, but we asked them not to, because of the higher risk of infection for them.

I recognize that I am not going to be as productive during the COVID-19 outbreak, but I am comfortable with that. Academia is a marathon rather than a sprint, and I will have time to be productive after this public-health crisis is over.

*Editor's note: Sharma e-mailed on 1 April with this update:* “I became ill on 25 March with symptoms consistent with COVID-19 and with a kidney infection. I learnt on 1 April that I tested negative for the virus, and antibiotics are helping with the kidney infection. I taught my last class for the semester on 25 March, and have taken a break from work. I will work again when I’m feeling better.” *Sharma e-mailed again on 3 April to say that she was feeling better and was back to work.* Nature encourages readers who are feeling ill to take sick leave.

**Automate workflows**

*Anthony Tran, a rocesse engineer at a health-care company, San Francisco, California.*

When my 18-month-old son’s day-care centre closed in late March, my wife and I had prepared for it. She is an actuary for a large health-care company and works from home, so we rotate childcare shifts on the basis of our availability. We schedule our tele-meetings so that they do not overlap, leaving at least one of us to be available to attend to our son if necessary.

Communication with managers is crucial. Be transparent about what will work for you as a result of your child being at home. In my experience, managers will generally be understanding and try their best to accommodate your schedule. Your family life is as important as business operations and should be treated as such, especially during a rare global crisis.

In San Mateo county in California, we have a ‘shelter-in-place’ order that requires us to stay at home except for essential activities such as buying food. This is a good time to use toys and activities with children that encourage more-focused thought and creativity, which in turn can buy you more time to get work done. Kids can perform more-elaborate activities that engage them for longer periods, so that parents have longer uninterrupted periods in which to be productive. When time to work is scarce in general, it can make a difference between a productive and an unproductive day. For
example, we recently bought a magnetic tile set that helps to keep our boy entertained for longer periods. Inevitably, however, he will get bored with that, so we keep different sets of toys and books on rotation.

My work involves programming laboratory robots that process clinical samples for cancer diagnostics. Every week there’s some preliminary work that I can do at home for a few days. Then I spend a few half-days in the lab to test the processes out on actual systems. Our work falls into the ‘health-care operations’ category of essential businesses, which is exempt from San Mateo’s shelter-in-place order.

Because the processes are automated, it minimizes the time I need to be in the lab, and I can go home for a while to care for my son. Colleagues who can be in the lab a bit more often set up and run most of the automated experiments. This means that teamwork, relationship-building and communication are especially important.

Editor’s note: Tran e-mailed these updates on 26 and 29 March: “Wife and I have been sick. Throw in a kid to take care of and we were barely scraping by. But our four-to-five-day fevers broke yesterday, so we’re doing much better. Don’t know if it was COVID-19, but it seems we’re on the road to recovery.”

Let go

Hiromi Iinuma, a particle physicist at Ibaraki University, Mito, Japan.

My seven-year-old son’s school closed on 5 March. My spouse is also a particle physicist, but his office is in a controlled-radiation area so our son cannot stay with him during the day. Throughout the pandemic, my spouse has been doing his best at work and at home, but I have been spending more time with my son.

My son has asthma, so I hesitate to take him to day care, which remains open for now. Fortunately, I have my own university office, which I can still use, so I work there with my son. I would work from our two-bedroom house, but I need to have in-person discussions with my students so that I can guide them intensively and better assess how they are doing during this difficult time.

I have no idea how to maintain my research productivity while working alongside my son. My husband says that my attitude changes completely when I am doing my work. My son told me early on that he thought that I hated him, because of my attitude when I worked in his presence. I never realized that I put such stress on him. It’s a dilemma, trying to be a good mother and a researcher at the same time.
I give him many workbooks, origami, whatever he wants. But he can stay calm for only a few hours. My research productivity has diminished quantitatively and qualitatively. At the end of the day, both my son and I are very exhausted. Of course, I work during the weekends at home, too. At those times, my son can play with his father.

The Vidyo video-conferencing system is my best tool for remote discussions with colleagues. At times, we hold small meetings in person on campus, but we prefer to use the online system so we can each remain in our own offices and avoid non-essential contact. We have postponed many non-urgent meetings. I see now that many were not essential.

My colleagues accept my remote attendance at important meetings. And, fortunately, throughout March I did not have to visit an experimental area. But I am really wondering how long this situation will continue beyond April.

**Exploit the balcony**

*Seyed Akbar Jafari, a condensed-matter physicist at Sharif University of Technology, Iran.*

I have a seven-year-old daughter and a six-month-old son. My wife is an IT manager and has worked from home too since early March. My daughter is not a challenge, because we have only to take care of her online homework. The challenge is my son. I have roughly divided these caring duties with my wife.

She takes care of him during the evening hours. So, I have from 10 p.m. to 2 a.m. to focus on duties such as writing papers or preparing lectures. During the day, I take care of my son so that my wife can have at least four hours of focus. We have expanded the capacity of Skyroom, the university’s virtual class platform, which was produced by an Iranian start-up company. For the past month or so, my wife and I have nearly managed to synchronize my son’s naps with my class schedule, although we are not always successful. If he wakes up during the class, my wife handles him. Outside of that class hour, I take care of him.

My appointments with postdocs and students are set for approximate times and are occasionally rescheduled to accommodate my wife’s working hours.
Because my daughter likes to watch her favourite cartoon in the living room and my son is asleep in the bedroom while I teach my afternoon class, I usually hold my online undergraduate course while sitting on the balcony of our apartment.

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