

Work



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Climate scientist Kim Cobb speaks at a women's empowerment event in Atlanta, Georgia.

regular waking and meal times during the week, she advises setting non-negotiable periods for time off and exercise, especially at the weekend.

For scientists who share living space, it's important to establish a private zone, or, at least, stretches of undisturbed time, she adds.

When Heidi Rehm resolved this year to create a meeting-free week once a quarter, she couldn't have anticipated the pandemic. Even so, says Rehm, medical director of the Broad Institute Clinical Research Sequencing Platform in Cambridge, Massachusetts, she hasn't slipped once. If anything, she says, the strategy has flourished: the Broad Institute is planning to expand it institution-wide next month.

Enhance virtual interactions. Online conferences level the playing field and allow for higher attendance, says Emmanuel Adukwu, acting deputy head of the department of applied sciences at the University of the West of England in Bristol, UK, who says he will call for more of them in 2021. He cites the success of the 2020 Royal Society of Biology's annual Careers Day, which he says drew 5 times the usual number of student attendees, including 100 from his department. "They open opportunities to anyone with access to the Internet," he says of virtual meetings, adding that they benefit junior scientists who can't afford the cost of far-flung conference travel.

Molecular pharmacologist Lauren May at Monash University in Melbourne, Australia, says that certain voices can dominate in-person conference sessions or classroom discussions. Conversely, she says, students are often more likely to pose questions or add comments to an online meeting's chat function than to speak up in a classroom or conference setting. May recommends conference apps that can help virtual attendees to connect with one another during or after sessions. She particularly likes one called Pollev that allows users to ask and answer questions among themselves during a presentation. Such tools, she says, can spur conversation more swiftly and easily than in person.

Mathematician Jude Kong at York University in Toronto, Canada, plans to keep using the video-conferencing software Zoom specifically to mentor disadvantaged students, often from minority ethnic groups. Kong, a member of the newly established Canadian Black Scientist Network, has been reaching out to high-school and undergraduate students through free public webinars such as Café Mathématique. Many, he says, aren't

RESOLUTIONS FOR 2021

Scientists offer their views on what's important for the coming year. **By Virginia Gewin**

As the world hopes for swift roll-outs of COVID-19 vaccines in 2021, researchers' ambitions are likely to still be constrained by the continuing pandemic and its effects. Amid shifting career priorities, *Nature* asked scientists for their advice to colleagues and what they plan to start, limit or keep doing.

Create boundaries. Researchers at all career stages whose workspace is mainly or exclusively at home should set firm limits on working hours, says Stéphanie Lizy-Destrez, who studies the design and function of future space systems at the Higher Institute of Aeronautics and Space in Toulouse, France. "The biggest challenge is to separate

professional and private lives," she says.

When France first imposed a lockdown in March, she examined the impacts of isolation on 80 graduate and undergraduate students who were confined to their small dormitory rooms on campus. She says that it's hard for people working remotely to separate personal and professional time. "There are no borders," she says. "Sometimes you don't take time for rest or leisure." In addition to establishing

"Let's write less and say more. Everyone's in the same boat."

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aware of funding opportunities for graduate programmes. “I will keep using Zoom to reach out to people in underserved communities,” he says. “I want to uplift them and encourage them to explore research.” He’s found that sometimes-shy students feel more confident contacting him virtually from home than they might have been in person.

Adjust expectations. Climate scientist Kim Cobb advises scientists to schedule more time than they expect to need to meet work expectations and family obligations. She struggled to stay optimistic this year as she juggled teaching three online classes, home-schooling four children and finishing a 770-page, US\$18 million National Science Foundation grant proposal, all in six months. “I call it my pandemic proposal,” says Cobb, at the Georgia Institute of Technology in Atlanta. “It’s been a learning curve.”

Advocate for remote work. Virtual working can still be effective for PhD students and postdocs even after restrictions lift, says Kevin Burgio, who was lead author on a paper this year that highlighted ten rules for doing a remote postdoctoral position (K. R. Burgio *et al. PLoS Comput. Biol.* 16, e1007809; 2020). Burgio, who is finishing his own virtual postdoc job in Connecticut with Environment and Climate Change Canada, a department of the Canadian government, says that clear communication between the laboratory member and principal investigator is key to success.

Particularly important, he says, is covering granular details such as how many hours to spend weekly on manuscripts or dissertations. “Having a direct conversation with your supervisor about expectations and how they may change is the most important thing,” says Burgio.

Support team well-being. Cobb urges principal investigators to be mindful of the power dynamics that could prompt students to work in the lab to please supervisors, especially if there is no clear direction for prioritizing their well-being. Her team works from home on computational and data analyses, manuscripts and grants. For her, she adds, any potential decrease in productivity is less important than her lab members’ health.

Lee Cronin, a chemist at the University of Glasgow, UK, says that the pandemic is a good reason to take the time to do research with greater impact. “Let’s write less and say more,” says Cronin. “Everyone’s in the same boat.”

Track pandemic career effects. Cobb calls for continuing data collection on the consequences of the pandemic on female academic scientists and those from minority ethnic groups. She has watched colleagues, particularly those who have care-giving roles,



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Mathematician Jude Kong now uses video-conferencing to interact with students.

withdraw their abstracts from conferences, walk away from proposals, forego writing papers, or abandon prestigious opportunities. She is concerned that career setbacks now will have lasting detrimental impact on young researchers’ career progression.

Information from data collection should inform strategies to address structural biases in the academic system, Cobb says,

“Put it in real terms with real-time losses to make clear how work time has been limited by the pandemic.”

such as extending start-up packages or augmenting the tenure and review process. “We have to firmly recognize the inequities that impact people every day and make sure we are not pushing people permanently out of science because they fall short of their own expectations,” she says. “Our response can’t be, ‘Try harder and hang on.’” Rather, she says, the scientific community needs to encourage researchers to be present for work however they can in these times, and to value their contributions.

May urges scientist-parents, particularly mums, to take careful notes on how the pandemic has directly affected their research output. In 2019, May co-founded Her Research Matters, a university-based group that supports equitable leadership. She says that documentation detailing achievements in the face of lost or restricted opportunities can

support applications for grant and fellowship extensions or annotate academic promotion packages.

Michelle Halls, group secretary of Her Research Matters and a molecular biologist at Monash university, says that it is crucial for scientist-parents to quantify hours spent helping children with school work, and to list missed conference-speaking opportunities. “Put it in real terms with real-time losses to make clear how work time has been limited by the pandemic,” she says. Parents should record specific dates of university shutdowns, travel bans and primary-school closures, she adds.

Spread knowledge. PhD student Roger Gonzales, who studies public health at the University of Nebraska Medical Center in Omaha, will carry on working in underserved communities to boost trust in science and awareness of COVID-19’s health effects.

Gonzales, who is fluent in Spanish, realized that non-English-speaking neighbourhoods around Omaha had little access to coronavirus-related information in their own language. So he created infographics in Spanish about avoiding infection, which have appeared in hospitals and clinics and on social media. He’ll continue his efforts to distinguish science from disinformation, particularly as vaccines become available so that he can reassure community members about vaccine safety. Often, he says, “science stays in academia – and that leaves a lot of people out”.

Virginia Gewin is a freelance writer in Portland, Oregon.