the files to phone-friendly versions using 'Documents to Go' so that he can carry all his data with him and can check them when he meets with his supervisor. "Loading everything digitally is a time-consuming task, but it's helpful when writing a manuscript, and later on I appreciate it," he says.

But will the portability and capabilities of these gadgets ever replace traditional paper lab notebooks? Toscano is not convinced; electronic devices don't mix well with chemical solvents, and paper notebooks never run out of batteries. And when virtual notebooks are shared between multiple users, sloppy mistakes can accumulate and the work becomes prone to sabotage.

But Vázquez is testing those fallibilities using an online program called 'Evernote'. Most lab notebook programs, he says, are designed for industry use — to guard and time-stamp sensitive proprietary or patient information — and are "crazy expensive". But with a low-cost Evernote subscription, Vázquez can store any kind of file and data, up to 1 gigabyte a month, in an organized and searchable fashion on a server that automatically syncs 'notes' between his devices. Some of these services are available in the freely available program 'Dropbox', although Evernote has six times more storage and more organizing options. "My plan is to get a couple more accounts and to start testing shared notebooks with a couple of my students, which should make it far easier to follow their progress," Vázquez says.

Of course paper notebooks tend to stay in the lab and do not beep distractingly. The portability of mobile devices can mean that scientists never completely disconnect from their work. "That's the hardest thing about this technology," says Graveley. "You can be available 24–7." He frequently turns the sound off on his phone so that he is not reacting to every call, text message or e-mail alert that comes in. But resisting the temptation to play games or check e-mail constantly is no different from avoiding the vices on a desktop computer, Toscano says.

When the iPad first came out in 2010, Graveley offered to buy one for each of his trainees, but they all refused, sceptical back then of its value. "The utility of these mobile devices is based on the apps that other people develop, so you don't know what they're going to be capable of next," he says. Now, with an explosion of apps written by scientists for scientists and many available at no cost or for nominal sums, it is hard to imagine smartphones and tablets not eclipsing the laptop, notes Carvajal, who says he would like to see them in the hands of "every single graduate student and postdoc". ■

Kendall Powell *is a freelance writer based in Lafayette, Colorado.*

TURNING POINT
Lisa Kaltenegger

Astrophysicist Lisa Kaltenegger is one of six recipients of Germany's 2012 Heinz Maier-Leibnitz Prize for early-career researchers. She divides her time between the Max Planck Institute for Astronomy in Heidelberg, Germany, and the Harvard–Smithsonian Center for Astrophysics in Cambridge, Massachusetts.

What is the most important thing that you've done to shape your career?

Move to a new country. Through travel and unfamiliar experiences, I learned how to think differently and explore alternative approaches to science — important for any young person. I pursued master's degrees in both astrophysics and engineering, from the University of Graz in Austria and the Graz University of Technology, respectively. But I did the research for both in other countries. With Erasmus mobility funding from the European Union, I travelled for six months to the Institute of Astrophysics of the Canary Islands, Spain; we were trying to detect extrasolar planets using ground-based telescopes. I also studied biomedical engineering at Johns Hopkins University in Baltimore, Maryland, where the Graz University of Technology had an exchange programme.

So you considered going into medicine. Why did you choose astrophysics?

Both fields interested me because I wanted to have an impact on society — I wanted either to work towards a cancer cure or to seek another Earth. I had offers to do both. But I got a job opportunity at the European Space Agency (ESA), which was designing a mission to look for other planets, and I could see myself doing this fascinating job for a long time. It wasn't necessarily a logical decision, because astronomy can be a risky career path. But I had engineering as a fall-back option.

What was the highlight of your time at ESA?

Helping to design and optimize a mission to search for habitable planets. I had very little experience, but the team encouraged creative thinking and ideas. I had to model what the atmosphere of a habitable planet would look like to work out how to find one — insights that later helped me to get a PhD in astrophysics from the University of Graz.

You didn't publish much of your PhD work. Was it difficult to get a postdoc?

I wasn't allowed to publish most of my work because the technology to look for planets was proprietary, and I couldn't very well publish data without details on how they were obtained. I wasn't aware of this limitation when I started. But I was one of the few people working on exoplanet characterization who had a background in engineering, so I knew how to make trade-offs between instrument design and detection capabilities that wouldn't hamper the science and would keep costs down. Doing presentations at meetings and workshops connected me with Wesley Traub, an astrophysicist then at the Harvard–Smithsonian Center, who invited me to apply for a postdoc.

How did you end up with positions at both Harvard and the Max Planck Institute?

After finishing my postdoc at Harvard, I got an offer from Max Planck to establish my own lab, but Harvard wanted me to stay. Luckily, I had funding — a German Research Foundation Emmy Noether award, which helps early-career scientists to build a team and achieve independence. Because I had this funding, I suggested that I split my time between the two institutes — spending nine months of the year in Heidelberg and three months at Harvard. Exoplanet characterization is not something that many people do in Germany, so there is an extra incentive to maintain international collaborations.

You've won multiple awards. Will any have an impact on your career?

The young-researcher awards mean the most because they give early-career scientists credence and notoriety. In hierarchical systems, such as in Europe, they help to level the field a bit. The validation comes from being nominated by a peer who thinks your work is exciting. Whether you get the prize is often a gamble, but the positive reinforcement from peer recognition keeps you going. ■

INTERVIEW BY VIRGINIA GEWIN

© 2012 Macmillan Publishers Limited. All rights reserved