

CAREERS

INDIA Website tells female researchers' stories **p.335**

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For some junior researchers, new laboratories can be a valuable alternative to more established ones.

LAB LIFE

Shiny and new

Recently established labs can be an attractive destination for junior researchers.

BY CHRIS WOOLSTON

Postdoctoral researchers and graduate students looking for a place to advance their training often share the same vision: a well-established laboratory headed by a prominent scientist who churns out high-profile papers with clockwork regularity.

But after Can Sönmezer finished his master's research at a large, prestigious lab at the German Cancer Research Center in Heidelberg, Germany, he wanted to find a different kind of lab in which to pursue his PhD — one where he could learn how science gets started from the ground up. "I decided I wanted to work in a relatively new lab," he says. "That was a big criterion for me."

Sönmezer found a lab that fitted the bill perfectly (see 'Choose wisely'). He's the first and only graduate student in the lab of

Arnaud Krebs, a molecular biologist at the Heidelberg campus of the European Molecular Biology Laboratory (EMBL), who opened his lab with Sönmezer in January 2017. So far, Sönmezer says, the experience has been exactly what he had hoped for. "I have the chance to establish my own system," he says. "Arnaud has things planned out, but he's also giving me the space and freedom to find my own direction on the project."

Old or new, big or small: every lab comes with a set of trade-offs. Labs that have just opened lack a track record and name recognition. And, by definition, leaders of new labs don't have the same level of managerial experience — at least in their current setting — as their colleagues at more-established facilities. But that doesn't mean that graduate students and postdocs should automatically steer clear of freshly minted labs. Junior scientists who can tolerate

the inevitable growing pains can usually find opportunities to build their own scientific skills while helping their principal investigator (PI) to make their mark. And if it all works out, early-career researchers won't just be a part of something new: they will be an integral part of something big.

THE NEW-LAB JINX

Athina Triantou knew what to expect when she started her PhD in Michael Imbeault's molecular-biology lab at the University of Cambridge, UK. Imbeault, who opened his lab with Triantou in September 2017, had warned her that things might be "weird" in the first few months, and he was right: simple procedures weren't working, and key pieces of equipment hadn't arrived. "It's the jinx of a new lab," Triantou says. "You have to start from scratch, creating basic protocols that in other labs are ►

► working just fine.” Those sorts of glitches caused frustration and delays, but they also gave her an insight into what it takes to build a lab. “You learn a lot in the process, and that’s the purpose of a PhD — to learn,” she says.

Not all trainees are willing to put up with such hiccups, so Imbeault had to be careful when staffing his lab. He says that he was looking specifically for someone who could tolerate and even embrace the challenge. Triantou ticked all the right boxes. “She was keen,” he says. “If she ever gets to start her own lab, she’ll know how that part goes because she’ll have seen it herself.”

When recruiting lab members, Imbeault knew that he also had to sell himself. Some junior researchers see new labs as risky, especially if they’re at a point in their career at which they need to publish papers. “Finding a postdoc is especially hard,” Imbeault says. “You don’t get a lot of good candidates, because you’re a new lab and you’re not super well-known. It’s a big challenge.” He did manage to land Santiago Morell, a postdoc with experience in three highly successful genetics labs, partly because Morell wanted to be near his girlfriend in Cambridge. “He happened to have everything I wanted,” Imbeault says. “I was very lucky.”

OVERCOMING SCEPTICISM

Timothy Fessenden, who studies how immune cells and tumours interact, wasn’t looking for a brand-new lab when he started his search for a postdoctoral position. “I was going after all of the big names in my field, but nothing clicked for me,” he says. He felt his fortunes turn when he found out that Stefani Spranger, a cancer biologist, was recruiting postdocs for her new lab at the Massachusetts Institute of Technology in Cambridge. Fessenden already knew Spranger from her postdoctoral work, and he



Molecular biologist Can Sönmezer.

CONSIDERING A NEW LAB

Choose wisely

Trainees thinking about joining a lab that is just getting off the ground should proceed with caution. Here are some steps to increase the chances of success.

- **Follow the paper trail.** A new lab might not have much of a track record, but the principal investigator (PI) will, says Michael Imbeault, a molecular biologist at the University of Cambridge, UK. He recommends checking the PI’s publication history to make sure they can turn ideas into papers.
- **Consider the surroundings.** A new lab that’s among other successful labs has a good chance of succeeding on its own, Imbeault says. That fact that he’s at Cambridge — one of the world’s leading research institutions — makes his new lab appealing to incoming students. Not only do they enjoy the university’s resources, but the institution’s prestige will carry weight for their careers.

That was one of the reasons that PhD student Can Sönmezer felt comfortable joining a start-up lab at the European Molecular Biology Laboratory (EMBL) in Heidelberg, Germany. “There’s a big

difference between joining a new lab at EMBL and one at a smaller institution,” he says. “EMBL feels like a safer bet.”

- **Personality check.** In a new lab, it’s especially important that everyone gets along, says Stefani Spranger, a cancer biologist at the Massachusetts Institute of Technology in Cambridge. Before signing up, the candidate should talk with the PI to make sure they are compatible in terms of both personality and science. When the time comes for Spranger to consider new PhD students, she plans to give everyone in her lab the power to veto applicants. “A good dynamic is key,” she says.
- **Build your own team.** Joining a new lab without a large group of built-in co-workers can be a lonely or stressful experience, says Karen Kelsky, the founder and president of The Professor Is In, a career-consulting company in Eugene, Oregon. Kelsky recommends gathering a team of four or more confidants that can include other scientists. “Together,” she says, “they can provide moral support, perspective and insight.” **C.W.**

felt that her lab would be a great destination. He had the microscopy skills that she needed, and she had exciting plans about fresh ways to harness immune-system cells to fight cancer. “We kind of interviewed each other over a series of coffee conversations,” he says. “I was looking for someone whose ideas aligned with mine. Her offer to hire me was a great honour and a huge relief.”

But when he mentioned his plan to join the Spranger lab to his PhD adviser, he was met with scepticism. “It was the reaction you might expect,” he says. Like many others in her position, his adviser wanted him to find a lab that had a long history of turning out successful scientists. “New PIs don’t have any track record,” Fessenden says. “It’s like someone who wants to take out a loan for a house but doesn’t have any credit.” But as he talked more with his adviser, she came around to his point of view. “It made sense,” he says. “Spranger’s lab and her focus were such a perfect fit for me that it seemed inevitable that it was worth it, whatever the risk.”

Funding issues can create feelings of uncertainty when joining a new lab. Imbeault notes that his starting grant leaves him with limited resources to recruit lab members. He’s planning to bring in two master’s students over the summer, but says that hiring for other positions will have to wait. And Sönmezer, for his part, wonders whether he’ll have trouble landing grants without the imprimatur of a famous, long-lived lab. “Money attracts money, and new labs may have a smaller chance to acquire

additional funding,” he says. “Big labs that already have money to pay for postdocs often get postdocs who are independently funded.” Likewise, he wonders whether it might be harder for a PhD student from a newer, less-well-known lab to find a prestigious postdoctoral fellowship after graduation.

The funding in a new lab might not be lavish, but Spranger thinks that it should be relatively stable. “A younger lab that’s just getting started has a start-up grant,” she says. Such grants vary in size, and some PIs manage their money better than others, but the funding exists for the first few years. “That money will be there, as long as the PI doesn’t over-hire,” says Spranger. In some ways, she says, the funding in a new lab is more predictable than in a slightly older lab in which the PI is about to apply for their second major grant: if that money doesn’t come through, the lab can fold. “There are never any guarantees,” she says.

THE UPSIDES OF A NEW LAB

If the match is right, a new lab can have upsides other than stable funding. Graduate students and postdocs are likely to have a lot of in-person contact with the lab leader, something that doesn’t always happen in bigger, more-established labs. Triantou says that she can knock on Imbeault’s door whenever she has a problem, a question or a new idea. Likewise, Sönmezer says that he has a close working relationship with Krebs, his PI. “Arnaud and I have a lot of face-to-face talks,” he says. Some large labs, he

points out, can publish two *Nature* papers in a year — but students and postdocs in that lab might see their PI only twice in that year.

Sönmezer feels that he doesn't need to worry about being overlooked or ignored. Krebs is committed to his success, and for good reason. The first couple of years can make or break a lab, so PIs will do what they can to keep everyone moving in a positive, productive direction. And because the PIs are often still early-career scientists, they might be better able to offer career advice than more-senior faculty members elsewhere. "I do feel some responsibility for Arnaud's career," Sönmezer says. "He has my back, so I feel like I have to have his."

Even though he has a lot of contact with his PI, Sönmezer has also found a degree of independence. In a larger lab, he could have expected lots of guidance from postdocs. But as his lab's only trainee, he has to work things out for himself. "It's challenging because no one is there to tell me to put tubes here and solutions there," he says. "It's time-consuming, but it's a good career investment."

NEW LAB, BIG IDEAS

Imbeault thinks that his lab has another selling point: he's investigating a hot topic that could lead to several discoveries — and the papers to match. Specifically, he is scrutinizing a class of proteins that have an important but little-understood role in DNA binding. "You could make a big discovery here that we can't even predict," he says. "There is more potential for novelty."

Imbeault is quick to add that not all labs conform to generalizations. Some long-entrenched labs manage to pursue hot topics, and some new PIs are already out of fresh ideas. Likewise, some big-name PIs manage to devote plenty of time to their trainees, and some new PIs rarely make an appearance. In the end, he says, the age of a lab isn't as important as how the lab works.

Fessenden says that he feels fortunate to be in Spranger's lab. "She's so easy-going and unstressed," he says. "She brought homemade cookies and mulled wine to a lab meeting. She wants us to be relaxed and happy."

For him, it all goes back to a piece of advice he got from a chief executive of a large drug company. "He told me, 'Wherever you work, make sure you're working with interesting, motivated people.' I took that to heart." ■

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INDIA

Website tells women's stories

Resource celebrates the careers of India's female scientists.

BY HARINI BARATH

Two science journalists in India continue to build on *The Life of Science*, a multimedia website that they designed and launched in 2016 to highlight the research and lives of more than 100 women in the country.

The site, founded and run by Nandita Jayaraj and Aashima Dogra, aims to chronicle the scientists' experiences in the lab and field. Jayaraj and Dogra, who work full-time on the site, compile feature stories, blogposts, podcasts, video and picture features about the women, whose work spans the fields of science, technology, engineering and mathematics (STEM).

The journalists met in 2014 in Bangalore, while working on a now-defunct children's science magazine. When this shut down in 2015, they decided to explore their mutual interest in science communication. Dogra had already planned to travel the country on a brief busman's holiday, and visited the Indian Agricultural Research Institute in Kalimpong to talk to women who worked there. Meanwhile, Jayaraj was interviewing geophysicist Kusala Rajendran at the Indian Institute of Science in Bangalore and biophysicist Aruna Dhathathreyan at the Central Leather Research Institute in Chennai.

When the two journalists conferred about the information they had gathered, they decided to create a website to publicize the stories. "We were curious about the science under way in laboratories in our back yard," says Jayaraj about the site's early days. "We also wanted to break the stereotype of the scientist as an old male person." As the two began writing full-time, they crowdfunded for their work on the Indian platform BitGiving.

Jayaraj and Dogra have since launched a second campaign to fund their work on the site, which includes compiling some of the content into two books.

Each scientist's story offers a glimpse into her world — from the physical environment in which she lives and works, to the nature of her research and how she reached her present position. "I particularly like how the narratives let us see the woman behind the science and scientific journey," says Vidita Vaidya, a neuroscientist at the Tata Institute of Fundamental Research in Mumbai, who is featured on the site.

The site showcases India's diverse research



The Life of Science profiles ecologist Ovee Thorat.

landscape. Some of the scientists work with state-of-the-art equipment such as dilution refrigerators, confocal microscopes and high-performance computing clusters; others make the most of sparse funds and scant supplies.

Yet the stories' common threads resonate with many others who aspire to, or are navigating, a scientific career: the struggles to balance family life and career, and to counter bias and stereotypes.

The interviewees offer ideas for ameliorating some of the struggles, such as establishing campus child-care facilities and promoting female scientists into leadership positions. "Nothing on this scale has ever been done before," says Vaidya. She hopes that the site can help bring together those who are profiled, as well as other women who work in STEM in India.

Jayaraj and Dogra continue to find more women to profile. Viewer numbers and other metrics are not available, but the developers intend to continue the site in perpetuity. Indian online news sites including *The Wire* and *Firstpost* have syndicated some of the articles.

Those profiled are delighted at the chance to connect with readers. Number theorist Kaneenika Sinha at the Indian Institute of Science Education and Research in Pune has received e-mails from parents seeking suggestions for training their mathematically talented child, junior scientists who plan to repatriate and want 'insider' information, and students with questions about her work.

Jayaraj and Dogra are experimenting with different formats, including photo stories, cartoons and podcasts. "We see *The Life of Science* not really as an entity or 'our' project," the two say, "but what it stands for — and that is the voices of women in science." ■

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To read an interview with the co-founders, see: go.nature.com/harini