

Q&A: Historian of science Jahnvi Phalkey starts a museum

The founding director at Science Gallery Bengaluru in India aims to “bring science back into the culture.”

Not for the first time, in late 2017, Jahnvi Phalkey took a sharp turn in her career: She left King’s College London, where she was on the faculty as a historian of science, to establish Science Gallery Bengaluru in India.

Years earlier, after earning two master’s degrees in civics and politics, she pivoted for her PhD to study the history of experimental nuclear physics in India. This time, though, the decision to switch directions was harder: It involved both moving across the world and giving up her academic dream job and tenure. “I became a difficult person to live with,” she says. “Finally, my husband asked, ‘When you are 70 will you regret having done this? Or will you regret not having done this?’ I decided to give it a try.”

Part of an international network of galleries that focus on bringing art and science together, the Bengaluru site opened its doors in January 2024 with an exhibition on carbon. It is currently working on a year-long quantum festival to coincide with the 2025 International Year of Quantum Science and Technology (see *PHYSICS TODAY*, January 2025, page 7).

Phalkey oversaw permitting, design, and construction of the gallery. She is also in charge of fundraising and managing people. Along the way, she says, “I have been demoralized and frustrated. I have had some very low lows. But I never felt like quitting.” And now that the gallery is open, she says, “I look at it and think, ‘Why did I think I could do this?’” Her favorite parts are designing a new kind of public space for



JAHNAVI PHALKEY. (Photo from LastBenchStudio.)

knowledge and conceptualizing ideas for the exhibits.

PT: How and why did you make the switch from civics and politics to the history of science?

PHALKEY: I did my undergraduate studies and my first master’s degree in Bombay [now Mumbai], my hometown. After my second master’s degree, which I did at the University of London on the politics of Asia and Africa, I returned to India to do a PhD at the Indian Institute of Technology Bombay. I was working on silent cinema. But about a year into my PhD, I began to feel that the kinds of questions I was expected to answer were not very interesting to me. The questions were all meant to be about why filmmakers chose certain topics and how that related to the sociopolitical context and things like that.

At that point, I didn’t know there was a discipline called history of science and technology, but I knew I was not happy with what I was doing. I wrote a bunch of applications to study abroad.

The one I had the least idea about was Georgia Tech and the history of science. I told myself that I would try it for six

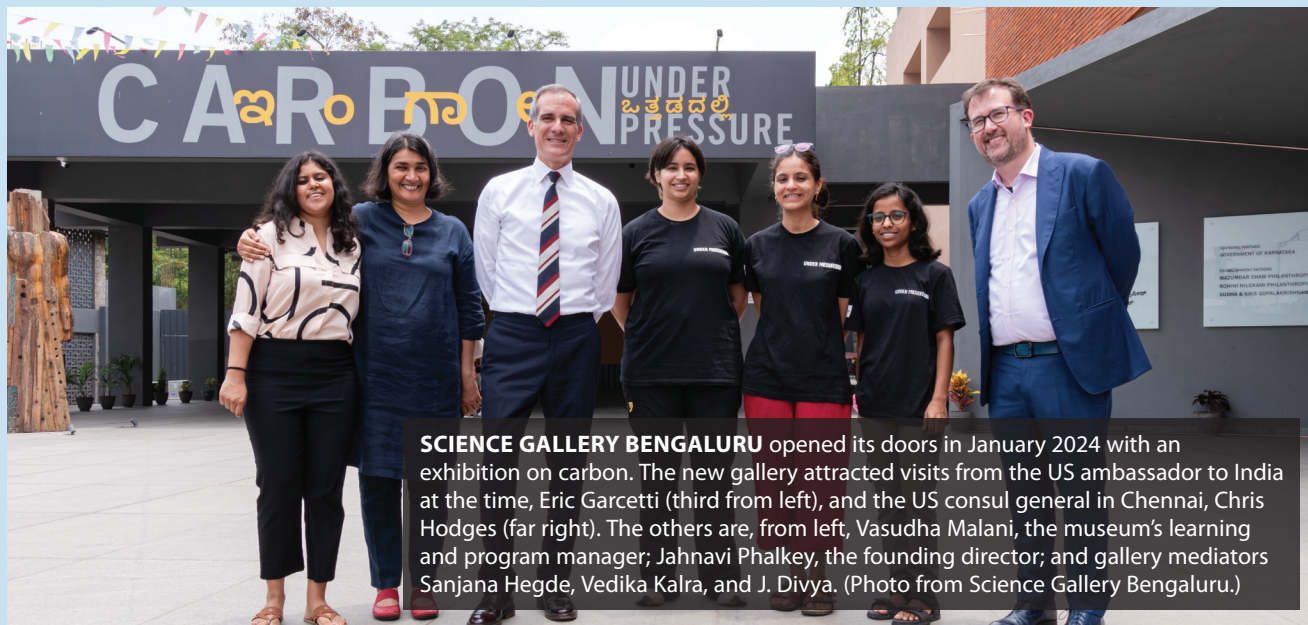
weeks, and if I didn’t like it, I would switch to Sciences Po [the Paris Institute of Political Studies], where I also had an offer of funding. I went to Georgia Tech in 2000 and got my PhD there in 2007.

PT: What did you like about the program?

PHALKEY: I felt like I was learning things I knew nothing about, and they were exciting. I also liked the cohort I was studying with. The joy of American graduate school is that it leaves you room to explore. You are allowed to float until you find what you want to sail with. That was wonderful.

PT: What did you end up sailing with?

PHALKEY: In the first or second semester, I became drawn to certain questions about Cold War history of science. I felt that if I wanted to write a thesis on something along those lines, then I needed to know some physics—enough to be able to talk with physicists convincingly. If someone said “field,” “particle,” “bombardment,” or “cyclotron,” I could not *not* know it. That prompted me to audit undergraduate physics courses.



SCIENCE GALLERY BENGALURU opened its doors in January 2024 with an exhibition on carbon. The new gallery attracted visits from the US ambassador to India at the time, Eric Garcetti (third from left), and the US consul general in Chennai, Chris Hodges (far right). The others are, from left, Vasudha Malani, the museum's learning and program manager; Jahn timer Phalkey, the founding director; and gallery mediators Sanjana Hegde, Vedika Kalra, and J. Divya. (Photo from Science Gallery Bengaluru.)

Among the books I read, the one that made me choose not only my PhD topic but also the area I would research with utmost love was called *Lawrence and His Laboratory: A History of the Lawrence Berkeley Laboratory*, by John Heilbron and Robert Seidel. In my work, I could show that what happens with the state, what happens with policy and regulation, deeply affects what can or cannot happen in a lab. And also that institutions of the state are formed around research to determine the course of research. Heilbron and Seidel's book allowed me to see how totally enmeshed politics, science, and society are. It set me on my path.

During my coursework at Georgia Tech, I felt we were studying history as though science happened only in the US and Europe. But I thought something must have happened in India too. That curiosity took me back to India. I studied six labs, the first ones that wanted to establish and continue experimental nuclear physics in India.

PT: How did it work out?

PHALKEY: The state of Indian archives is quite poor. When I was doing my PhD, in many ways I had to assemble my own archives—by begging and borrowing. You meet individuals, establish trust, and ask people to do you favors.

When I started writing, I realized I could put together a decent narrative from the first three labs—in Calcutta, Bangalore, and Bombay [now Kolkata,

Bengaluru, and Mumbai]—from when they were trying to establish nuclear physics starting in the late 1930s until the 1960s. The competition between those labs, their relationships with each other, and how they functioned before the Second World War, after the war, and during Indian independence became a narrative that could be woven together in an interesting way. That became my dissertation. Later, I made a film about one of the others: Chandigarh has the world's oldest functional cyclotron. It had been built at the University of Rochester in 1936 and in 1967 was sent to India.

PT: Where did your career take you after you finished your PhD?

PHALKEY: My first postdoctoral project was at the Deutsches Museum in Munich, where I was a scholar in residence. Then I taught the history of science and technology and other courses. In 2011, I got a faculty appointment at King's College London. I got tenure, and I was there until seven years ago, when I moved to India to establish Science Gallery Bengaluru.

PT: What enticed you to move back to India?

PHALKEY: I was not looking to leave my job in London. I think I was in the regular band of misery that academics usually occupy—you know, doing fine.

But a recruitment agency called me, and the proposal sounded interesting. I

was having discussions with museum board members about what needed to be done—not having an interview—because, in a very respectful way, I had nothing to lose. Then they invited me to India.

I met with a group of 13 people who interviewed me. They offered me the job that same day. Then I spent a few miserable summer months trying to decide whether to take it.

PT: Tell me about Science Gallery Bengaluru.

PHALKEY: The vision statement that I operate with is “Bring science back into the culture.” Our exhibitions are interactive and focus on intersections of art and science. Activities include hands-on workshops, master classes, tutorials, film and zine making, hackathons, game development, and more. This year the topic is quantum; a possible future topic is the calorie, which would be about food, nutrition, and energy and the journey of a measurement from physics to nutrition.

We are also creating resources like portable exhibits, online learning resources, and activity handbooks that will go to public libraries. By reaching the libraries, we can potentially reach 5 million young people.

The pioneering idea in Bengaluru is the public-lab complex. We have five experimental spaces that we hope will soon go live. We will run them on a fellowship model, where we invite pro-

posals and bring people from across disciplines to share the space. Each lab can take 15–17 people. We will have five fellows that come for 10 months and other spots on a more short-term, ad hoc basis.

The idea is to get people in to explore an idea and fine-tune it in conversation with others to the point where it can be taken to a university or industrial lab. I am aiming at anyone who has passion.

Two things I insisted on are to reduce barriers to entry: We remain free to

the public, and everything we do is bilingual—in the local language Kannada (which, unfortunately, I do not yet speak) and English.

PT: Do you miss being a professor?

PHALKEY: I miss supervising my PhD students. I miss the reading and writing—well, I don't love writing, but I do want to write. My mind feels dehydrated; it has been deprived for a long time of the nourishment of new knowl-

edge and intellectual insights gleaned by reading, writing, and thinking.

PT: Where do you want to be in five years?

PHALKEY: I am actively thinking about that. My contract runs out in three years. The board and I will evaluate whether the institution is strong enough and whether it needs me or needs fresh blood. I could see myself returning to academia.

Toni Feder

Women leave physics at a similar rate as men, bibliometric study suggests

Although women continue to be underrepresented in the physical sciences, the rate at which they leave the field is on par with that of men. That's according to an August 2024 study in the journal *Higher Education* that examined the publication patterns of researchers in 16 broad disciplines within science, technology, engineering, mathematics, and medicine.

Using data from Scopus—a global database of publications and citations—Marek Kwiek and Lukasz Szymula of the Adam Mickiewicz University in Poznań, Poland, tracked the publishing careers of researchers in the 38 countries of the Organisation for Economic Co-operation and Development. They focused on more than 140 000 scientists who began putting out papers in the year

2000 and more than 230 000 who started doing so in 2010; both groups were tracked until 2022. A cessation in publishing before 2019 was used as the indicator that a scientist had left research.

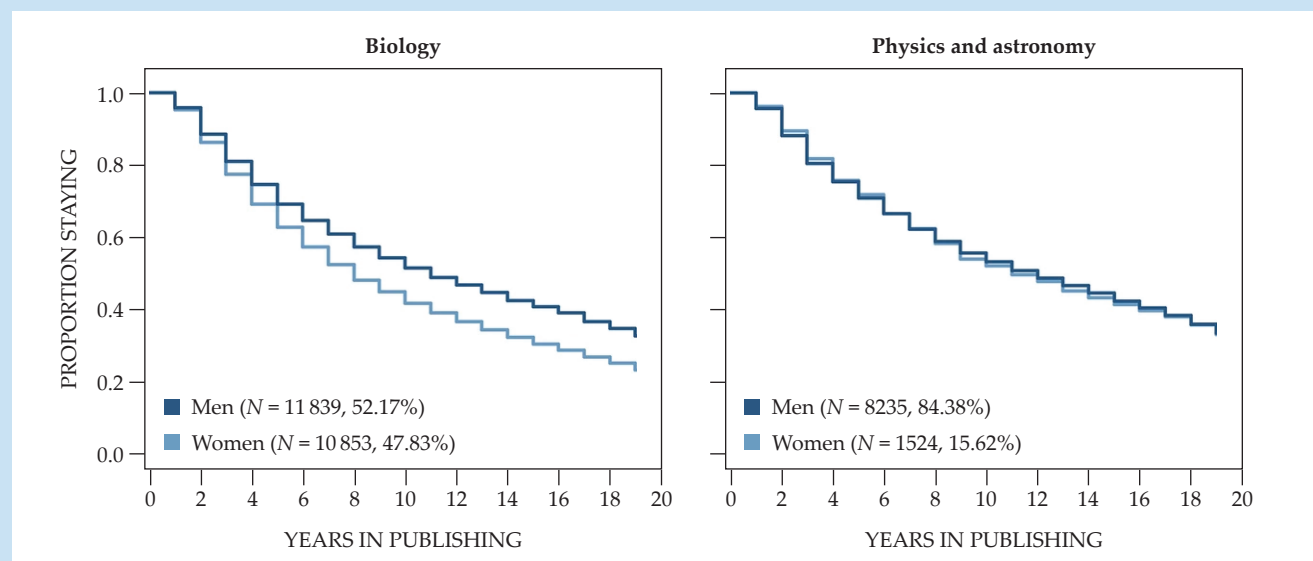
Kwiek and Szymula found that about one-third of scientists who started in 2000 had left after 5 years, half had left after 10 years, and two-thirds had left by 2022. The differences in attrition rates between men and women varied by discipline. In biology, women, who made up nearly 48% of the year-2000 cohort, left at significantly higher rates than men throughout the study period. In contrast, in physics and astronomy, the attrition rates were similar for men and women. Of the 1524 women, 28.1% had left after five years and 66.9% had left by 2022; for

the 8235 men, those numbers were 29.2% and 66.5%, respectively. That trend also bore out in fields such as computer science and mathematics.

The authors note the limitations of a bibliometric analysis; for example, some of the researchers who were classified as leaving the field may have taken a science-related job that didn't involve publishing research. And recent studies with different methodologies have suggested that in academia, women leave at higher rates than men at every stage of their careers.

For a breakdown of attrition rates and related data presented by Kwiek and Szymula, see <https://doi.org/10.1007/s10734-024-01284-0>.

Tonya Gary



(Figures adapted from M. Kwiek, L. Szymula, *High. Educ.*, 2024, doi:10.1007/s10734-024-01284-0.)