Israel's compulsory military service, and breaks between degrees that he spent earning money to support his growing family, Gurwitz finished his PhD at the age of 34 and his postdoc at 37, in 1989. He wanted his children to grow up in Israel near their grandparents, but faced a paucity of available academic positions. So he worked as a research associate instead, first at a government institute and then at Tel Aviv University.

Gurwitz organized collaborations and authored papers, and eventually was able to submit his own grant applications. He volunteered to teach courses, which attracted graduate students to his laboratory, although he had to co-mentor them with tenure-track professors. But a tenure-track post continued to elude him.

The tide turned in 2014 when Gurwitz won three major grants and his dean advised him to apply again for a tenure-track position. This year, at 65, he was hired as a tenured associate professor. "I believe this sets an Israeli record for age at first academic appointment," says Gurwitz, who encourages others not to give up. "Persistence should eventually pay off," he says, "even though it may take many years."

Paul Bédard, a geological engineer at the University of Quebec in Chicoutimi, Canada, also had to bide his time for years before landing an academic position at age 50. No such jobs were available when he first tried in 1995 after a postdoc. So he spent five years working as a consultant for companies, and another decade as a lab manager at the university.

"Persistence should eventually pay off, even though it may take many years."

When a faculty position suddenly opened, Bédard was there to jump in. But he knew there was no time to waste. "You cannot say, OK, I'll take five years slowly to build," says Bédard. "You get in on Monday, on Tuesday you have to be on a grant application, and on Friday have the money in." Industry experience helped him to start at a sprint, he says, as did selecting a tight focus for his research.

And although a science career can be slow to start, or require a scary transition, there's reason for scientists who begin late to hope for the best. A 2015 study by the American Institute for Economic Research reported that 82% of those who attempted to change careers after age 45 were able to do so (see go.nature.com/2wzckct). They were also happier in their new jobs.

"It doesn't matter if you're going to start at 20 or at 40 or at 60," says Pagán. "Just do it." ■

Amber Dance *is a freelance writer in Los Angeles, California.*

ADAPTED FROM GETTY

COLUMN

Writing takes work

Professors and students alike can benefit from attending a writers' workshop, says **Eli Lazarus**.

This year, I've spent a lot of time working with graduate students on their writing. They were preparing manuscripts for peer-reviewed publication, and wanted to lead the writing process from first cut to submission. The result, in addition to a stack of drafts, has been an unexpected and welcome education for me — a raft of challenges in learning to write, in teaching writing and in the craft of writing.

Writing is hard work, even for people who enjoy it. In my most impatient moments, I think of what William Shawn, legendary editor of *The New Yorker* magazine, once said to writer John McPhee: "It takes as long as it takes."

But for anyone undecided about whether they like to write, 'as long as it takes' can be a tough sell. Engaging with the writing process requires unequivocal patience — with oneself, with iteration, with the open-endedness of simultaneously creating and solving a puzzle. Such dependence on patience makes writing tricky to learn and tricky to teach. Every adviser has a different way of guiding student writing. For each student, an adviser's default approach — usually some mix of trial, error, preference and habit — will either resonate or rankle. New graduate students arrive with formidable talents, but if they need to learn how to write, how do they start? What shape does that learning experience actually take?

Between starting secondary school and finishing college, I participated in at least eight writing programmes and workshops. Some were three-week intensives; others ran for three months. The first focused on personal essays. Several covered technical exposition. Two were for poetry. Cumulatively, they delivered essential lessons.

One is that even technical writing is a creative practice, which means that commenting on someone's technical material can evoke an emotional response. Another is that unpractised attempts are clumsy, and a clumsy critique of an unpractised attempt can feel excoriating. A third lesson is that most students — and advisers — with scientific training rarely encounter the formal rules of constructive criticism that are so embedded in artistic training. Art students quickly learn that their work is an object, and as such, can be treated objectively by themselves and others. Once they understand objectivity, they also understand that critical comments on their work are not personal criticisms. In terms of emotional effort, an objective perspective is less exhausting — but both the writer and the critic need to be on the same page.

There was a stretch when I was regularly pushing student co-authors to the point of frustration. I hacked around with an overly heavy editorial hand. Projecting myself back into the setting of a writers' workshop has helped me to readjust. I now reply to every draft with the same question: "What kind of comments would you like from me?" I regularly remind myself that if the structure needs work, I should not also make copy edits. A retired high-school English teacher once told me that he marked student papers with the thickest crayon he could find. "There's a limit to how detailed your comments can be when you're using a dull crayon," he said, "and that's for the best."

Everyone can benefit from a good writers' workshop. If a workshop can help students learn how to be objective readers of their own work, then a workshop can likewise help advisers to be better guides through the warrens of the writing process. Time in a writers' workshop is an investment in professional development, in fruitful collaboration, in the practice and improvement of a craft. I'll be encouraging any graduate students I work with to enrol in one — and I might check out a few myself. ■

Eli Lazarus *is a geomorphologist at the University of Southampton, UK.*