

A conversation with Jennifer Rohn, London

Biology's 'Lady of Letters'

Jennifer Rohn is cell biologist, editor, novelist, science writer and blogger. Here, she talks about creative writing and blogging, 'evil' yeast, revolutions in science and women in the laboratory.

Jennifer L. Rohn

has been writing about science throughout her biological research career. She has actively defined and promoted a new literary genre, 'Lab Lit' (Laboratory Literature) through her website, *www.Lablit.com*. Since 2007, she has had an internet science blog, 'Mind the Gap', on *Nature Network* (<http://blogs.nature.com/ue19877e8/>). Her first novel, *Experimental Heart*, based in a realistic laboratory environment, was published in 2008 by Cold Spring Harbor Laboratory Press. Following a PhD on retroviruses with Julie Overbaugh at the University of Washington in Seattle, she moved to London for a postdoc with Gerard Evan at Cancer Research UK, where she studied apoptosis and the oncogene c-myc. Her boss then decided to move his lab to America. "I had only just escaped from America and I didn't want to go with them. So I ended up going to the Netherlands to work in a small biotech company in Leiden. Unfortunately, the company went bust after four years, which was incredibly inconvenient. I was unemployed! I wrote my second novel and tried to find a job; then I got a job offer from *BioMed Central*, the open access publisher." She worked as journal editor and journal manager for four years, then missed science so much that she decided to devise a way to return with the help of Buzz Baum at University College, London. "He got wind of the fact that I wanted to go back to the lab and he devised this crazy scheme. But the only reason it worked was because I got a career re-entry fellowship from the Wellcome Trust. These are normally designed for women who have had babies but you don't have to be a woman with a baby to get one of these, it's for any career break. I was really fortunate to get this grant." For the last three years, she has been doing high throughput RNAi screens, looking for novel factors that influence cell shape.



Lab Times: You represent a kind of transition between laboratory research and literature about science. Which came first, writing novels or the creation of Lab-Lit.com?

Jennifer Rohn: My interest in science and fiction came from reading. Specifically, when I was in graduate school in the 1990s; somebody gave me this new book that was circulating around the campus, Carl Djerassi's 'Cantor's Dilemma'. And we were all just gobbling it up because it was so amazing to see a story set in the lab. Most of us had never read anything like it. A novel set in the laboratory with guys with test-tubes discovering things, all the intrigue and everything. It was a fabulous book because it was seen to be almost unique. When I went to the bookstore and the libraries, I couldn't find anything else like it. That was where my interest came from. I thought, this is crazy. Why aren't there lots of books about this? Science is a great topic for a novel. It's really colourful, with all sorts of interesting characters and set pieces. I was just shocked. That was the realisation, there and then. I thought, OK, if there aren't any, then I'll write my own. So I did, but then I thought, well, this isn't going to do it either. I've got to somehow promote the idea that it would be good to have more of this literature about science. That's when I set up the LabLit website. So, my interest was founded in the 90s, I wrote my first novel in 2000 and LabLit was set up in 2005.

The idea behind LabLit was: How can we promote this idea and get more books read and get more people writing? I didn't just want to highlight the fact that there are very few novels about science and then promote them a lot. I also wanted to reveal what it's like to be a scientist. To tempt people into thinking, 'Wow, this is an interesting setting; I might want to write a novel myself'. You can go to LabLit and read articles about what real scientists are doing. The mixture of fiction and fact at LabLit is calculated to bring in interest, by presenting both the fact of the laboratory lifestyle

and literature about it. I'm equally interested in both really.

You rapidly received a fair amount of recognition for LabLit with articles in Nature, other academic journals and national newspapers. How did you sell the idea to them? For example, a whole page in Nature ('Experimental fiction', 2006, 439, p.269)?

Jennifer Rohn: That initial *Nature* piece was really lucky. The whole thing was luck. At a party, I ran into a friend of mine who worked at *Waterstones*, the booksellers. She said, 'Oh, Lab Lit sounds interesting, you should do us a table. We'll get together a bunch of Lab Lit books and put up a big poster and see if people buy them,' which was a brilliant idea. They were very kind and let me do it. Then they sold a lot of copies of these books, some of which, incidentally, were very hard to find. Once a book is no longer current, it's actually quite hard to get it into a bookshop. It's a problem of logistics – there are so many millions of books published. If something was published in the 80s or 90s, it is very hard to find. So, in fact, it took a lot of time just to find enough books to put on a table of Lab Lit novels.

Anyway, I thought, this is a great idea but this is just *one branch* of *Waterstones* in London. I need to make more of this. So I approached Nick Campbell, the editor of *Nature*. I e-mailed him and asked, 'Hey, are you interested in this idea? I did a little experiment,' and I turned it into an experiment. I asked for the sales figures of all these books before the table – those that they normally stocked – and then after the table. I could show that just highlighting them on a table was enough to get people to buy them, to stimulate interest. He was intrigued by that. Okay, it was not a real scientific study, more anecdotal. But that's where it started. I got loads of e-mails after *Nature* published my Lab Lit article – a lot more interest. That *Nature* piece was published in January, 2006. Before that, there was a whole year of me just basically updating the site every week. I would look at my referrals and see maybe six referrals a day, or ten hits. It was really slow to get going. But once it picked up, I got a lot of interest. Not just from scientists but from people interested in science – artists and writers. I was really pleased because apart from a little of my own money, I didn't put in much more than my own effort. I didn't get any grants and I don't pay my authors (which

is a tragedy). Now, it's just coasting along. People submit enough things that I don't have to write any more. I get enough content that I can even reject things, which is quite nice.

You're still the chief editor?

Jennifer Rohn: Yes, but I do have a few people on staff now. The 'Labliterati', we call them. These are people who volunteer their time. We have people from all over the world contributing. It's basically me and a handful of interested volunteers. It takes a lot of time, maybe ten hours a week. But it is fun and it has brought me a lot of opportunities. I do think it has raised the profile of literature about science, that it has achieved some of its goals. Not single-hand-

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edly. Since *Lablit.com* was launched, there has been quite an increase in interest in this topic. Obviously, I can't take all the credit but I think I've played a little part.

You've also written articles about the 'unsexy image' of scientists. For example, a three-page analysis published by the Biochemical Society: 'Why aren't white coats sexy?'

Jennifer Rohn: Actually, they approached me to do that. But it's still true. I'm currently reading 'Solar' by Ian McEwan, which is a best-selling new Lab Lit novel, and it's full of boffins – balding, ageing, geeky, unsexy men. It's great that he's written this book. It's great that there are scientists in his book but come on, can't we get beyond this? I don't understand because television and movies have absolutely no problems sexing up scientists. The image of the boffin in movies and TV has long gone. Scientists are gorgeous, preternaturally young and attractive 20-somethings, with designer spectacles and beautiful hair. Yet in novels, they still tend to be fairly stereotypical. Some Lab Lit does it very well, with lots of female scientists. But in general there's not the variety. You still tend to get this boffin thing going. I don't know why it is. People must get off on it.

But forensic science is an area that seems to have completely taken off in fiction and television?

Jennifer Rohn: This is the thing about death and murder: people can't get enough of it. It's the voyeuristic interest in death. In that case, I think science is riding on the coat-tails of Death. Everybody loves a police procedural, a good dead body. Obvious-

ly, if you can sex it up with a bit of science, it gives a new angle on an old fascination.

Can we talk about your first published novel, 'Experimental Heart'? It's about love in a London cell biology laboratory?

Jennifer Rohn: In fact, it's set in the laboratory where I did my first post-doctoral fellowship. I don't mention it, I actually changed the name, but the cover of the book is that building. And the lit window on that cover is my old lab on the fifth floor, which is sadly no longer a lab; it's now an equipment park. The setting is real but the rest is completely fictional.

I was fascinated by the phenotype, I suppose, of the British male. And how he seems to be very, very reluctant to act. I was a new American ex-pat in London and my first impression was of these interesting British males who just wouldn't do things. They would just talk. I was interested in that as a scientist character. I thought it would be nice to have a reluctant British male hero, who has to be dragged, kicking and screaming, into action.

It was actually inspired by one late night in the lab: I looked out the window across the courtyard and saw somebody in another lab. Not a sexy woman in a white coat, as in the novel, but just someone. I remember thinking, this is a very interesting idea. You can think you're all alone in this lab, yet there's someone else in another room, and they could be looking at you the same way. I thought that was a nice metaphor for science. How it is such a lonely endeavour but also so communal. You can feel like you're alone but, actually, you're in a vibrant community of people and you are never really alone in science.

It's a thriller with biotechnology intrigue and a kidnapping?

Jennifer Rohn: Yes, that's written on the back cover. It probably shouldn't have been

put there because it's a bit of a spoiler. The hero, Andy O'Hara, rescues his colleague but I am not going to tell you what happens next.

When did you start writing the novel?

Jennifer Rohn: In 2000. I wrote the first draft of 'Experimental Heart' in about four months. That was while I was employed at the biotech company. I did it after hours. I really enjoyed coming home and writing. It did not interfere at all with my science because the company was really a '9 to 5' sort of place. So, there was plenty of time to do writing.

But it took you several years to get it published?

Jennifer Rohn: Yes. It took eight years. I had an agent in London, who immediately wanted to represent me but she just could not sell the manuscript. We got so many positive comments. In the publishing business, they give you little peer review reports. If you're working with a literary agent, the publishers don't simply reject your manuscript; they actually send a letter to explain why they rejected it, sometimes in excruciating detail. But most of these editors were saying, 'This is a great story, great characters, page turner, rip-roaring good tale but science? Nobody is interested in science! I don't think this is going to sell. Sorry.' Eventually the agent gave up and I ended up selling it myself.

In fact, I'm sure it was due to that *Nature* article because that's how I met John Inglis, the publisher at Cold Spring Harbor. He read my *Nature* piece and got in touch. We talked about science and literature. We wanted to do some projects together and eventually he bought my novel. So, again, it was all down to that.

Is this the first novel that the Cold Spring Harbor Laboratory Press has ever published?

Jennifer Rohn: It is. They took a big risk. I am very grateful to them because it was really a bit of a step into the dark. But I've been quite pleased; the book has made a little profit. They're onto a second edition, it's still selling. And they have just agreed to buy my second novel.

What's the title of the second novel?

Jennifer Rohn: 'The Honest Look.' It's set in the Netherlands in a biotechnology company. My novels are following me around the world.

Is it also a thriller?

Jennifer Rohn: It's a romance with a little psychological thriller angle. It is a bit subtler than the previous novel. This was based a little on my experiences, in that I went into this biotechnology company that only had one product, whose science was just way too good to be true – a magic-bullet sort of thing. I thought, wouldn't it be funny if a newcomer came into a company like this and accidentally discovered that the entire project was fatefully flawed? I hasten to add that is not what actually happened in my company. The science turned out to be true. But in the novel, I thought, what would happen if you were a 'newbie', not very confident? You go to the Netherlands, join a company that's just about to go into clinical trials with this drug, and 'oops', you do an experiment that shows that their drug is based on a premise that is completely wrong. I thought that would be a great topic for a novel and that's what the book is about: what happens to this person? What does she do when she finds out? And what happens as a result? I wrote that in Amsterdam, in 2003, when I was unemployed.

When will this novel come out?

Jennifer Rohn: It should come out in October, all going well.

When did you start your Nature Network blog, 'Mind the Gap'?

Jennifer Rohn: I was approached before *Nature* launched their blogging platform in 2007 and asked if I would blog for them.

In some of your first blogs, you write about the worry of going back to the lab. Was the original idea that it would be a description of your return to the laboratory after the 'gap' you had out of research?

"This is a great story, great characters, page turner, rip-roaring good tale but science? Nobody is interested in science!"

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Jennifer Rohn: No, because at that point, I didn't know. I was thinking about it but I didn't think it would come true. The 'gap' was a reference to the gap between scientists, science and the rest of the world. Scientific literature, for example. The gap between what people think we do and what we really do. This whole 'disconnect' between how we are viewed as scientists and what we are really like. But it's true, I haven't thought about that, the gap in my career.

So, you started writing your Nature blog and coincidentally returned to the research laboratory. You wrote that you had always wanted to go back and that it was more by accident that you left research due to the bankruptcy of the Dutch biotechnology company?

Jennifer Rohn: I didn't regret being an editor. I was really enjoying it. I learned so much. It's much easier

now to write research papers because I know what the editors are thinking. When they send you rejection letters, I know how to read between the lines.

In fact, I have the whole building coming to me with their rejection letters, asking me like some sort of soothsayer, 'Can you please interpret this letter? It came from on high, from the Gods of Nature. Do they really not want my article?' 'No, I'm afraid they don't.' Or, 'it looks like you have an entrance there. Why don't you write back?' I was really happy at the time but what happened was I started having these really disturbing dreams. For example, I would be walking outside a laboratory and I would want to go in and there would be this invisible membrane and I couldn't push through. Dreams like that started happening quite regularly. I realised that it was basically my subconscious telling me to return to the lab before it's too late!

How does the Nature blogosphere work? Are you paid?

Jennifer Rohn: No [laughs]. No, we are not paid. It's a source of contention. I don't like to work for free anymore. I do a lot of freelance work and a lot of my own things. I do like to volunteer, for things like kids and public engagements, but I don't like to write for free anymore. I still do but I'm trying to be a bit more selective. Yet, I have to admit that the blog has brought me a lot of opportunities. And I really enjoy it. It's wonderful! If you have ever written professionally, you know editors can be a pain in the proverbial.

al. It's so lovely to have complete control. Nobody can edit you. Nobody can rephrase your perfectly crafted sentence into one that says exactly the same thing in a completely different way, which I really hate. It's your own kingdom. You can say what you want. You can build up some followers. And if you don't like someone's comments, you can just tell them to go away. It's like a salon. It's my salon. Lots of people come to my blog and it's very gratifying. Yes, I am meeting a lot of interesting people. It's good for my profile.

How often do you blog?

Jennifer Rohn: About once a week. If I leave it longer than that I feel a bit anxious. Many bloggers blog every day but I can't keep up the pace. I'm a bit old-fashioned – my blogs are more like newspaper articles than blogs. I put a lot of thought into them.

It's not just 'off-the-cuff'.

How do you choose your themes?

Jennifer Rohn: Randomly. It is mostly based on things that happen in

the lab. I'll have an idea, scribble it down and I don't usually have to wait long for inspiration to strike. I would if I did it every day. But this is just once a week. There's something interesting happening once a week in the lab.

One of your last blogs was: 'In which I sleep with the enemy'. Except the enemy turns out to be yeast?

Jennifer Rohn: It does! Yeast is such an evil thing if you're a mammalian cell biologist. Yeast is something that contaminates and ruins your experiments. So, I felt a bit guilty dabbling with the enemy (to create deletion mutants of genes from her cell-shape screen). Yes, that was an example of how I take something every-day and make a little story out of it. I try to be funny and light-hearted, although people have told me that my blog tends to be a bit melancholy.

One I found amusing was 'In which I seek more poetry', with the example of the 'borrelgel'. (The development of an exposed film on a critically important radioactive gel coincided with a midday Dutch lab leaving party, a 'borrel'. Unexpectedly susceptible to one beer, Jenny's half-exposed film came out at 45° but still showed the big result!)

Jennifer Rohn: Yes, I do like to talk about my past. Nostalgia! I put tags on my blogs, and 'nostalgia' is what I use whenever I talk

"A lot of people blog about research results. I think that is a bit boring. What about the stories?"

about my former lab experiences. It's nice to resurrect those old memories that would otherwise be lost forever. I think scientists should do that more. A lot of people blog about research results, 'Scientist X published research data Y in today's journal of *Nature*. Ruminational!' I think that is a bit boring. There is no end of people digesting research news. All the journals are digesting it. Everybody's digesting it. But what about the stories? I think blogs should be used more for that. I think scientists should query, 'What am I doing? What have I done in the past? What have I learned? What makes me laugh and what makes me cry? What is it like to be a scientist? What is this human endeavour that is science?'

It isn't the shiny, digested research result in *Nature*. You probably dropped the gel on the floor, you accidentally did this or that, or you never intended to show this result in the first place. It wasn't just 'grand narrative'. It was a mess that all came together at the end. If more people understood that science was actually like that, not gloriously linear 'Narrative, Hypothesis, Conclusion', then I think people would understand that science is not simply black-and-white. Truth is not black-and-white. We wouldn't have these misunderstandings we have now, with the media saying, 'We can cure cancer.'

Unfortunately, people expect and want their science to be served up black-and-white and they don't understand when scientists fight about a result. It doesn't mean the whole of science is flawed. It just means

there is a healthy debate. Healthy debate is good. It is not about black-and-white. I say more scientists should be blogging about their lives, and not about data, in order to help clarify these issues.

'In which I salute anti-authors everywhere.' What is an 'anti-author'?

Jennifer Rohn: When you write scientific papers, you have to thank everybody. Everybody is so polite. But, in reality, a lot of the time when you publish a paper, you are fighting against this sea of useless opponents. And I just thought it would be a whimsical thing to point out some examples from the past when people – not very nice people – had muscled their way into my papers having done nothing, or otherwise having obstructed my life. This happens all the time, it's just not pretty. It is a war out there with scientific publications. A war! Everybody thinks we're always so urbane and courteous. And we're not.

You wrote several examples of 'Disacknowledgements', "Honoring all the people who obstructed the research (the anti-authors), without whom the work would have proceeded much more briskly and less painfully". It appears to be a very cathartic process. We can feel you releasing the tension.

Jennifer Rohn: I was very angry at some of those people. I did throw that pipettor across the room (when Jenny's senior author caved into pressure by another professor and promoted that professor's student to second author for a minor result, demoting someone who had spent three years

working on the project's key results). I'm not ashamed to say so. No pipettors were damaged through my tantrums. But I was very angry! Particularly at the last author who should have known better and who should have had a spine. *He or she*, I hasten to say. I changed all the genders and tweaked some of the details. That is something about blogging: you have to be careful not to libel anybody. It's quite difficult. I try not to mention names, ever.

Do you think your blog has become more political over time? Especially, now that you're in the laboratory, trying to advance your research career? I'm thinking, in particular, of your blog 'In which I dream of revolution'.

Jennifer Rohn: Yes, that got a lot of attention.

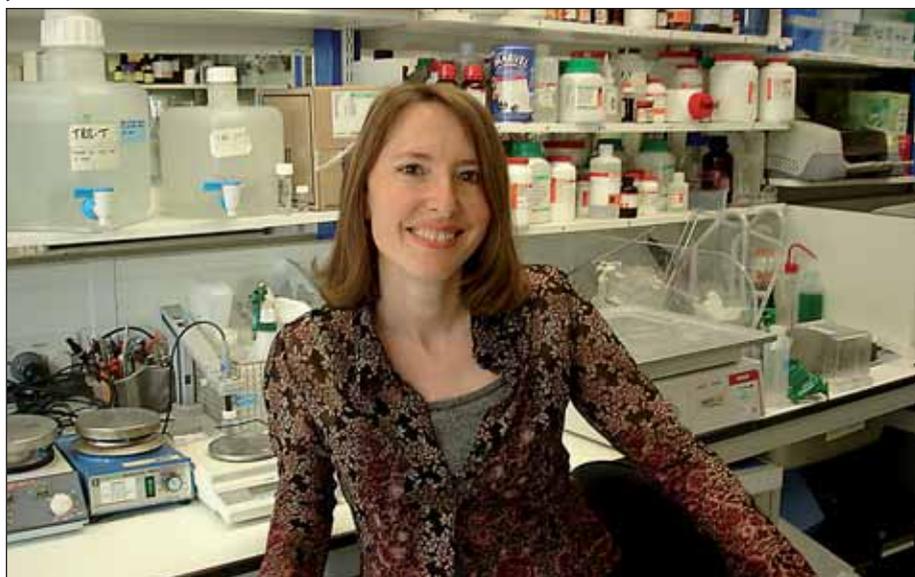
You got over two hundred comments. In it, you wrote about the apparent lack of logic of the research 'apprentice system' and its pyramid of numbers.

Jennifer Rohn: I think I have got more political. It's true I am in the lab now and am staring into the abyss because, with the current funding situation, the chances of me getting a job in the next year–and-a-half are very slim. Which makes you sort of think, why aren't there more jobs for talented, older scientists who can't, or don't want to become lab heads? It's just cheap disposable labour. You're churning out these PhD students and postdocs who will never get a job, yet you make them think they will. It's so cruel.

I think there is nothing wrong with getting a PhD, then maybe doing one postdoc, and then moving on to publishing or whatever. But what about when you do three postdocs and you're 45 years old, and then you're forced into publishing, and you're sitting next to 20-year-old graduates? That's not fair! You need to get on with your life when you're younger. You need to start a pension. This just delays and delays and delays the inevitable. And it ends in heartache for many people.

Yes, I am angry about it. I didn't realise *how* angry I was until I wrote that blog. And I did touch a nerve because a lot of people responded. I mean, really, I should now go and do something about it. I should write a petition or go talk to Paul Nurse, the new President of the Royal Society. But at the end of the day, I'm just a scientist; I don't have lot of time. Sometimes, I feel that I set off these things and then don't follow them up. That postdoc piece should proba-

Jennifer Rohn in her lab.



bly be followed up but I am not sure where to begin. I'm not a political person. I can't even vote in the UK. I have no voice. It's a bit tricky.

Have you been consulted or approached by anybody like the Royal Society or Wellcome Trust for your opinion?

Jennifer Rohn: I do get approached occasionally. No-one has approached me about my revolution post. I was hoping someone would notice. I don't know who's reading the blog, to be honest. But, for example, *Nature* just asked me for my opinion on assessment. Do I think scientists get assessed properly? Do I get credit for all my work? I should do something myself. I've got lots of friends in high places: when you're an editor, you do commune with the big-shots. I should do something with this but I feel vaguely guilty because I am spread fairly thin. You've made me think now.

Some countries have stable research jobs. For example, in France, with the CNRS and INSERM, but their future is menaced because the French government thinks the Anglo-American system is better. Do you agree?

Jennifer Rohn: It might be more efficient to turn out disposable apprentices. That might be cost effective. But if you bring a new research student into my lab, it may take them ten months to work out how to do a Western blot that I can do in one day. I don't buy it. I think that you do get your money's worth but you have to pay these people a bit more because they're older. I'm very efficient and I'm very experienced. I've been in the lab since 1989. I know what I'm doing. Labs need more continuity. It's amazing what happens when the senior postdoc leaves. Suddenly, there's nobody there who remembers how to do magic technique X that he was so good at. If you get people leaving at the wrong time, you haemorrhage knowledge. I think it would be better if you had a few permanent people that could pass on the core lab knowledge more effectively. There would always be someone in the lab who knew where the enzymes are stored, or how to do chromatography. You wouldn't have to look it all up from scratch when a postdoc goes AWOL (absent without official leave) or dies. Things *can* happen. If there's no core team that can remember all the stuff, it's going to take much more time to get things done.

You think it's counterproductive, the amount of time that gets lost when you have to reinvent the wheel every few years?

Jennifer Rohn: Exactly! Reinventing the wheel. But it is also more about the aspirations of the career. My suggestion was quite harsh: to slash the number of PhD students. But that would be effective. Consider medicine: there must be only so many places but most medical doctors get some sort of job because they're not letting in millions of medical students who can't all become doctors.

Or you could tell students that if they want to have a reliable job in the future, they shouldn't do a PhD. Don't do research?

Jennifer Rohn: You could say that if you wanted to go into scientific publishing, you would need a PhD and perhaps a postdoc to be hired by a top journal like *Nature*. But at least you know from the outset: do a PhD, one postdoc, apply to *Nature*. I have no problem with that. But there are all these poor, starry-eyed kids who are convinced they're going to get Nobel prizes and there is no way there's enough space for them all. Only one out of hundreds is going to succeed in research. And it is not because they want to be in publishing or to become sales reps – that's the worst. Biotech sales rep! No offense, obviously somebody has got to sell the products, but I've seen so many people desperate to be lab rats who've ended up as sales reps. It's tragic.

Do you think there are additional problems for women?

Jennifer Rohn: I think women are quite sensible. One of the reasons why women don't go further in science is not necessarily due to discrimination. I'm sure there is discrimination but they're also too sensible. You do get to a certain age, I was around 38 when I realised that I'd like to have a nice life, that I didn't necessarily want to work a hundred hours a week and let my life pass me by. I decided to carry on in research but a lot of women leave because they think, 'Sod this! This isn't living! I'd rather do something nice.' I think men are less likely to want to give up the dream. Maybe they are more driven. I don't like to generalise but I do think that women can be more sensible and say, 'Forget it, I'm not having fun anymore. It isn't worth it.'

INTERVIEW: JEREMY GARWOOD

“What about when you do three postdocs and you're 45 years old, and then you're forced into publishing, and you're sitting next to 20-year-old graduates?”