on a question of science, based on a fictional, if realistic, cell-signalling pathway. Along the way we witness the shifting, nomadic international fellowship of scientists, and especially of postdocs. If I have one criticism, it is that the character of O'Hara does not ring true. Modest and self-effacing, he is surrounded by beautiful, talented, wise and tolerant women who care for him even after he repeatedly spurns their advances. Like the butler Stevens in Kazuo Ishiguro's *The Remains of the Day*, he remains singularly dedicated to duty.

Rohn aims to change the way in which the reading public thinks about scientists. Novels that portray scientists as protagonists, doing science in a realistic way, are scarce. This is surprising, given that there are enough detective novels to derail the Orient Express, and airport bookstalls groan with fiction featuring

the detailed work of forensic scientists, doctors, lawyers, soldiers, sailors and, in all likelihood, candlestick makers. Why?

Two forces conspire to shut science out in the cold. The first is snobbery, in which the literary establishment has never shaken off the idea that scientists are unfit to join the high table of culture. The second is that scientists are viewed as modern-day wizards whose occult works are unintelligible and probably dangerous. People cannot make up their minds whether scientists are sources of unbelievable good ('miracle cures') or chthonic evil ('frankenfoods'); so the breed is best left alone. Were scientists to show signs of literacy, intelligibility or humanity, both constituencies would ignore them, the first by braying more loudly, the second for fear of puncturing cherished prejudices. Occasionally, both forces come together — for example, in the

oft-expressed confessions of media types that they are very poor at maths or science, as if this admission were a badge of honour rather than of shame. In most circles, to confess any mathematical or scientific ability risks ostracism.

Because of these prejudices, prospective readers of *Experimental Heart* have to muster the activation energy required to surmount the barriers that society has put in the way of understanding scientists as people. The worry is that when they hear the dreaded 's' word, many won't even bother. In the same way that female scientists notoriously have to accumulate a far more stellar publication record than their male peers to achieve tenure, novels about scientists have to work twice as hard as detective stories to reach the same place in the best-seller lists. ■

Henry Gee is a senior editor at *Nature*. His latest novel is *By The Sea*.

Q&A: Electronic music comes of age

The Columbia-Princeton Electronic Music Center in New York was the first institution of its kind in the United States for experimenters seeking new technology-based sounds. Fifty years after its founding, director of research **Doug Repetto** explains how electronic music has evolved and how the role of academic music centres is changing.

Why was such a centre needed?

One of the primary reasons was equipment: when the centre was established in 1958, we had a room-sized synthesizer and giant tape decks — things that individuals couldn't have. It was a physical resource: everyone had to come here to make this music. It had influential students, including Bob Moog, who went on to make the Moog synthesizers that revolutionized the way technology is used in music around the world.

In 1996 it was renamed Columbia University's Computer Music Center. Why?

The change acknowledged that hardware was no longer the focus. Today every student has a laptop, and centres around the world have had to struggle with the question of what to do now they're not a physical resource any more. In the past decade, the centre has become less about academic computer music and more about multimedia and inter-media work.

How did you start making electronic music?

I've always been interested in music. In the beginning it was through being in rock bands. Then I went to college and discovered experimental contemporary music. But I was interested in systems and processes, almost doing experiments in music. It was difficult

Doug Repetto experiments with electronic sounds.

to convince the other college kids that they should be partaking in these experiments. They weren't that interested in playing one note for an hour or playing things very quickly or very slowly. That got frustrating until I discovered computers. Computers would do whatever you wanted.

Your own work fuses music, electronics and sculpture. What inspires you?

My work has moved away from explicitly being music. I build environments where things happen regardless of what you do. You can perturb the system and inject some

energy into it, but it still does its own thing. The inspiration comes from the idea that the physical world is out there and there are ways to understand it.

How do you think perceptions of electronic music have changed?

It's hard to find someone now who thinks electronic music is not music. For a long time, there was a requirement at Columbia University that people doing doctorates in composition had to produce a music score. But then people started doing dissertations that used computers. They would print out the source code from their software and say 'that's the score'. The university had to expand what it counts as music.

What will be happening in 50 years' time?

In a curious inversion, the music world has gone from entirely personal technology to almost entirely large-scale industrial technology, and now it's coming back to being personal again. The next 50 years will be mostly more of the same: artists pushing the boundaries, misusing technologies and asking difficult 'how' and 'why' questions about new technologies. Hopefully, we will end up thinking about things in ways we wouldn't have if artists hadn't asked those questions. ■

Interview by **Daniel Cressey**, a reporter for *Nature*.

S. FRIEDLANDER