

decisions must often be made using limited and imperfect data.

For a better grounding in marketing and business, some industry observers recommend that researchers take advanced marketing classes. Langer teaches courses such as 'marketing in a regulated environment' for the master of biotechnology and master of regulatory affairs programmes at Johns Hopkins University in Baltimore, Maryland, and notes that his students all have science backgrounds. Many already work at pharmaceutical firms, and want to pick up a master's degree to get a competitive edge.

At Novo Nordisk's headquarters in Bagsværd, Denmark, a training programme called Base Camp specifically recruits people who have recently graduated with a master's, some of whom also have scientific degrees. The two-year programme, designed to fast-track careers at the company, offers ten areas of specialization, including global marketing.

WORKING UP TO IT

Macartney agrees that a master's degree — particularly in business — from a top-tier institution can be a selling point, but he also values candidates who have taken a purposeful, well-planned career path, picking up experience on the job.

Companies may be more inclined to take a chance on inexperienced individuals when seeking marketers for products that are about to lose their patent protection, because the campaigns are considered fairly low-risk and unattractive to seasoned marketers. European companies tend to recruit for potential and may give relatively untested applicants a better shot than their counterparts in the United States.

Internships are another possible entry point, especially for communications agencies such as Spectrum, which accepts about six trainees every summer.

Experience, of course, can't replace natural ability. In essence, marketers say that their job boils down to persuasive storytelling, whether about the development of a drug or about the results of a consumer survey. "It's being able to take that story, support it by evidence, and communicate it effectively enough so that either companies agree and they fund your programme, or investors agree and they want to support that development," says Rob Lasser, former product general manager in the emerging business unit at Shire Pharmaceuticals.

The career path may require persistence, but biomedical marketers say that it is well worth the effort. "Keep trying, don't get dismayed," says Boeckman. "It just takes longer today than it used to." ■

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TURNING POINT

Alison Galvani

Alison Galvani, an epidemiologist at the Yale School of Public Health in New Haven, Connecticut, became one of the institution's youngest-ever tenured faculty members two years ago, at the age of 33. This May, Galvani received a Blavatnik Award for Young Scientists, bestowed by the New York Academy of Sciences and the Blavatnik Family Foundation to reward innovative, interdisciplinary work.



What prompted you to pursue a scientific career?

My initial interest in biology was sparked during high school, after I read *The Blind Watchmaker* (Norton, 1986) by Richard Dawkins. I wrote him a letter and he encouraged me to apply to the University of Oxford, UK.

What did you say in the letter?

I don't remember the details, but I questioned his argument that speciation is an entirely gradual process. There is sometimes a jump in the number of chromosome pairs — for example, from 24 in apes to 23 in humans — that would constitute a significant change. He agreed that was an issue. I admired him, but I think he liked that I challenged him a small bit.

How did you end up in epidemiology?

I went to Oxford for my undergraduate degree in biological sciences and stayed to do a PhD in theoretical epidemiology with Robert May, former head of the UK Royal Society. I had always liked mathematics and thought public health was important, so I modelled transmission of evolutionary factors in parasitic-worm infections in developing countries.

What was the best advice you got from May?

He recommended I apply for a Miller Research Fellowship. That fellowship allowed me to explore interdisciplinary areas rather than restricting myself to a single project. For example, I helped to challenge the idea that, through natural selection, the European plague epidemic in 1348–50 caused a genetic shift that increased resistance to HIV in the population. That helped me to become comfortable challenging dogmas. It set the stage for my work in the burgeoning field of behavioural epidemiology.

What impact have you had on that field?

I was part of one of the first modelling teams to challenge the US Centers for Disease Control and Prevention (CDC) in its policy of focusing influenza vaccination on the elderly. That recommendation neglected the importance of transmission dynamics, notably among school

children and parents. We predicted that targeting vaccination to children and parents would avert deaths and reduce hospitalization costs for the whole community, including the elderly. We showed that protection through herd immunity is more effective than direct protection.

Did your career suffer after you called vaccination policies into question?

Not everyone at the CDC was happy about our paper, but policies shifted. Even if people weren't happy, they did notice what we had found. I have good relationships with some people at the CDC, and I don't think there were long-lasting adverse effects on my career.

What is the key to successfully conducting risky research?

Whether research is risky or not, the key is having a collaborative, interdisciplinary team. With a strong team, the research is no longer risky; it is just interesting. Risky research can help to attract top students, many of whom go on to have stellar careers and remain collaborators.

Now that you have tenure, do you feel more confident taking risks?

Yes; I think it is easier to do high-risk work when you have established your reputation. We're beginning to tackle how behaviours, including altruism, habits and cultural beliefs, might call into question assumptions of epidemiological models. These are complicated factors to untangle.

What is the secret to securing tenure so young?

I had an extraordinarily supportive mentor who encouraged the dean to put me up early for tenure. I was fortunate to get a John Simon Guggenheim Memorial Foundation Award, which helped me to justify early promotion. ■

INTERVIEW BY VIRGINIA GEWIN