

been published and determine whether an innovation overlaps with technologies that have already been patented. Researchers who pass the US Patent and Trademark Office registration exam can then develop and file patent applications — although they cannot advise clients on legal issues or go to court if a patent is infringed.

If a scientist earns a JD and passes both patent and state bar exams, she or he can work in patent law and develop a full-service intellectual-property practice, which may involve working with clients on trademarks, copyrights and technology licensing. Scientist-attorneys can also help clients, particularly start-up firms, with issues such as entity formation, employment agreements and general legal services, and can practise in other fields of law as well. In some cases, employers will reimburse tuition fees or provide other forms of support to tech specs or patent agents who attend law school while working.

### BACK TO SCHOOL

The idea of returning to higher education can be daunting for an early-career researcher, says Dianne Nicol, a law professor and deputy director of the Centre for Law and Genetics at the University of Tasmania in Hobart, Australia. But, she says, the extra training can help to develop one's career.

After earning a PhD in cell biology from Dalhousie University in Halifax, Canada, and a law degree in Tasmania, Nicol spent several years in a private legal practice, working on intellectual property as well as on contract work and personal-injury litigation. She now researches and writes about issues such as gene patenting, the privacy of genetic information, regulations underlying biobanking and direct-to-consumer genetic testing. Her research has been used to inform government reports on genetic privacy and health issues surrounding genetic patenting, and she was recently appointed to a three-member panel that reviews pharmaceutical patents. Nicol relies heavily on both her science background — from the fundamentals of genetics she learned as an undergraduate to her postgraduate training — and her legal education. “Even though it sounds like a long and laborious process, it's worthwhile,” she says.

The lingering effects of the global recession have meant that job prospects for fledgling US lawyers is gloomy: the American Bar Association announced this year that just 57% of the 46,776 people who received a JD in 2013 — the largest number of new JDs ever — had found long-term, full-time jobs in law that had required them to pass the bar examination. But the news is not all bad. People with science

backgrounds may have an edge on their peers, both in terms of law-school admission and in finding gainful employment after graduating, says Joy Baker Peacock, assistant director of the High Tech Law Institute at Santa Clara University School of Law in California. Many law schools and institutes are keen on training students who have physics, engineering and computer-science backgrounds — once qualified, such candidates may be appealing to employers in areas including semiconductors, photovoltaics and nanotechnology.

Peacock says that attorneys with a PhD in the life sciences are valuable in the biotechnology patent-prosecution field because they will have the necessary knowledge to work with clients and the officials on protecting intellectual property. Although litigators — attorneys who usually work for plaintiffs and defendants in patent-infringement cases — do not require a science background, she says, it can be an advantage. “Firms like to hire people that have a strong grounding in technical and scientific matters so that they will be able to get up to speed more quickly on the technical aspects of patent-infringement cases.”



**“I really love the law. Important things get decided in courts. I just want to be a part of that.”**

Collette Adkins Giese

in Tucson, Arizona. In 2012, Giese filed the largest-ever petition involving reptiles and amphibians to the US Fish and Wildlife Service to protect 53 species under the US Endangered Species Act. It was a 450-page document that involved nearly a year of preparation, including literature reviews and discussions with experts.

As a lawyer, she is now free to be an advocate for her interests. “You can't hide behind the notion that you're just presenting the facts anymore,” she says. “For me, that was such a relief.” ■

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### EDUCATION

## Graduate skills survey

The Council of Graduate Schools in Washington DC is examining the professional-development requirements of PhD and master's students in science, technology, engineering and mathematics (STEM) programmes. The council will survey 500 member institutions and interview industry leaders to determine which skills are most important for STEM graduates and which remain unaddressed in US graduate programmes. Daniel Denecke, the council's associate vice-president for programmes, says that the study, which is funded by a US\$298,100 grant from the National Science Foundation, is focusing on industrial employers because they are the most likely to hire STEM graduates. Results will be available by summer 2016.

### FUNDING

## Marion Mason award

A US\$2.2-million bequest from the estate of a venerated US chemist will support early-career female chemists over the next 20 years. Recipients of the Marion Milligan Mason Award for Women in the Chemical Sciences will receive \$50,000, which may be used for laboratory supplies and equipment; publication costs; computer and technical support; and attendance at meetings. Applicants must have a tenure-track post at a US PhD-granting institution and must be US-born, naturalized citizens or permanent residents. The awards are administered by the American Association for the Advancement of Science in Washington DC. Applications are due by 15 September, and winners will be announced by May 2015.

### FINANCIAL OUTLOOK

## Continued squeezes

US universities are likely to face continued financial pressures over the next 12–18 months, says a report by Moody's Investors Service in New York. *Negative Outlook for US Higher Education Continues Even as Green Shoots of Stability Emerge* predicts that competition for tuition revenue, federal grants and state funding will affect regional public universities most; prominent private universities with large endowments will perform well. The negative outlook means that Moody's is more likely to give US universities poor credit ratings; as a result, they will incur higher borrowing costs and may have to cut back on hiring.