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Vic Lewchenko

Careers in Perspective: Chemists Can Do Anything

Lisa M. Balbes
United States
9 May 2008

Compared with some scientific fields, chemists are blessed with a wide range of obvious career paths. Sure, chemists can become professors, but they can also work for pharmaceutical companies in many different roles, analyzing natural products, managing environmental compliance, and much more. Still, those paths aren't for everyone. Fortunately, there's a multitude of less well-known career options. Here are the stories of four chemists who stepped off the beaten path and are thrilled with the opportunities they found.

VIC LEWCHENKO, PROJECT MANAGER

Managing projects--prioritizing activities, setting deadlines, monitoring budgets, and so on--is a part of any scientific job. But did you know that project management itself is a career? Vic Lewchenko started out as a chemistry major. One day during organic lab, he stuck a thermometer in his hand and realized that lab work was not his strength. "Fortunately, our chemistry department had just hired a young theoretical

chemist who introduced me to computational chemistry, and I learned there was a place for me in chemistry without having to endanger my health," he says. Lewchenko went on to earn a Ph.D. in physical chemistry from the University of Wisconsin, Madison, in 1981. His dissertation included only computational research--highly unusual for the time.

In 1984, after two postdocs in computational chemistry, Lewchenko joined [Tripos](#), one of the first commercial computer-aided drug-design companies, as a scientific programmer. He soon took on sales-support responsibilities. Within 6 months, he was transferred to Switzerland, where he spent 18 months providing pre- and postsales support and customer training. He then moved back to the United States, where he continues in those roles, with occasional trips to help out in the European office. Over time, he moved into product management and then into software-release management.

In 2005, Lewchenko left Tripos and moved to Pfizer as a project manager for chemical

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informatics software. (In an example of a growing trend, Lewchenko works through a placement agency and is not a Pfizer employee.) He ensures that the software development follows the proper development process and remains on schedule. His chemistry background allows him to serve as an intermediary among the scientists who use the software, the programmers who build it, and the information technology staffers who support it. Lewchenko says that he loves "working with highly talented people and the continual challenge of keeping up with rapid changes in technology."

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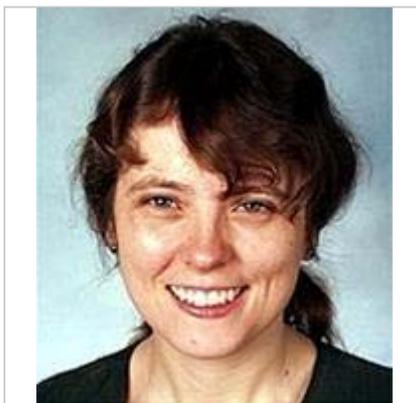
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Lewchenko believes that careers in project management are likely to remain robust as technology and the economy change. "Because more and more work is being outsourced, the challenges for project managers are greater than ever. The people building your product are often on a different continent, many time zones away, and from a different culture, so clear and unambiguous communication is critical," he says.

FIONA CASE, SCIENCE JOURNALIST

An important part of scientific research is communication: documenting procedures and results, writing scientific papers and grant proposals, and communicating results to other scientists and non-scientists.

Fiona Case started her career in the United Kingdom in the late 1980s, working at Courtauld Research. She was involved in early efforts to bring computational chemistry into the industrial environment. Case moved to the United States in 1991 to join Biosym (now Accelrys), where she conducted contract research and workshops on the molecular modeling of materials and polymers. Because it was a start-up company, she also helped out in marketing and technical sales. In 1999, she moved to Colgate Palmolive, where she worked on materials structure and property prediction for toothpaste, detergents, and hard-surface care and personal-care products, as well as packaging and fragrance technologies.



Fiona Case

Throughout her research career, Case wrote conference reports and book reviews for trade journals. Eventually, she decided she was ready to become a full-time freelance writer.

Technical writers usually write for other scientists, whereas science journalists write about technical topics for nonscientific audiences. Case does both. She has been freelancing full-time for more than 5 years, pitching story ideas to editors of publications such as *Inform* magazine and *Chemistry World*, as well as local newspapers and radio stations. When an editor accepts her pitch, Case writes the article and is paid upon publication. She travels to several professional conferences each year and writes about the science presented at those meetings. "Because I'm a freelancer, I can balance my professional and personal lives by the amount of work I commit to at any given time," says Case. "I've slowed down since my son was born, and that's been great."

LAURA ROSATO, GLOBAL PRODUCT STEWARDSHIP LEADER

Products, like organisms, have life cycles, and these days many companies--and some of their employees--shepherd those products through from production to end of life. Laura Rosato is one such employee. Rosato earned B.S. and M.S. degrees in biochemistry from the University of Pittsburgh in Pennsylvania and then chose industrial toxicology for her graduate work because she says she "wanted to be involved in a more applied field that required the use of a broad variety of skills." After earning her Ph.D., she worked at Procter & Gamble, where she planned and executed safety-testing programs and exposure and



Laura Rosato

risk assessments in support of new and existing products.

After a few years, Rosato moved to a much smaller company, Quantum Chemical Corp. At Quantum, she was the only toxicologist, whereas before she had been one of 200. She managed Quantum's toxicology and safety programs, monitored regulatory developments, and made recommendations to upper management on how to address changing regulations. After a few years, Rosato moved to Karch and Associates, where she analyzed data from occupational exposures to various chemicals and determined whether the disease or injury claimed was scientifically plausible.

Rosato spent 4 years at [Alcoa Technical Center](#), learning more about regulatory interpretations, how to manage health and safety, and product safety and stewardship across multiple corporate sites. She then moved to Honeywell Specialty Materials, where she is responsible for developing and implementing product safety and product stewardship management systems for 18 facilities in eight countries. Product stewardship includes cradle-to-grave responsibility for the potential health impact, safety, and environmental effects of a company's products. This includes tasks such as evaluating raw materials for hazards and toxicity, developing safe-handling practices, monitoring environmental exposure, and assessing risks. It also requires understanding global regulatory status and proper disposal practices.

"This was a natural progression for me. I not only understand the science and technical components of the product-development life cycle, but I now understand the business intimately," she says. Currently, Rosato is completing a Katz Executive MBA at the University of Pittsburgh.

TRISH MAXSON, VICE PRESIDENT OF HUMAN RESOURCES (HR)

After a career in research and technical service, Trish Maxson realized that she wanted to work with people and help them achieve their professional goals. So she moved into the human resources field.

Maxson earned her Ph.D. in physical chemistry from the University of California, Berkeley. She started at Rohm and Haas as a research scientist and then became a technical service manager. During those years, she worked on a special project, spending a year helping other employees become more effective in their work. She found the work very satisfying, so she decided to go back to school to study psychology and transition into a more people-oriented career. She discovered during a temporary stint in the HR department that her skills and knowledge were a perfect fit for the work--a combination of individual coaching, workforce planning, organizational design, talent assessment, and development support. It was such a good fit that she quit the psychology program after earning her master's degree. Eventually, she says, she became HR director for the European region, spending 2 years living in France and Switzerland, "learning, sometimes the hard way, a great deal about how compensation, benefits, works systems, social systems, laws, and customs vary in the 14 different countries" for which she was responsible.



Trish Maxson

Maxson recently moved to Merck, where she works with the president of the research division to manage the company's talent portfolio and help it match the company's long-range targets. She may recommend retraining existing employees, recruiting new employees, building relationships with particular universities, or acquiring other companies. She very much enjoys "having an impact on the company's long-range vision," she says. "In this job, I have to have a high tolerance for ambiguity and for working at different levels. I'm always 5 years away,

finding patterns, and learning to integrate and draw on other areas of expertise, as well as in the here and now on issues that need immediate resolution."

What do all these chemists have in common? They were not afraid to take chances and try their hands at new, different tasks. When they found a field that interested them, they expanded their responsibilities in that direction. For example, project management can be tried by setting (and meeting!) budget, timeline, and resource allocations for a significant project. Regulatory affairs is an expansion of laboratory safety officer responsibilities. Real-world experience trumps classroom learning, and future employers don't care if the experience was paid or volunteer. Trying new things let these chemists find out what a field is really like and provided practical, relevant experience when they were ready to move full-time in the new direction.

<p>Lisa M. Balbes is the author of <i>Nontraditional Careers for Chemists</i>, published by Oxford University Press (2006). She has been a freelance technical writer for 16 years, providing scientific writing services and custom workshops for scientific companies. She earned her Ph.D. in chemistry from the University of North Carolina, Chapel Hill, and undergraduate degrees in chemistry and psychology from Washington University in St Louis, Missouri.</p>	<p>Comments, suggestions? Please send your feedback to our editor.</p>
<p>Photos. Trish Maxson, credit: Merck. Others, courtesy of the subjects.</p>	<p>DOI: 10.1126/science.caredit.a0800069</p>

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