

CREATING THE RIGHT CHEMISTRY

If you are interested in medicine and chemistry and you are serious about transferring your skills from academia to industry, then the message is loud and clear: get a good grounding in synthetic organic chemistry.

High-throughput synthesis is becoming increasingly important in drug discovery, as one of the main priorities of companies is to create more compounds that can be screened faster and cheaper. One of the main tools in this quest is combinatorial chemistry — in which large collections (or ‘libraries’) of compounds are generated by synthesizing many possible combinations of a set of smaller chemical building blocks — which has been one of the biggest areas of growth in the past decade.

But talk to the large companies and what you hear is that there is actually a shortage of qualified chemists to take up the task. So, how can you develop the right skill-set to attract the attention of industry? The answer from company recruiters is that you need to get a good grounding in synthetic organic chemistry, as you don’t enter the industry as just a combinatorial chemist. Specialized degree courses can give you a good basis, recruiters say, but there is no substitute for learning through experience. Companies often send their recruits on short foundation courses for synthetic organic chemists who have little to no medicinal chemistry experience, such as the one-week intensive course in medicinal chemistry held each June at Drew University, New Jersey, USA (<http://www.depts.drew.edu/rise/resmed/>).

Another important factor, albeit one that companies may not mention to you directly, seems to be where you study. Most of the larger companies prefer to recruit their chemists by visiting universities and meeting people face to face. For obvious reasons, they spend the majority of this time visiting synthetic organic chemistry departments or individual team leaders with excellent reputations and/or existing links with industry. This is not to say that companies restrict their search to a small set of universities; they are always on the lookout for so-called ‘diamonds in the rough’ — for example, the 17 graduate chemists that Pfizer recruited in the UK last year were recruited from 16 different universities. “Do your research, use your career services and academic contacts, and find out when careers representatives are visiting your university and plan a set of questions to ask them”, advises a recruitment manager at one of the largest pharmaceutical companies.

Companies stress that they actively recruit people at all levels, although having a Masters or Ph.D. will allow you to enter at a higher level than a graduate. When recruiting graduates, companies look for motivated students who are well trained in synthetic organic chemistry and have good practical skills, and they favour degree courses that include a placement in industry (or students that have done a summer internship). After graduating, recruitment managers advise that that you think carefully about whether you apply for an industrial post or a postgraduate qualification, warning that graduates should not drift into doing a Ph.D. because they presume that a better job will result from it. Someone whose heart is not fully into their thesis usually

never does as well as someone who is convinced that it is the right move, they say. Again, choosing a Ph.D. or a postdoc with a well-recognized supervisor or one with industry links will help. In addition to proven bench skills, companies also look for good problem solving and analytical skills, the ability to present and communicate science, and someone who is willing to accept challenges, think outside of the box and learn.

Many companies, in particular the smaller ones, don’t go on campus to recruit, but use the many societies, journal-based and online resources that are available to advertise vacant positions (BOX 1). Despite the constant need for new chemists, the current economic climate is starting to create a short-term slowdown in hiring (according to the American Chemical Society’s salary survey of 2002, unemployment among US chemists has reached 3.3%, the highest level for 30 years), and job-hunters need to use all the available tools to make sure they have the edge.

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Box 1 | Careers resources

Societies

American Chemical Society: . . . <http://www.chemistry.org/>
The largest scientific society in the world, with over 150,000 members, the American Chemical Society (ACS) offers many careers resources, such as the National Employment Clearing House (NECH), which brings job-seeking members in contact with employers and sets up interviews before national ACS meetings. The ACS plans to launch a ‘supersite’ for classifieds in mid-February this year by merging the online part of the classifieds section of the journal *Chemical & Engineering News* (C&EN) with the ACS’s chemistry job website [JobSpectrum.org](http://www.job-spectrum.org/), which they hope will improve the interaction between job seekers and employers.

Royal Society of Chemistry: <http://www.rsc.org/>
The Professional Body for chemical scientists in the UK with around 50,000 members worldwide. Its website [Chemsoc](http://www.chemsoc.org/) (<http://www.chemsoc.org/>) features listings of positions in Europe, careers news and other online resources.

Online career resources

Journal-based websites

C&EN Classifieds: . . . <http://pubs.acs.org/cen/classifieds/>
NatureJobs: <http://www.nature.com/naturejobs/>
NewScientistJobs: <http://newschemistjobs.com/>
Science Careers: <http://recruit.sciencemag.org/>
Science Next Wave: . . . <http://nextwave.sciencemag.org/>
Job websites
Chemistryjobs.com: <http://chemistryjobs.com/>
Chemweb: <http://www.chemweb.com/jobs>
Monster: <http://www.monster.com/>
Hotjobs: <http://hotjobs.com/>

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