

Where have all the chemists gone?



GETTY

**FALLING STUDENT NUMBERS
ARE LEAVING CHEMISTRY
DEPARTMENTS EMPTY.**

After much controversy, extended discussions and student campaigning, the chemistry department in the University of Sussex has won a stay of execution. In March, the university announced it would stop offering chemistry degrees and the department would convert to Chemical Biology. The Royal Society of Chemistry labelled the proposed move as “based on short-term financial considerations”, and Sir Harry Kroto, one of Sussex’s three Nobel laureates, threatened to return his honorary degree if the closure went ahead. The Vice Chancellor of Sussex has since announced that the university will continue to offer chemistry degrees as one of the courses from the new Chemistry and Biochemistry department.

Although the chemists at Sussex have escaped for the time being, this kind of closure is an increasingly common occurrence in the UK, where several chemistry departments have been closed or simply combined with other departments in recent years. And it’s not just under-achieving departments that are threatened — closures of the chemistry departments of King’s College London and Exeter, which, like Sussex, achieved high ratings in the research assessment process, shocked many.

As chemistry is one of the core subjects underpinning research in materials science, there is much room for pessimism in the face of a 15% drop in the number of chemistry graduates in the UK between 1997 and 2002, as compared with a 9% growth in graduate numbers overall. Indeed, these figures mirror a decline in the student numbers seen in materials departments¹. Beyond materials science research, the loss of chemistry from a country’s scientific portfolio is likely to have massive consequences for the industrial sector; pharmaceutical companies, which play a prominent role in the UK economy, have particular cause to be concerned.

The increasing numbers of department closures tends to be attributed to one or both of two factors. First, as chemistry is an expensive course to teach, closing departments is an attractive option for universities looking to save funds. Second is the decline in numbers of applicants to pure chemistry courses — in the decade between 1994 and 2003, the number of UK chemistry applicants decreased from 4,104 to 2,434 (ref. 2), despite the general growth in student applications. Competing for students with other, seemingly more exciting, courses, such as sports science and biotechnology, or those leading to better-paid jobs such as IT, is difficult, but this effect also has its roots seated deeply in the image of chemistry and chemists². The subject is often perceived by the general public as tedious and difficult, and chemists are not renowned for being proactive in promoting their achievements. This is clearly a long-term problem: as far back as 1970, Sussex’s chemistry department played host to a scheme to make chemistry courses ‘more attractive and less boring’³. Some say this image problem is at least in part due to the lacklustre format of the National Curriculum study of chemistry in schools, which promotes the accumulation of marks as opposed to inspiring interest in the subject.

Hopefully, the future is not entirely bleak and we don’t just have to stand idly by and await the closure of every chemistry department in the UK. The Higher Education Funding Council for England (HEFCE) signalled its awareness of the problem in March this year by allotting funding for initiatives in both chemistry and physics to promote these subjects in schools. Individual chemistry departments are also taking action, such as York University with its outreach program, which is designed to engage school students in the more exciting aspects of chemistry at all ages. Further action to improve chemistry’s image is clearly necessary, but allocation of additional funds for chemistry teaching once the students are enrolled at university are also vital. Unless the closures stop, there will be few courses left to accommodate those students who do want to study chemistry.

Falling interest in chemistry is not just a UK phenomenon. Numbers of applicants to physical sciences degrees are falling across Europe, the US and Japan, with only China and India seeing an increase. The consequence of this growing shortfall of chemists in UK materials science research is yet to be seen, but we can only hope that if the decline isn’t halted, sufficient chemists can be attracted from overseas to fill the void.

REFERENCES

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