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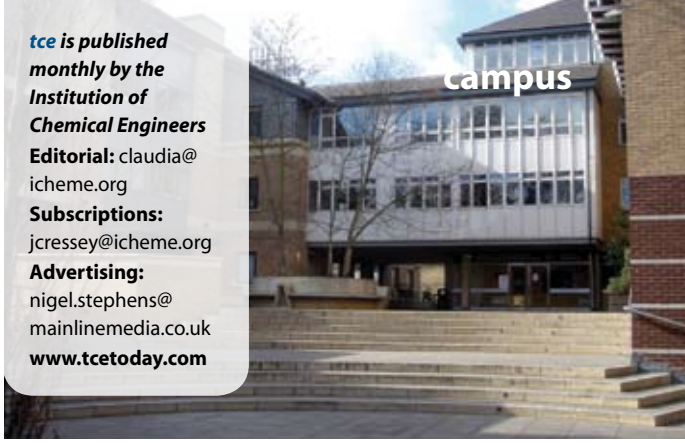

A marriage of love

Claudia Flavell-While finds out why the University of Cambridge wants to merge chemical engineering with biotechnology

DEPARTMENTAL mergers, or in this case the merger between a university department and a research institute, aren't always matches made in heaven. All too often, such mergers are imposed from above, driven by the need to consolidate and 'create synergies' – a term survivors of business mergers in particular will know as a euphemism for saving money and cutting jobs.

That is not the story here. When the Department of Chemical Engineering and the Institute of Biotechnology at Cambridge floated the idea of a merger, it was anything but a shotgun marriage. "There was already a great deal of overlap between the two entities," explains Lynn Gladden, head of the chemical engineering department. "We were already working together on, for example, biosensors and biopharmaceuticals. Merging just seemed like a natural progression."

The aim is to create a department that has the best combination of teaching and research skills to lead future demand and developments. "The development is particularly timely in view of pressing global challenges such as healthcare, food, energy and transport to service a burgeoning population with dwindling resources and where the combination of bioscience, biotechnology and chemical engineering will contribute to sustainable solutions," says Chris Lowe, director of the Institute of Biotechnology. The combination will "encourage new cross-disciplinary interactions and unlock new research directions particularly in fundamental biosciences, multi-scale (bio)reaction engineering, biopharmaceutical expression and purification etc." Chemical engineering will bring a more quantitative approach to biological and clinical problems, along with an understanding of the scientific principles underpinning biotechnology and extensive experience in simulation and modelling, while biotech is better in tune with the immediacy of applications and research opportunities, he explains.

Thankfully, perhaps, this is a merger of institutions with quite different histories and roles within the university, hence the merger is free of all the usual squabbles over who'll have the bigger desk and fancier title. "We're merging a 60-year old department, which employs 18 academics and runs a strong undergraduate course, a Masters and a range of PhDs, with an institute that is very research-centred and has five academics and a research school of about 70." This means that once the merger is complete on 1 August, Gladden will head the new Department of Chemical Engineering and Biotechnology, while Lowe remains head of the Institute of Biotechnology, which at least for the time being will continue to operate as a separate entity within the new department. New research initiatives will cement the merger of the bio activities across the institute and the former chemical engineering department.

All of this enthusiasm for biotechnology should not, by any means, imply that traditional chemical engineering is out of fashion at Cambridge, Gladden stresses. "We haven't 'gone bio'. The chemeng department's traditional focus on the scientific principles of chemical engineering will not be touched." While the department's two academics already working in the realm of biotech – Nigel Slater and Howard Chase – will be joined by a further five, this leaves 16 others active in other parts of chemical engineering. "Had we tried to expand our biotech base without the merger, that would have forced us to erode expertise in other areas of chemical engineering," Gladden says. "The merger allows us to expand without losing anything." The department's core areas, now and in future, will multiscale sustainable reaction engineering, product design and biotechnology, with a particular focus on the healthcare sector.

Cambridge's chemical engineering students shouldn't see any drastic changes either, except for that they are likely to have access to some of the latest biotech research equipment and may get occasional lectures from members of the institute.

In the longer run, Gladden says the merger presents an opportunity to re-think the biochemical engineering/biotechnology options of the course to ensure students are equipped with the skills the next generation of chemical engineers will need; but this will neither touch the fundamentals of the course nor will it be rushed in. The postgraduate courses, chem eng's MPhil in advanced chemical engineering, and biotech's MBE in bioscience enterprise, will remain unchanged, though they might be joined by new offerings in due course.

As for the staff in both departments, the merger has been very well received, Gladden says. "There's been a very positive reaction from everybody. People on both sides have been fully aware and engaged from the start; this wasn't a sudden surprise that was sprung on anybody, and we've been careful to take on board everybody's comments, hopes and concerns," she explains. That the merger will not result in any trimming of the headcount, either among the academics or the support staff, certainly helps, too.

Naturally, an enlarged department will also require larger facilities – in the quaint but cramped conditions of Cambridge University's historic buildings, that was a perennial headache even before the merger. But here, too, change is afoot.

Visibly proud, Gladden shows off an artist's impression for the brand new buildings the new department hopes to move into in a few years' time. "We hope to have a brand new departmental building to the west of Cambridge, on Madingley Road."

The department is currently working to raise the £40m ($78m) it needs for the building. Part of the funding will come from regular research partners, Gladden hopes, for whom the ability to buy into the new building will present an opportunity to ensure the department will be able to carry out key future research.

Merging chemeng with biotech will create a department "uniquely placed to become an international leader in the chemical and biotechnologies of the future," Gladden stresses. "While we obviously want to be known for our strength and critical mass in a few core areas, we will always support people with good research in *all* areas."