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New science degrees attract active minds

Alex Sherman studied HSC biology. Now he is a biotech major, writes

Fran Molloy.

Alex Sherman is into algae. “Algae survive all kinds of extreme environments, including space,” he says. “They are used in fertilisers and fuels and could even be used as a food source on space missions. There’s thousands of species with all kinds of capabilities. It’s crazy to think of what we could do with them.”

A second year bachelor of advanced science student at University of Technology Sydney, Sherman is majoring in environmental biotechnology.

“As soon as I got to year 11 and 12 and did biology, I loved it and I knew that’s what I wanted to do,” he says.

He chose the UTS degree because of the range of majors. In his first year, Sherman studied chemistry, maths, statistics, software and just one biology subject.

This year, much of his degree is project based, working with the UTS Climate Change cluster on how to preserve a species of marine micro-algae which is high in fats and makes a useful fish food.

“I’m trying to find a way to freeze the algae so that it survives when thawed out. It’s hard to store because it’s a living organism.”

He’s a solo biotechnology major, so he gets plenty of attention.

“I get to have this whole project to myself, I get access to so many resources and so much help it’s awesome, especially knowing that a lot of science students don’t get a chance to do this level of research until honours or masters level,” he says.

What can a student do with a science degree? A lot. Work in pure science, applied science, a career requiring an understanding of science or use skills acquired from study just about anywhere.

There’s a resurgence of enrolments in “hard science” degrees, says associate professor Michael Hitchens, associate dean at Macquarie University’s science faculty. Macquarie’s new bachelor of science (global challenges) offers technical hard science subjects alongside those applying science to practice and policy.

“We think many students will find it engaging,” Hitchens says.

“The most important consideration when choosing a

degree is that it should be something you love.” Hitchens says while biology has always been the most popular science degree at Macquarie, physics and astronomy applicants have surged in recent years. “Our links with the Australian Astronomical Observatory could be part of the attraction, along with increased mention in the news of progress towards a Mars mission,” he says.

Hitchens says a recent conference of Australia’s science deans confirmed universities across the country are focused more strongly on student employability.

“We’re looking at what we can do to help students in their future careers. Our graduates are likely to have an average of 10- to 14 different jobs by the time they’re 38,” he says.

“There’s a focus on employability and on helping students understand

the relevance of their studies,” he says. Scientific minds, research institutes and policymakers cluster in Canberra, where ANU has the fastest super computer in the southern hemisphere, one of the world’s largest 14UD accelerators for physics experiments, a new

\$240-million science precinct housing labs for biology and chemistry and a space simulation facility at the nearby Mount Stromlo Observatory.

Employer demand for maths graduates is booming, helping make ANU’s bachelor of mathematical sciences a so-hot-right-now degree.

At UNSW Faculty of Science, bachelor of data science and decisions graduates are also looking to highly paid careers.

“Data science is a new career, but if you check a jobs website you’ll see that there are already many more

highly paid jobs in Sydney for data scientists than for dentists, almost as many as for doctors,” says Professor David Warton, a researcher in ecological statistics.

“It is reasonable to assume that next decade there will be more highly paid jobs being advertised in the mathematical sciences than in medicine or law.”

A report published in March by investment fund Mercer on the future of jobs in life sciences, Asia Pacific, reports “deep specialisations in specific niches are sought across both the pharmaceuticals (small molecules) and biologics (large molecules) spectrum”. There’s also need for “technocrats with big data, artificial intelligence, machine learning, robotics and nanotechnology with biopharmaceutical orientation” the report notes.



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Professor David Warton



Alex Sherman is aiming for a bachelor in advanced science.