

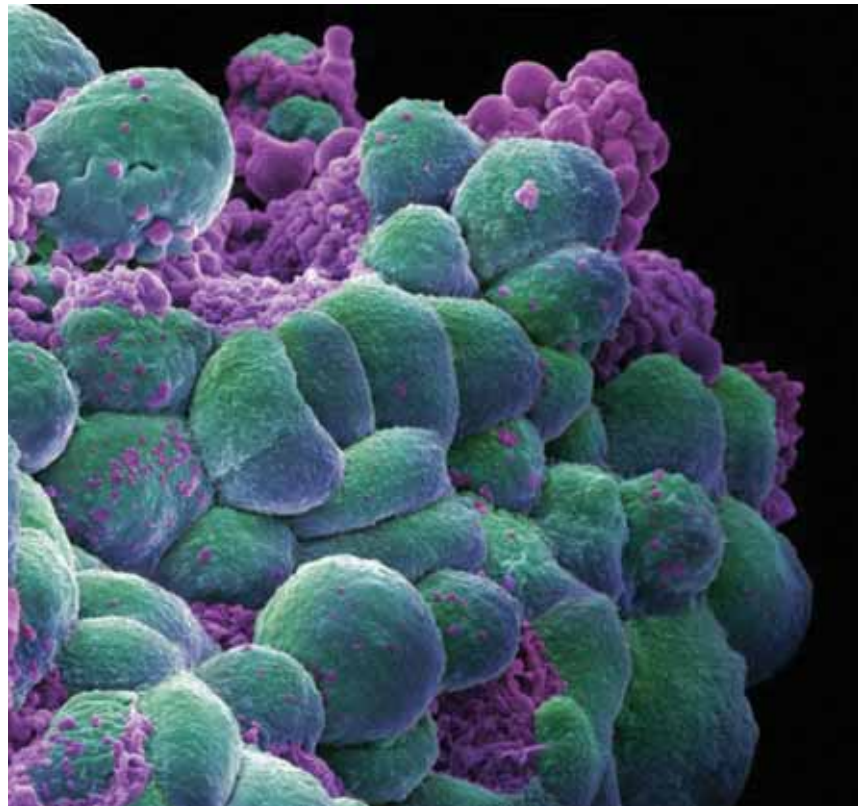


No drag here

A world first model for predicting fluid flows close to surfaces will enable engineers to reduce drag in vehicles, and in turn, lead to more efficient and greener planes, cars and boats, according to a University of Melbourne study.

Research team leader and Federation Fellow Professor Ivan Marusic from the Department of Mechanical Engineering says skin-friction drag accounts for 50 per cent of fuel expenditure in aircraft, so even modest reductions in drag would save money and significantly reduce carbon emissions.

"When air flows over a surface, skin friction drag is created. Most of this drag is a result of the chaotic and unpredictable nature of the boundary layer," he says.



Cancer 'smart bomb'

A medical 'smart bomb' designed to seek out and eradicate the root of cancer cells is being developed by Deakin medical researchers.

In collaboration with scientists in India and Australia, the Deakin researchers are working on a new generation of cancer medications that would target and kill cancer-initiating cells and would be more effective and cause less side-effects in patients than current treatments.

"Our aim is to develop a safe and novel drug delivery system that hits the cancer at its core, and kills the cells responsible for the resistance to current therapies and the recurrence of the disease," said Associate Professor Wei Duan, the project leader and researcher with Deakin's Medical School.

Ready to go insulin

A young Monash chemist and her colleagues have successfully strengthened insulin's chemical structure without affecting its activity.

The new insulin structure means that it won't need refrigeration.


The team from Monash's Chemistry Department has just filed a series of patents with the support of their long term commercial partner ASX-listed Circadian Technologies. Together, they're negotiating with pharmaceutical companies to start the long process of getting the invention out of the laboratory and into the homes of people with diabetes.

Team researcher Bianca van Lierop said they're also using their knowledge to develop a form of insulin that could be delivered by pill.

"Over two hundred million people need insulin to manage diabetes, but we still don't how it works at a molecular level," van Lierop said.

Her work is being presented for the first time in public through Fresh Science, a communication 'boot camp' for early-career scientists held at the Melbourne Museum.

The poor stability of existing forms of insulin complicates the management of diabetes, a condition which affects 1.7 million Australians.

"Like milk, insulin formulations need to be kept cold. At temperatures above 4 degrees Celsius, insulin starts to degrade and eventually becomes inactive. 



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