



# Magic of maths can predict the future

**DREAM JOB**

PENNY McLEOD

## To die for

**Job:** Ocean research scientist

**Where:** CSIRO

**Advantages:**

- Flexible work arrangement; being in the right place to study climate; overseas travel

MATHEMATICS has always been Jaclyn Brown's passion.

As an undergraduate student at the University of NSW, she thought her maths skills would lead her into banking, where she'd earn a lot of money.

When she learned during a lecture that it was possible to understand how the ocean behaves and predict what it would do just by using mathematics and physics, she turned to oceanography.

"It is magic that we have a language in maths that can predict the future," the CSIRO ocean research scientist says. "It's so beautiful that you can describe a physical situation with mathematical equations."

Becoming a theoretical oceanographer would allow Brown to study the relationship between oceans and climate change and in doing so, fulfil her dream to "make the world a better place".

"Climate is largely driven by the ocean and understanding changes in the ocean helps us predict how the climate around the world will change.

"Studying climate change is exciting because the work is cutting edge; you feel like you are doing something that's going to change the world. There is still so much we can learn about climate

change."

Brown first learned about climate as a child in her home town, Mildura, in northwestern Victoria, an area known for its vineyards, orchards and large sheep and grain farms.

"Knowing if it will be a wet or dry year is pretty damn important," she says.

The 32-year-old mathematician is now based in Hobart, "one of the world's leading places to study climate", and works for CSIRO's Marine and Atmospheric Science research team.

Her brief is to use differential equations, modelling and scientific experiments to predict how the climate is going to change in the Pacific Islands and thus help policy-makers and industries — such as Fisheries — to better prepare for the future.

It's her dream job, won through hard work and years of higher education.

After studying maths as an undergraduate at UNSW and winning the university medal for academic excellence, Brown completed a PhD in oceanography and then accepted a postdoctorate at CSIRO in Hobart.

She also completed a postdoctorate at Yale University in America in 2008.

While studying, she earned extra money as a weather reader on the Weather Channel in Sydney, and on ABC TV during the evening news in Hobart, and even considered a career in the media at one point.

"I had a choice: become a science communicator or a scientist," Brown says.

She chose the latter; in part because it would allow her to pursue her love of maths.

"It's a hard slog at university because you have to do really well [to get a scholarship] and be prepared to study for a long time," Brown says.

"I was living on \$20,000 a year while I was doing my PhD and that's 10 years ago. You have to really love what you're doing. You also have to be prepared to travel and not everyone is. But the experience you gain overseas is vital and you really need to work there as part of your training." Brown was employed full-time by CSIRO on her return to Australia.

However, the arrival one year ago of triplets almost derailed her career.

"Having triplets wasn't part of the career plan," Brown says.

"I thought probably naively that I could fit one child into my life.



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JACLYN BROWN

“My job involves a lot of travel and I was quite devastated when I learned I was going to have triplets.

“It’s expected that I do at least one overseas trip each year and I’m supposed to be giving lectures on climate change this year to the Pacific Islanders.”

Fortunately, she says, CSIRO has been a supportive employer and she’s now working half-time, after a period of maternity leave, and her work hours are flexible.

“When I was on maternity leave I kept sneaking into work because I love it so much,” Brown says.

“The great thing about triplets is that you don’t have to take as much time out of your career [to raise children while they’re very young].”

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