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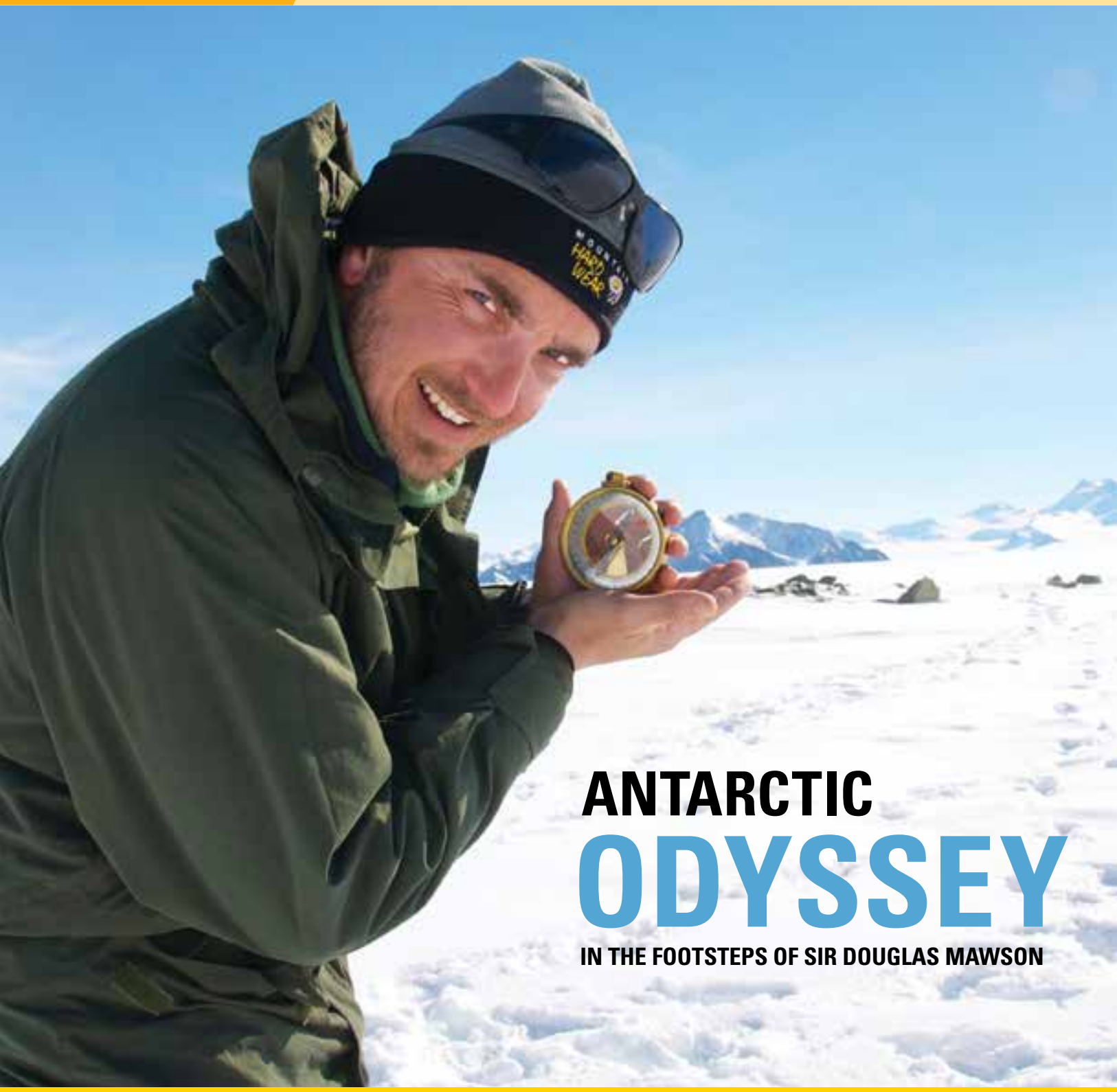

ANTARCTIC ODYSSEY

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Uniken is produced by UNSW's Media Office; +61 (2) 9385 1583 or uniken@unsw.edu.au. Issue 69. **Editor:** Steve Offner; **Deputy Editor:** Fran Strachan; **Editorial Advisers:** Kathy Bail, Denise Knight; **Contributors:** Anabel Dean, Joshua Gliddon, Susi Hamilton, Sarah Macdonald, Jonathan Pearlman, Deborah Smith, Fran Strachan, Louise Williams; **Photography:** Andy Baker, Maja Baska, Britta Campion, Steve Christo; **Design and Production:** Fresco Creative; **Subediting:** Dani Cooper; **Proofreading:** Pam Dunne.

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YOUR TIME STARTS NOW …

MEHREEN FARUQI, ASB

Environmental engineer, climate change activist and feminist, Mehreen Faruqi is the first Muslim woman to enter an Australian parliament. She hopes her appointment by the NSW Greens will lead to more diversity in our legislature.

"I want to change the stereotypical views people have about Muslim women," she says. "I've never been defined by my religion in any of my leadership roles – I'm not a religious spokesperson. The politics I'll be advocating relate to social justice, human rights and gender equality."

Faruqi grew up in Pakistan. In the final year of her civil engineering degree, two of her classmates went to war and never returned. Shortly afterwards she immigrated to Australia with her husband, infant son and two suitcases.

"It was the early 1990s, the Soviet–Afghan war had ended, a dictator had come to power in Pakistan and corruption was entrenched. We wanted a better life – it's a typical migrant story," she says pragmatically.

With a Masters and PhD from UNSW, she is now Academic Director, Master of Business and Technology Program, AGSM. Faruqi is the second of three generations to study at UNSW: her father came to Sydney as part of the Colombo Plan in 1957 to study civil engineering and her son is completing an environmental engineering degree.

What policies do you hope to influence in the Greens? Decriminalising abortion in NSW, stopping hunting in national parks, the creation of a world-class integrated transport system and addressing climate change.

How do you reconcile Green politics with your faith? We live in a democracy and a secular system of governance that should allow societies of different faiths and beliefs to come together without fear of discrimination.

Most vivid memory growing up in Pakistan: Playing cricket in the long summer evenings with the other kids on the street and enjoying the mangoes.

Most treasured possession: The fabulous photos my dad, who has passed away, took during his first trip to Australia. I can still hear him saying, "Sydney is the most beautiful place on the planet".

Book that changed me: *Silas Marner* by George Eliot. Even though it was set in England and I read it as a student in Pakistan, the questions it raised about class systems resonated with me and increased my awareness of social justice.

Role model: Dr Ronnie Harding who started UNSW's Institute of Environmental Studies. She was my lecturer and is the epitome of "practise what you preach".

By Fran Strachan. *Photo: Britta Campion*

PATH TO INDEPENDENCE

A smartphone app that doubles as a navigation aid is giving people with a visual impairment the confidence to explore, writes Joshua Gliddon.

Smartphones, equipped with the latest in mapping software and GPS technology, have made "finding your way" as simple as swiping your finger.

But there are limits. As anyone who has attempted to use GPS indoors knows, signals are often obstructed and ineffective. Extending navigation to all environments is the next big challenge.

Google is leading industry heavyweights in trying to find solutions to this problem. It's already rolled out indoor navigation "maps" for major airports, museums and shopping centres in the US, and in March launched its Australia product.

At UNSW, researchers from the School of Civil and Environmental Engineering are taking the concept even further – opening up the technology to the almost one million Australians living with some form of vision impairment.

Their approach relies on the fusion of sensor data from the phone, including wi-fi signals, and existing indoor maps like those available on the Android platform. The team presented the research at an international conference on Indoor Mapping and Navigation hosted by UNSW last year.

The system comes with a caveat, however. "It's not designed to be used by itself, so it's classed as a secondary aid," says team member Dr Binghao Li. That's because the phone-based system can't guarantee the user will avoid all obstacles as seamlessly as they might using a long cane or guide dog.

But what the system can do is provide users with an added tool to navigate tricky, and often scary, environments more confidently, Li says.

Another researcher on the project, industry partner Euan Ramsey-Stewart, knows the obstacles the blind and vision-impaired face. He has a degenerative eye condition called keratoconus, a deformation of the cornea. Vision from his right eye is now very limited, and the left eye, which does the majority of the work, is not much better.

Ramsey-Stewart hit on the idea of using smartphones when he was studying at UNSW, where he sought help from the geospatial engineers. His company, Ramsey Stewart Industrial Design (RSID), has freely licensed the resulting intellectual property via the University's Easy Access IP scheme.

The scheme takes ideas ordinarily locked away under licences and patents and essentially "gifts them to the community", allowing companies to develop the ideas for free.

Li and Ramsey-Stewart, along with colleagues Thomas Gallagher and Andie Yam, are trialling the technology with the vision-impaired community.

One participant, Megan Taylor, who has a condition that has left her with no vision in her left eye and only 3% vision in her right, likens the app to "getting your driver's licence".

"This is going to give people with blindness and vision impairment a new level of independence. It is literally like having your best friend beside you, who knows where you're going and how to get there," she says.

Together they have identified important accessibility issues. The first is that the phone needs to provide navigation data either hands-free, or leaving at least one hand unencumbered to interact with the environment or hold a cane or guide-dog harness.

It's also been decided to only create indoor maps for high-traffic areas with known paths, rather than trying to map every room in a building. "A balance needed to be found between final accuracy … and the effort needed to create the database," says Li.

Ramsey-Stewart says electronic navigation aids are about more than just ease of access for the vision impaired.

"In the end, it's a discrimination issue," he says. "It's about having the same rights as everyone else."

▶ Trial team member Megan Taylor. *Photo: Britta Campion*