Six degrees of innovation

Meet some of the ingenious Victorians boldly exploring ways to make a difference and helping navigate our way into the future

SIMON PLANT

THE more things change, the more they stay the same. Rose Hiscock doesn't believe that. Never has. As director of Science Gallery Melbourne, a new learning hub where art and science collide, Hiscock is almost duty-bound to believe change can improve, enlarge and energise the way we live.

"Innovation is about collaboration," she says. "About different people coming together to create something that wasn't there otherwise, where the whole is greater than the sum of its parts."

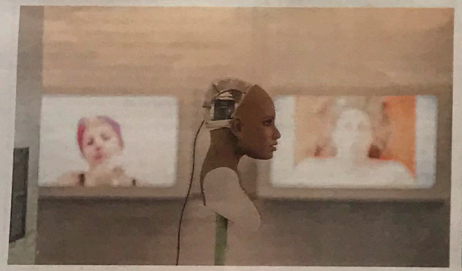
Hiscock is not alone in looking at Melbourne and our place in the world from an innovation perspective.

Today, we explore six realms of innovation in Victoria where people are asking big questions and exploring ways to make a difference — from a designer re-imagining medical technology to an activist farmer promoting sustainability and an engineer future-proofing us against natural disasters.

IT'S A COLLABORATIVE CITY ... A KNOWLEDGE CITY, A CULTURED CITY

Hiscock believes that among Australian capital cities, Melbourne is uniquely placed to innovate because "it's a collaborative city ... a knowledge city, a cultured city".

"When those things interact," she says, "you've got a very special place."



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ROSE HISCOCK
DIRECTOR, SCIENCE GALLERY MELBOURNE

WHEN worlds collide, the outcome can be cataclysmic.

Or profound.

Rose Hiscock fervently hopes for the second as Science Gallery Melbourne begins to take shape at the University of Melbourne.

Scheduled to open in late 2020, this innovative new space in Carlton promises to "involve, inspire and transform curious minds through arts and science".

Hiscock, the gallery's guiding force, is especially keen to make it a hub where young adults — aged 15-25 — can "experiment, learn, disrupt and explore".

"We need to be encouraging young people to take up the sciences," she says.

"To do that, we need a safe place for dangerous ideas. A place to imagine the future."

Anchoring the university's new Innovation Precinct (dubbed Melbourne Connect) around Grattan and Swanston streets, the 700sq m Science Gallery will also plug into an international network of like-minded institutions and attract a "global community of scientists and contemporary artists".

Hiscock, with extensive museum management experience, hopes the gallery can attract around 250,000 visitors a year.

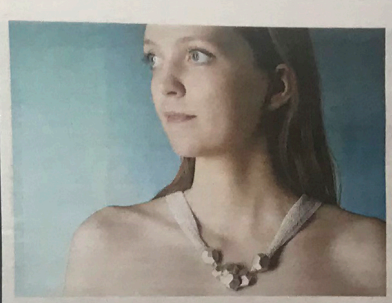
"That's where Melbourne comes alive," she says. "It's an amazing, research-intensive city with amazing artists and scientists. Let's bring them together."

Until its purpose-built home is complete, Science Gallery is holding pop-up exhibitions. The latest, Perfection, explores notions of beauty and the new technologies that allow us to modify, hack and transform our lives.

Billed as "part-experiment, part-exhibition", this hugely popular show has been curated by a multi-talented panel that includes a particle physicist, a musicologist and a plastic surgeon.

Just the kind of "intellectual mash-up" Hiscock relishes.

PERFECTION, MELBOURNE SCHOOL OF DESIGN, UNIVERSITY OF MELBOURNE, UNTIL NOVEMBER 3. PERFECTION.SCIENCEGALLERY.COM



Visionaries: Rose Hiscock (left) heads up Science Gallery Melbourne, to open in 2020; and (far left) Jessica Snir's face is scanned by a computer to reveal a mathematically "perfect" version at the Perfection exhibition.

PICTURES NICOLE CLEARY, JASON EDWARDS

Look of future: Designer Leah Heiss with a wearable ear cuff that doubles as a hearing aid (top right); and (top) a heart rate monitor necklace by Heiss.

LEAH HEISS
HEALTH TECHNOLOGY MAKER

A CARDIAC monitor necklace, a pendant that administers insulin through the skin and swallowable devices to detect disease.

Leah Heiss goes where others fear to tread when it comes to "designing for human health".

"That's because there's a lot of beautiful design happening for people who are feeling well," the Melbourne innovator says. "There's a lot less for people who might be disabled or ageing and that's the area that needs attention."

Heiss — "working at the nexus of design, health and technology" — devises her "emotional technology" projects with experts in the realms of health care, engineering and manufacturing. Her latest project, a self-fit, modular hearing aid called Facett, may be her most significant yet.

The device — named for its faceted appearance — has been devised by Australian hearing aid company Blamey Saunders Hears, and seeks to "empower people to self-manage their hearing experience".

Heiss was "embedded" in the firm's technology team for months and drew inspiration from crystalline mineral shapes held in Melbourne Museum's mineralogy collection.

"Each project is a kind of puzzle that needs to be solved," she says.

And Heiss, whose speculative projects are often exhibited in galleries, insists hers is a "human-centred approach" every step of the way.

"It's important to empathise with the people you are designing for," she says. "What is it like to be a 13-year-old girl with diabetes? I always try to put myself in their shoes."

BLAMEYSAUNDERS.COM.AU
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DR AMIN HEIDARPOUR
DISASTER MITIGATION ENGINEER

IS your home built to withstand an extreme event?

This is no idle question. Not when fires, floods and other catastrophic events are pushing our emergency services to the limit.

The Australian Business Roundtable for Disaster Resilience and Safer Communities estimates that in the 10 years to 2016, the total economic cost of natural disasters in Australia averaged $18.2 billion a year.

Much off this arose from damage to buildings and critical infrastructure.

Fortunately, we have Dr Amin Heidarpour on our side. This Monash University engineer and academic is looking beyond conventional construction and leading urgent efforts to develop "disaster-resilient" prefab structures with "exceptional resistance and recovery capacity".

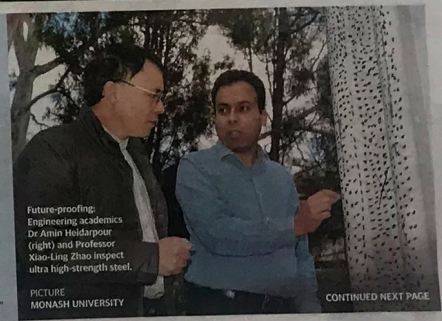
"Repairing or replacing infrastructure assets after a disaster is often difficult and costly," he says. "Resilience-based design has a great potential to reduce expenditure on natural disaster relief and recovery."

A Monash research team, led by Heidarpour, Professor Xiao-Ling Zhao and PhD students, is developing hybrid tubular columns fabricated from ultra-high strength steel. This steel, commonly used in the automotive and mining industries, has not been applied to civil construction. But Dr Heidarpour says, "Owing to innovative technology developed by Monash, this material can now find its place in civil construction everywhere in the world.

"Compared to the similar products available in the construction market, the hybrid column we are developing is lighter, stronger and environmentally friendly. It offers exceptional resistance and recovery capacity and is easily assembled."

The long-term benefit?

"Protecting lives and saving significant expenditure in the aftermath of extreme events."



Future-proofing: Engineering academics Dr Amin Heidarpour (right) and Professor Xiao-Ling Zhao inspect ultra high-strength steel.

PICTURE MONASH UNIVERSITY

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