



**the university
for the real world**



**Queensland
Government**

QUT Youth Research Forum
powered by the
Queensland Department of Environment and Science

DESIGNING FOR FUTURE FOOD

November 2022

For further information please contact:

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Queensland University of Technology was delighted to partner with the Department of Environment and Science to host the QUT Youth Research Forum for QUT students.

The QUT Youth Research Forum topic focused on DESIGNING FOR FUTURE FOOD - innovations for human friendly and carbon neutral foods.

Sparking an internal collaboration opportunity, the QUT YRF was led in partnership by QUT's Centre for Future Enterprise, Innovation Central Brisbane, QUT Entrepreneurship and School of Biology and Environmental Science. QUT designed the Youth Research Forum as a three-phase ideation program that aimed to enable student connections with industry; formation of teams and ideas; and provide the space, mentorship and capacity to build working prototypes.

QUT's Youth Research Forum program included three key phases:

1. YOUTH RESEARCH FORUM & DATATHON (19 -26 August 2022)

- Ideation and Pitch to Industry to win project budgets, valued at \$20,000

2. BUILD the PROTOTYPE (September to November)

- A structured ten-week program, mentored by researchers, design thinking experts, and industry, to develop a working prototype

3. SHOWCASE to GROW (23 November 2022)

- A public networking event attended by the Minister and industry where students demonstrate prototypes and explore further interest for continued development.

The program has created a catalyst for multiple industry partners and cross-university engagement involving a significant number of internal and external stakeholders, including:

- QUT Faculties of Science; Business and Law
- QUT Entrepreneurship and Innovation Central Brisbane
- QUT Research Centres: Agriculture & Bioeconomy; Data Science; and Future Enterprise
- Industry: CSIRO; All G Foods; Cellular Agriculture Australia; Eden Brew; Cisco
- Gov: Department of Environment and Science; and Ecoscience precinct

“ *As someone who is neither a biologist, food specialist (although, I am a big fan of food!), nor engineer, I was thrilled to have the opportunity to develop an engineering solution to an important future food challenge. The event really opened up possibilities for innovation and creativity, and particularly encouraged cross-disciplinary collaboration.*

Each stage of the process was well structured and supported with experts, learning modules and materials to help us come up with the best pitch we could at the end of the week. I really enjoyed every aspect of this and look forward to joining more in the future!

- Lauren Fell



“ *Seeing students come together for the Youth Research Forum to solve future food challenges was a great learning experience for me. I am very excited to be mentoring a team over the next three months. I am going to support them with my scientific knowledge to develop a prototype for small-scale mycoprotein production.* - Dr Marius Jessen

INNOVATION CENTRAL BRISBANE

Accelerating innovation through collaboration

Innovation Central Brisbane (ICB) is a cutting-edge university-industry collaboration, advancing digital transformation through an open innovation ecosystem and research hub.

Led in partnership by QUT and Cisco, ICB connects industry with students, graduates and researchers to design, develop and scale technology solutions to address real-world challenges that unlock new value.

QUT and Cisco

QUT and Cisco have formed an exclusive partnership in Queensland that will provide world-leading, emergent solutions, skills, and new business opportunities. This research partnership forms part of Cisco's \$61 million Country Digital Acceleration investment in Australia.

Through this partnership with Cisco, QUT joins the National Industry Innovation Network (NIIN); a national network Cisco has created with all university, innovation central and corporate industry partners. The NIIN aims to enable greater scale, diversity of thinking and impact across the Australian innovation ecosystem to drive digital acceleration, economic and social growth. Other partners in the NIIN includes: Optus, University of New South Wales, Curtin University, La Trobe University, and Flinders University.

Trusted Retail and Logistics

As part of QUT and Cisco's partnership, Cisco has invested in a global research program led by the Cisco Chair in Trusted Retail and Logistics. The research will explore trusted retail and logistics innovation, designing new trust management strategies and business models for industry. It will also connect industry with student talent, esteemed QUT alumni, and university researchers who will collaboratively design, develop and scale technology solutions to address real-world challenges in the retail and logistics industry.

Create daring solutions to real-world problems

Connect with industry experts, leading researchers, and student talent to collaborate, build and test proof of concepts and rapid prototypes. QUT's specialised test site allows users to experiment and learn about new technologies in a non-operational setting. Designed to contain and manage risk, users can scale technology solutions and address real-world challenges in a safe, trusted and secure environment.



Innovation
Central Brisbane

A collaboration led by 

FOUNDATION PARTNERS



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THE TEAMS

IMMERSIVE FUTURE FOOD LEARNING EXPERIENCE (IFFLE)

Wai Hong Joseph Lee
Hao Long
Grace Weston-Oliver
Fatima Zuba Ahmed

DIGITAL DELI

James Darcy-Miles
Tu-Ai Le
Amay Small

FOOD VALUATOR

Noelia Degregori Alarcon
Catherin Hu
Arnutt Kanachanatavee
Thu Trinh

MEATING CULTURE

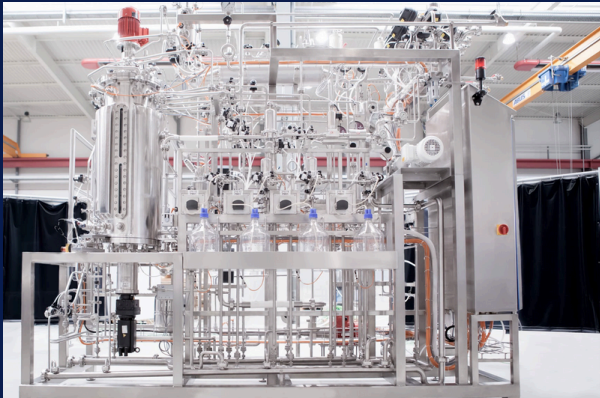
Lauren Fell
Laura Peachey Burgess

IVEGAME

Sewify Ahmed
Joe Tang
Stephen Vu

IMMERSIVE FUTURE FOOD LEARNING EXPERIENCE

When it comes to food production, 'business as usual' is no longer an option. IFFLE supports STEM education through unique future food learning experiences utilising virtual reality lab simulations.



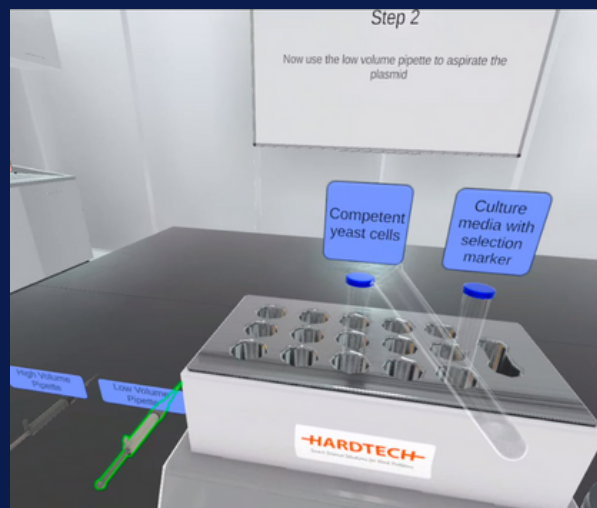
REALITY



VIRTUAL REALITY

THE VIRTUAL LAB

Vlab is the interface for scientific study and practice, linking school curriculum to real R&D, not only in the classroom, but for remote education.



IFFLE endeavours to foster interest in future food production through immersive and engaging learning experiences, nurturing the skills that will leave the next generation well equipped to tackle some of the biggest challenges facing global food production.

Create moments worth sharing with

digitaldeli

Making alt foods the number one choice in every home.

Elevating consumer perception of alt foods

Our Product

- > Customisable entertainment boxes & packages.
- > Setup guides (No cooking needed).
- > Delivered to your door.
- > Wide variety of tasty, sustainable and cruelty-free alt deli foods alongside the traditional deli experience.

Why Digitaldeli?

People love the deli experience we need to bring it to the **21st century**:

- > Adding alt-foods to the menu
- > Building off tradition
- > Bringing quality, convenience and taste to your doorstep
- > Elevating the heart and soul of the deli experience



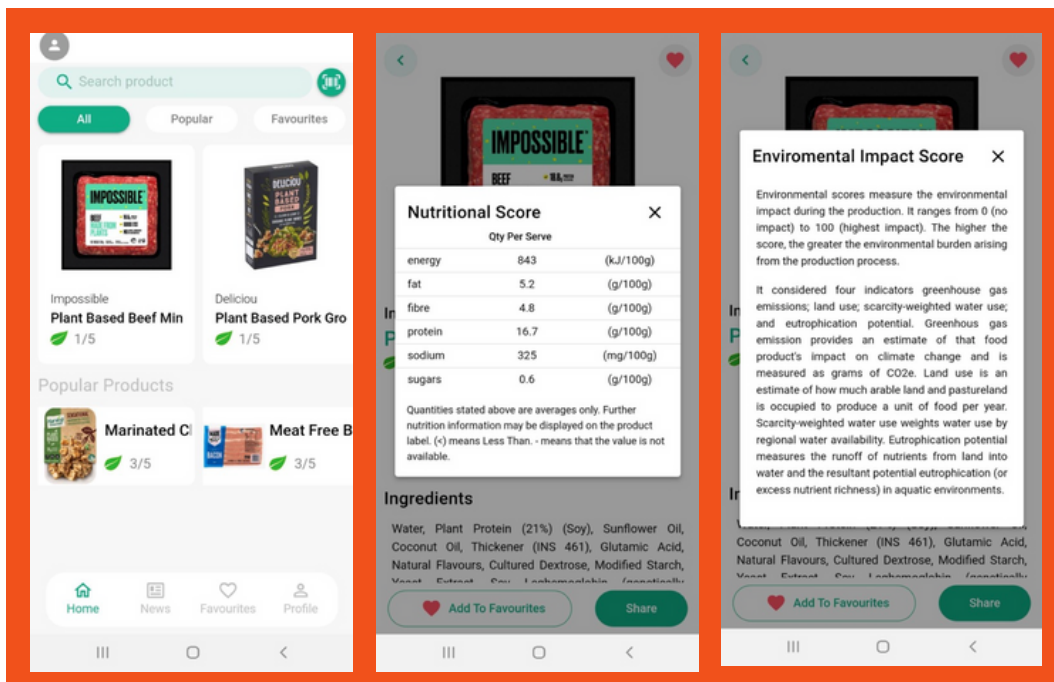


FOOD VALUATOR

Customers are hesitant about the quality and taste of alternative protein products.

They may make a purchase as a 'one-off' that failed to meet their expectations.

Food Valuator is a mobile application that provides trustworthy ratings and reviews for many alternate protein-based products in Australia.



Environmental Impact Ratings

Using four environmental indicators (greenhouse gas emissions, land use, scarcity-weighted water use, and eutrophication potential), the Environmental Impact Rating is calculated by estimating the percentage composition of each ingredient in each food product from 0 (no impact) to 100 (highest impact).

Nutritional Ratings

The Heath Star Rating (HSR) calculator is used to determine the Nutrition Ratings through five categories: dairy beverages, food, dairy foods, fats and oils and cheese. HSR is a rating system that rates the overall nutritional profile of packaged food and assigns it a rating from 0.5 stars to 5 stars.

The mini myco by meating culture



The Industry Challenge CSIRO

A digital solution to increase consumption of alternate protein products

Do consumers trust alternative protein products?



Build consumer trust by giving them agency over what they eat.



Let them make it themselves!

The Mini Myco allows consumers to produce their own plant-based protein in a fully controlled environment in the comfort of their own home.

Fungus-Based Protein

Tempeh

Mixed beans & grains with edible fungus grown throughout



Mycoprotein

Biomass made from fungus



Mushrooms

Commonly consumed in a variety of forms





IVEGAME

Ahmed Sewify
Joe Tang
Stephen Vu

WHAT ARE THE PROBLEMS?

Alternative products will increase the global food supply, however, there are some problems:

01

Habit

People have been **familiarised** with meat products. They did not get access to alternative food.

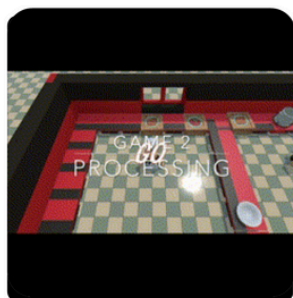
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Stereotype

72% of young adults in our survey hesitated to try plant-based products due to their suspicions or doubts about the **taste** of products and the **transparency** of the product-making process.



PRODUCT OVERVIEW



PROCESSING MODE

make "meat" from the ingredients they grew

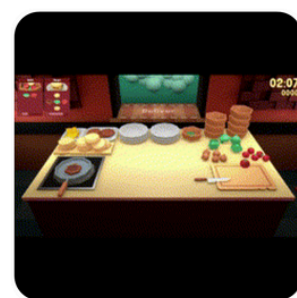
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FARMING MODE

Allow users to cultivate their own products and understand the ingredients

1



COOKING MODE

Make their own foods based on recipes

3



The QUT YRF has displayed the true spirit of collaboration connecting QUT students with a wide and diverse group of students, academics, industry partners, early career mentors, and domain experts. The energy, enthusiasm and excitement that has been generated has been acknowledged by senior executives across QUT and industry partners. Thank you to the many students for their contributions, creativity and collaboration. The ideas for Future Food are innovative and tangible.

Thank you to the QUT YRF industry partners for their significant contribution of time and expertise to the program. Thank you Claudia Vickers of Eden Brew; Anna Tao and Michelle Colgrave of CSIRO; Jared Ryanes of All G Foods; and Lisa Musgrove and Sam Perkins of Cellular Agriculture Australia.

Thank you sincerely to our partner Queensland Department of Environment and Science, with special mention to Meredith Nolan and Allison Bambrick, for the opportunity to participate in this program and your continuous support and encouragement throughout.

And finally, thank you to everyone in the QUT ecosystem for the deep collaboration and ongoing support during the QUT YRF. In particular to the project team who delivered the QUT YRF program: Prof. Robert Speight, Vibhor Pandey, Peter Townson, Dr. Char-lee Moyle, Laura Peachey Burgess, Anisa Hobaya, and Gemma Alker.

Thanks to our industry partners



and CSIRO

