

Cellular  
Agriculture  
Australia

# Year in Review 2023





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## OUR MISSION

We are building the ecosystem to position Australia as a leader in cellular agriculture and to enable its impact potential.



# From the CEO

2023 has been a rollercoaster for the cellular agriculture sector in Australia. Here's a few of my observations and reflections from the year that's been.

## Economic climate

Everyone felt a pinch this year. There has been a global shift to reducing expenditure and extending runways across the cellular agriculture ecosystem. Australia has not been immune and neither has the not-for-profit sector.

Yet, even in this tough stretch, we saw new companies launch, new products developed, Australia's first cultivated meat application pass FSANZ's scientific risk assessment and much-needed pilot-scale infrastructure under development.

2023 has proven the technology works and I am 100% convinced that the products it will create have a critical role to play in the future of our food system.

## Collaboration & alliances

Whether it be linked to our government submissions, our key terms project or our Industry Working Group on Food Safety Regulation, we have engaged with, sought feedback from, and been informed by individuals and institutions across the sector.

Why? Because we know we don't hold all the answers - but many of them sit with the great minds and generous people who are willing to engage for the benefit of the sector as a whole.

Because our work is better as a result of the diverse and critical eyes catching our mistakes and helping us overcome them.

Because bringing the sector together to work on common objectives is something we do well and we love doing it.

I've also noticed a shift in the way different players are looking to work together through formal partnerships and informal but genuine collaboration. For me, this shift is most notable in the precision fermentation space. This change is in part being driven by investors indicating there is funding for those focussed on "unlocks" across the value chain.

## Growing government interest

It has been exciting to see a positive uptick in interest and proactive engagement from state and federal governments in cellular agriculture this year.

Noteworthy examples include Breakthrough Victoria's \$6m investment in Eden Brew's Series A, as well as Trade & Investment Queensland's dedicated investment forum on cellular agriculture during the Asia-Pacific Agri-Food Innovation Summit in Singapore. This was complemented by positive engagement and emerging opportunities with the Industry, Science and Resources, Education and Agriculture, Fisheries and Forestry departments.

We've also seen the formal endorsement of food systems at a global level. This has included recognition of food systems at COP28, as well as the UNEP's landmark endorsement of cellular agriculture as a potential solution to several critical challenges in our food system.

Whilst a positive step forward, formal endorsement from the Australian government and significantly more support through progressive policy development and financing mechanisms is required for the cellular agriculture sector to thrive.

Working to advance emerging technologies is always going to be a decades long journey requiring sustained effort, dedication and financial backing. For a sector which is still so nascent in Australia, I am incredibly proud of what has been achieved this year and of the role we have played to support it.

I hope you enjoy hearing about our highlights from 2023 in the following pages.



**Sam Perkins**  
CEO



**Above:** Cultivated lamb burger by Magic Valley



# About us

Cellular Agriculture Australia (CAA) is a registered Australian not-for-profit dedicated to advancing Australia’s cellular agriculture sector.

We work across Australia’s entire cellular agriculture sector, convening conversations to identify and work on common, non-competitive priorities. We are inclusive and participatory in our approach and engage with a broad range of stakeholders on key thematic areas.

In 2023, our work has focused on five core strategic pillars:

Pillars	Outcomes
 Regulation	Cellular agriculture companies perceive and experience the Australian regulatory framework as attractive, clear, consistent and easily accessible.
 Talent development	The cellular agriculture sector in Australia has access to the sustainable pipeline of appropriately skilled and experienced talent that it requires to scale well.
 Sector building	Australia’s cellular agriculture sector is made up of diverse stakeholders who leverage one another’s strengths, and work together on common challenges and opportunities for mutual benefit and common good.
 Advocacy	Australia’s cellular agriculture sector is effectively positioning itself around key topics such as regulation, talent development and access to infrastructure clearly and consistently.
 Accountability	The cellular agriculture industry in Australia is objectively measuring its performance across a number of social, environmental and economic indicators.

These five pillars have been the focus of our work in 2023. However, it is important to note that our focus for 2024 has since pivoted — see “Strategy and focus for the year ahead” (p. 16).

# CAA’s year at a glance

- January

- Volunteers Kate Secombe and Jess Freitag, transition to paid positions as our Newsletter Coordinator and Marketing Communications Coordinator respectively. Hired Lucie, our Education Program Coordinator
- February

- Launched our **Seed Grant program**
- March

- Hired Victoria Taylor, our Head of Sector Building & Advocacy
- May

- Launch of CAA’s new website
- June

- Hosted a **cross-sector workshop on food safety regulation** bringing together 22 individuals representing companies, researchers, and regulators
  - Co-hosted Australia’s inaugural **CellAg Summit** conference in partnership with Future Alternative
- July

- Initiation of our Industry Working Group on Regulation
- August

- Piloted **CellAg Challenge** student outreach event
  - Released inaugural State of the Sector report
- November

- Three **technical working groups** on regulation formed
  - Seed grant program** concludes with six open source research projects completed
- December

- Key Terms & Language industry consultation completed
  - Beacon for Regulation in Australia** project completed with five founding members
  - Completed an initial scoping study to inform impact measurement and reporting for the sector

The subsequent pages highlight our accomplishments and progress towards outcomes across a number of our 2023 priority areas: regulation, talent, sector building, advocacy and engagement.



# Highlights: Regulation

Regulation is a clear priority for CAA, with the view that a regulatory environment that prioritises food safety while encouraging rapid innovation is critical for the sector to scale.

We are leading the charge through several critical initiatives that aim to enable a transparent, consistent and cost-effective approach to regulation for our fledgling sector.



As a leading Australian company, Noumi's involvement in cutting-edge research and production of essential dairy proteins like lactoferrin showcases our commitment to shaping a healthier and more sustainable future. CAA's role in addressing the dynamic challenges of cellular agriculture is evident in the impactful meetings they have convened between government, industry, academia, and regulatory stakeholders, in addition to their facilitation of collaborative industry workgroups that enable constructive problem-solving, and a collegial environment to bring about meaningful solutions. Particularly, CAA's facilitation of the regulatory dossier template development with key industry stakeholders will simplify the regulations approval pathway."



**Sonja Kukuljan**  
Director of Science and Nutrition, Noumi

## A beacon for regulation

In one of our most ambitious projects to date, CAA led the development of a set of resources, including dossier templates, aimed at supporting cellular agriculture companies to navigate the food regulation system in Australia.

The resources provide a detailed overview of the Australian and New Zealand regulatory framework, as well as application requirements and templates for novel foods and products produced using gene technology. These resources are currently available via our pay-to-access Regulation Resource Hub.

We are proud to have partnered with several industry leaders including All G Foods, APAC Society for Cellular Agriculture, Eden Brew, Noumi and Vow, who co-funded and contributed significant expertise to this project.



Above: CAA's pay-to-access Regulation Resource Hub



## Cross-sector workshop on food safety regulation

In June, we hosted a full day cross-sector workshop focussed on food safety regulation. We brought together 22 company, research and regulatory representatives to deep-dive on what needs to be done to ensure a food safety regulatory environment in which the cellular agriculture sector can grow and thrive.

## Industry working group

We launched an Industry Working Group on Regulation to coordinate the sector's approach to the regulation of cellular agriculture products going forward.

This initiative has enabled us to successfully establish an ongoing dialogue between a range of critical regulatory stakeholders. The working group has been designed to act as a key mechanism for the dissemination of information between Australian regulators (e.g. FSANZ), and industry, as well as being a conduit for information flow between participants from across the Asia-Pacific region.

Above & Right: CAA's workshop on Regulation



The regulation workshop hosted by CAA was a great opportunity for us at Magic Valley to meet with both the regulators from around the country as well as many other companies and academics working in the novel food space. The collaborative nature of the day was extremely encouraging. It's easy to just work head down and not realise that others have many of the same issues you do. Overall, the day was extremely informative and made it clear that we are all working together towards a similar goal; the production of new, safe and delicious foods and drinks."



**Andrew Laslett**  
Head of Research and Development, Magic Valley





# Highlights: Fostering talent

“

At the beginning of the Seed Grant Program I had no knowledge at all of cellular agriculture, and I hadn't studied any aspects of biochemical engineering either so my knowledge of cellular biology was quite limited. Despite this, I thoroughly enjoyed reading up on the sector during my research, with it becoming apparent to me quite early on that this is an area of science that has a huge future ahead of it, one that I am keen to be a part of. It honestly excites me to imagine working in an area that has the potential to quite literally transform the way humans eat, with my prospects of landing a role boosted considerably by receiving the seed grant from CAA.”



**Freddie Briggs**  
Seed grantee, Chemical Engineering at The University of Melbourne



**Above:** CAA Seed Grantee Megan Arden

In 2023 we focussed on exposing university students to the multi-disciplinary research needs of the cellular agriculture sector.

## Seed grants

In 2022, we secured funding to support up to eight Honours and Masters students completing research projects relevant to the cellular agriculture sector. The programme objective was to inspire new talent to enter into the field and support novel and open access cellular agriculture research in Australia. We confirmed six students from across consumer science, chemical engineering, and cell biology. Five of the six students have completed their projects, with the last due for completion mid-2025.

We set out to deepen grantees involvement with the sector through a structured programme which included industry and academic speakers, as well as personal development sessions.

Sarah Cook, one of the grantees, said, “Meeting many amazing individuals in the CellAg space who were inspiring in their work and generous with their time. It feels like the industry is a place full of like-minded people who want the best for people and the planet and it's so encouraging as a student to feel that hope.” We couldn't agree more.

We held a wrap-up session in November, hosted by the University of Melbourne Department of Chemical Engineering. We were incredibly impressed with the students' high quality and relevant insights produced in a short timeframe.

Their open access research will be made available for public viewing by early 2024.

## CellAg Challenge

As part of National Science Week, we designed and held a hackathon-style event: the CellAg Challenge. The programme set out to provide students with a chance to learn about cellular agriculture while engaging with a structured design-thinking approach to problem solving.

The CellAg Challenge brought together university students from diverse academic backgrounds and introduced them to the field of cellular agriculture. It was a hybrid event, with students having the option to participate online or in-person hosted by the University of Melbourne Future Food Hallmark Research Initiative. By engaging participants in this challenge, we aimed to foster interdisciplinary collaboration, nurture the development of innovative ideas, and cultivate a deeper understanding of the potential that lies within cellular agriculture.

Student feedback from the day was extremely positive, with students finding the day highly engaging and valuable.



**Above:** Students participating in CAA's CellAg Challenge

“

The Cellag Challenge provided a fantastic opportunity to both network with people from vastly differing backgrounds, as well as see how their areas of expertise influenced their viewpoints on the challenges facing the sector.”

**Anonymous**  
CellAg Challenge participant

**Below:** Seed Grantee's and supervisors meet for final presentations at The University of Melbourne





# Highlights: Sector building

This year we continued to leverage our participatory design capabilities to bring together diverse stakeholders and work on common challenges and opportunities for the sector.

One of our greatest achievements in 2023 was bringing the sector together in Australia’s first conference dedicated to cellular agriculture – the CellAg Summit.

“

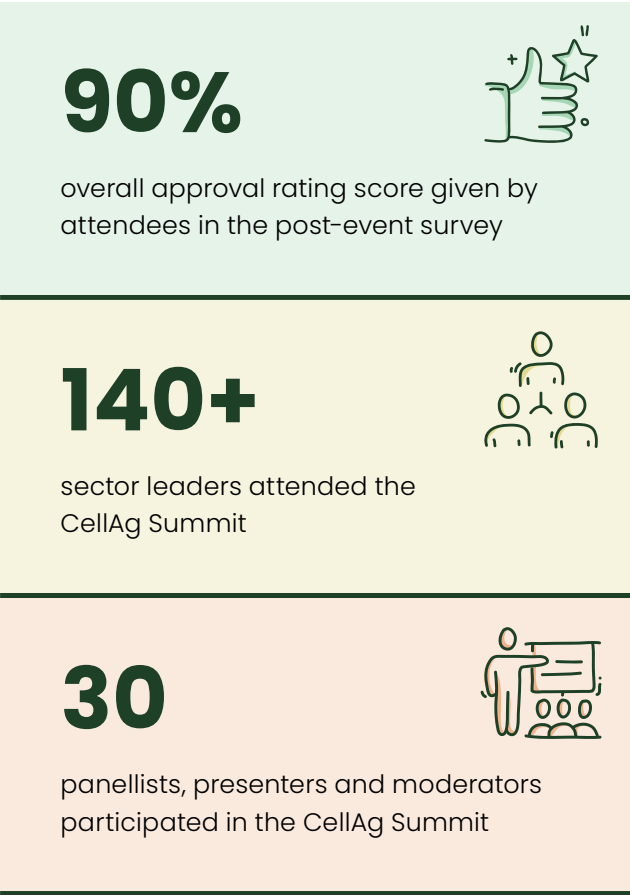
There was some excellent discussion on the realities of the industry, where it’s at, where it needs to be, how to get there and encouraging collaboration above individual business commerciality to ensure wins all round.”

**Anonymous**  
CellAg Summit attendee



## CellAg Summit

In partnership with Future Alternative, we co-hosted Australia’s inaugural conference dedicated to cell cultivation and precision fermentation. The day was attended by over 140 representatives from multiple interest groups including cellular agriculture companies and consortia, investors, consumer-goods and contract manufacturing organisations, media companies, Australian universities and the Australian government.



Left: Animal-free dairy milk by Eden Brew



Above: CEO Sam presenting the keynote speech at the CellAg Summit

It was a day of open and authentic conversations, and there was a clear readiness to collaborate to build a cohesive cellular agriculture sector in Australia. CAA is proud to have been a part of such a milestone for the cellular agriculture sector in Australia.

The day was jam-packed with panel discussions and debate, delving into topics including consumer awareness, scaling and infrastructure, commercial viability, technical challenges, and the investment landscape. The conference was incredibly successful in facilitating meaningful dialogue, as well as breaking outside the echo-chamber typical of a small and nascent sector.

Overall, the Summit cemented the notion that the cellular agriculture sector in Australia needs dedicated, targeted and ongoing support, and that CAA has a significant and growing role to play.

Thank you to our event sponsors the NSW Government, All G Foods, Eden brew, Merck ANZ, Sartorius and Vow for making the day possible.

“

The energy was very positive. There is much hope for the future and everyone was willing to do their part to drive the industry forward. The discussions were very honest and frank.”

**Anonymous**  
CellAg Summit attendee



Above: All G precision-fermented dairy



# Highlights: Advocacy and engagement

“

Words have power. They shape the consumers’ expectations and sensory experiences of various products. I have witnessed this phenomenon across a diverse range of products and consumers. It was a pleasure to participate in the development of the Key Terms Language Guide for CAA. I was impressed by the multidisciplinary collaboration among the different stakeholders involved in this project, such as legal experts, food scientists, and consumer experts. In my opinion, this kind of collaboration is essential for the future of CAA, as it leads to viable products that earn the trust and preference of consumers.”



**Gie Liem**  
A/Prof, Deakin University’s School of Exercise and Nutrition Sciences

“

CAA has been fantastic in bringing together industry peers to drive buy-in and consistency across the language used as new categories, like precision fermented dairy, come to fruition. Their pursuit of language simplification across complex research, science and product development not only benefits the industry but will be hugely impactful as consumers request to learn more about novel technologies. On behalf of our future consumers, Eden Brew is proud to be part of this conversation.”



**Jess Monk**  
Head of Product & Marketing  
Eden Brew

This year, we have been deliberately targeted in our advocacy approach. Our work has focused on the urgent need for a consistent foundation of language for the sector, advancing the regulatory agenda and responding to relevant policy submissions.

## Key terms & language

A much needed focus this year has been a focus on establishing a foundation of clear and consistent language for the sector in Australia. The project came about in response to common concerns about the inconsistent, inaccurate and derogatory language being used by and about the sector.

The project has involved multiple phases, including substantial secondary research, development of preferred terms and definitions, and two rounds of consultation with key stakeholders. In November, we held a consultation workshop bringing together 11 critical industry stakeholders. Following this, we have published our first iteration of our ‘Key Terms in Cellular Agriculture Language Guide’.

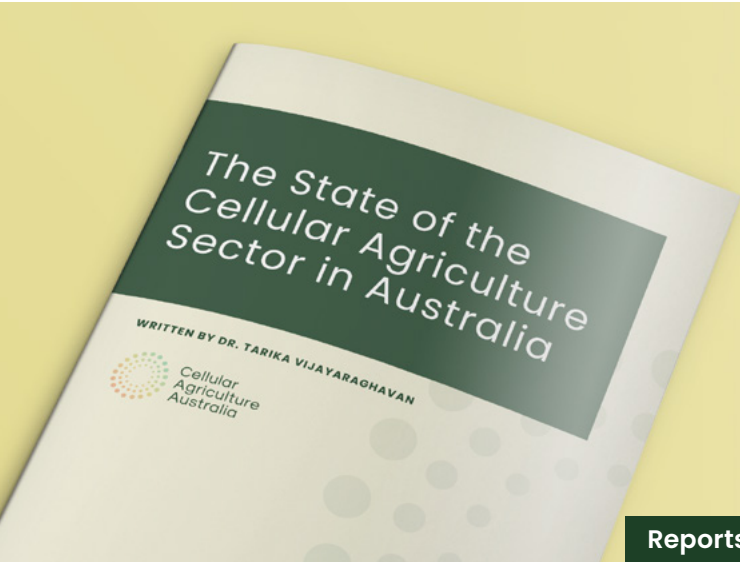
In 2024, we will be releasing targeted resources, aimed at specific stakeholders including media and government. We also intend to collaborate within the APAC region to further bring this work to life.



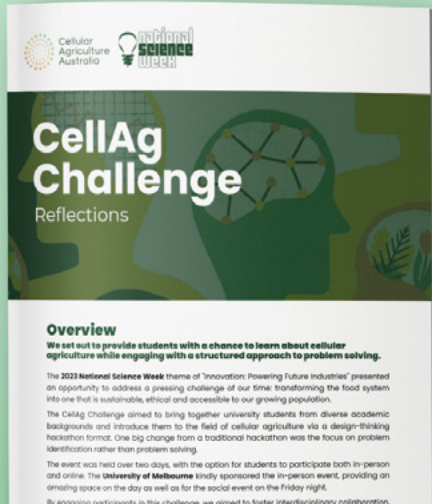
Magazine features



Radio features



Reports & Publications



Above: Communications and engagement highlights

## Communications and awareness-raising

In 2023, our communications strategy centered around showcasing industry progress and achievements to raise awareness and foster a connected cellular agriculture ecosystem in Australia.

Our primary engagement channels included LinkedIn and our monthly e-newsletter ‘Cultivated’. We also leveraged our unique lens and insight to produce various publications and resources through the year, a notable highlight being our inaugural ‘State of the Sector in Australia’ report in collaboration with Dr Tarika Vijayaraghavan of Trove BioSciences and Nicholas Dahl of Alternative Proteins Global. We also launched a refreshed website in May.

## Government submissions

We selectively responded to policy reviews that are of relevance to the sector. In 2023, we had a focus on raising the sector’s profile within the Australian government’s innovation agenda. We advocated for cellular agriculture to be included in the National Science and Research Priorities and made a submission to the National Reconstruction Fund (NRF) consultation paper, advocating on behalf of 13 organisations for the cellular agriculture sector in Australia to be seen as a critical area of investment.





**Above:** Forged parfait by Vow

# Learnings

2023 was a year full of powerful learnings. The following list in particular have been critical to reflect on to inform our revised strategy and approach for 2024.

## Outcomes over outputs

Focussing on delivering meaningful outcomes over tangible outputs created a shift in the type of projects we took on. They were inherently more complex and with longer timeframes, our internal perception of progress, particularly in the first half of the year, felt slow. Delivering on strategy-aligned outcomes is hard and it takes persistence and commitment. This has marked a significant shift in how we operate as an organisation, but it has paid dividends and is something we will continue.

## A shift in horizons

Much of our work to date has been focused on adding value in relatively short timeframes. This has been essential to prove our value and build our reputation. However, it's clear we need to look towards what will ultimately be required for the sector to succeed, much of which has a longer time horizon.

## Funding our work

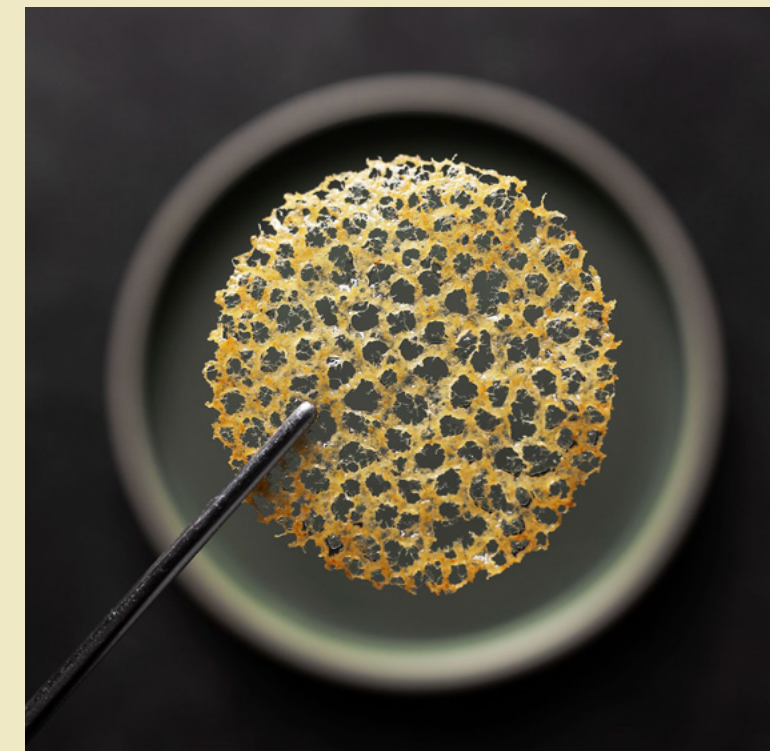
We have continued to successfully diversify our revenue streams this year – and we are confident in our ability to maintain this going forward. We have landed convinced that, at least for the time being, philanthropic funding will underpin our work. We see significant value in retaining our independence whilst maintaining a highly collaborative and consultative approach.

## Now or never

Looking ahead to 2024, we strongly feel it's our time to step up and take a more assertive approach. We have listened to where the sector would like us to play and balanced this with our own sense of what is needed. We have increased our burn rate to ensure we have a foundation of resources to drive more impact.

## Responding to change

Being "responsive" to the evolving needs of the sector is one of our values. This prompted a critical review of our 2023-24 strategy, which led to some unexpected and even unwanted changes. Where we felt changes would result in greater impact, we made them anyway.



**Above:** Tastilux animal-free fat by Nourish Ingredients



# Strategy and focus for the year ahead

Following on from our learnings, this section outlines what we have responded to, why, and how this is reflected in our focus for 2024.

### Talent development

We have decided to de-prioritise our proactive work in talent development. Although we recognise this as a critical area for the future success of the sector globally, our decision was driven by the following reasons:

- Despite developing and delivering outreach and education programs, we saw reduced interest from students, academics and companies to engage in this space.
- It has been difficult to attract funding to the talent space, and as a small resourced constrained organisation we need to focus where we can have the most impact.

### Policy and advocacy

In the past 6 months, we have seen opportunities to engage proactively in advocacy and policy development and been invited to do so. We have built strong capability in this space and are well-positioned to prioritise it going forward.

### Communications and awareness

In response to positive feedback and sector engagement around projects including Key Terms and our Seed Grants program, we intend to expand on this work, push into targeted awareness-raising and drive more research in consumer perception and acceptance.

### Regulation

With several companies preparing food safety applications for Australia in 2024, it is critical that we continue our work with the sector to develop a clear and accessible regulatory system in Australia.

### Sector building

We have made excellent progress in bringing together the cellular agriculture sector and fostering collaboration this year. In 2024, we will be continuing this work with a focus on growing the ecosystem across the value chain and positioning Australia as an attractive location to build and invest in cellular agriculture.

### Accountability

Whilst this area remains in its infancy, we will be engaging with the sector around a key piece of research we commissioned in late 2023 that looks at relevant impact areas and their effective measurement and communication.

*Below: Cultivated lamb tacos by Magic Valley*



## Our revised strategy for 2024

Here is an overview of our adapted strategy and focus for 2024. We are confident in it and excited by where it will lead both CAA and the cellular agriculture sector in Australia.

Pillars	Outcomes
 <b>Policy &amp; Advocacy</b>	The policy, regulatory frameworks and public funding mechanisms are in place allowing Australia’s cellular agriculture sector to realise its potential.
 <b>Regulation</b>	Cellular agriculture companies have access to an Australian regulatory framework that is attractive, clear, consistent and easily accessible, thus removing barriers to establishment and scale.
 <b>Sector Building</b>	Australia’s cellular agriculture ecosystem is made up of a diverse group of research, product and service providers required across the value chain, enabling the industry to scale sustainably.
 <b>Communication &amp; Awareness</b>	There is widespread familiarity and trust of cellular agriculture technologies, the industry and the products produced.
 <b>Accountability &amp; Impact</b>	Australia’s cellular agriculture industry is objectively measuring its performance across a number of social, environmental and economic indicators.



# Meet the team

## Staff



**Dr Sam Perkins**  
Chief Executive Officer



**Joanne Tunna**  
Chief Operating Officer



**Victoria Taylor**  
Head of Sector Building & Advocacy



**Lucie James**  
Education Program Coordinator



**Jessica Freitag**  
Marketing & Communications Coordinator



**Kate Secombe**  
Newsletter Coordinator & Content Developer

## Board of Directors



**Dr Bianca Le**  
Founder & Chair



**Chloe Dempsey**  
Director



**Declan Savage**  
Director



**Carin Basirun**  
Secretary

## Volunteers



**Lisa Musgrove**  
Science & Technology Lead



**Nelson Gardner-Challis**  
Operations Associate & Software Lead



**Elsa Schnyder**  
Education & Outreach



**Brodie Peace**  
Education & Outreach



**William Daniel Concepcion**  
Education & Outreach



**Mikka Van Opijnen**  
Education & Outreach



**Sonakshi Maddan**  
Education & Outreach



Volunteering for Cellular Agriculture Australia has been a fantastic and eye opening experience. Through working remotely and attending a conference with an exceptional team, I gained a deep understanding of the industry's intricacies and its promising future. My involvement in shaping the CellAg Challenge not only expanded my knowledge of event organization and teamwork but also provided valuable insights into communicating the cellular agriculture world to a wider audience. Witnessing the organization's progress and the team's dedication has been inspiring, I eagerly anticipate the exciting developments that lie ahead!"



**Elsa Schnyder**  
Education & Outreach Volunteer



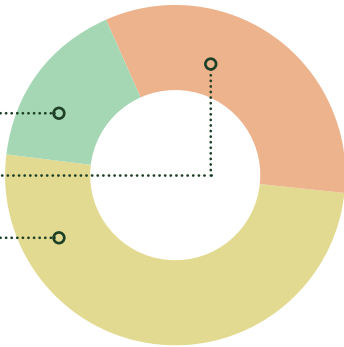
# Financial overview

We are not required to report on financials but choose to do so because transparency is important to us. Although we operate on a June–July financial year, we have selected to report on the 2023 calendar year as it best represents the activities outlined in this annual report. These are management accounts.

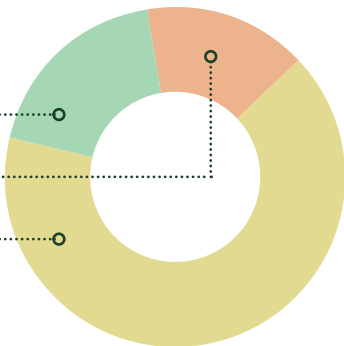
## Statement of activities for the year ended

January – December 2023

Revenue	\$ AUD
Individual donations	46,863
Earned income	93,832
Foundation grants	141,300
Total	281,995



Expenses	\$ AUD
Administration	52,864
Fundraising	43,254
Programs	183,753
Total	279,871



### Notes:

- Earned income refers to revenue-generating activities such as events, consulting and project management fees.

# Thank you

We extend our heartfelt appreciation to our community of supporters for continuing to back our work in 2023. Each of you has been instrumental in allowing us to work towards our vision of sustainable, accessible and ethical food for all.

There are several in-kind contributors we wish to acknowledge for their energy, services and expertise:

- Our talented team of volunteers in 2023:** Lisa Musgrove, Nelson Gardner-Challis, Elsa Schnyder, Brodie Peace, William Daniel Concepcion, Mikka Van Opijnen, and Sonakshi Maddan.
- Dr. Tarika Vijayaraghavan** for authoring our inaugural State of the Sector report.
- Achint Jain, Arun Ravindran, Chloe Dempsey, Harry Black, Joshua Lorsch, Morgan Dolfing, Rupert Coy and Suriya Shanmuga** for conducting a scoping study to inform impact measurement and reporting for the sector.
- Mouse & Mind** for their design expertise.
- DLA Piper** for their ongoing legal expertise.
- Diversify** for their expertise in developing our online Learning Management System.
- Future alternative** for their ongoing partnership and collaboration in hosting the CellAg Summit.
- Alternative Proteins Global** for providing data in support of our State of the Sector report.
- Hannah Clayton** for her marketing and communications expertise aiding our Key Terms project.

In particular, we would like to acknowledge our three inaugural corporate partners for supporting our work this year:



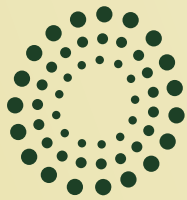
These three companies share a profound understanding that collective progress benefits all, and we extend our sincere gratitude for their ongoing support.

We wish to give special mention to our 2023 funders:



as well as those who wish to remain anonymous.





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## Get in touch

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