



THE UNIVERSITY OF
SYDNEY

Sydney
Knowledge Hub

Sydney
Knowledge Hub

Year in Review
2021

**We acknowledge the Gadigal, the
traditional owners of the land on which
the Sydney Knowledge Hub stands.
We pay our respects to Elders past and
present, and to those who have cared
and continue to care for Country.**

Sydney Knowledge Hub 2021 Year in Review



THE UNIVERSITY OF
SYDNEY
—
Sydney
Knowledge Hub

The Sydney Knowledge Hub aims to foster a closer understanding between the University and the outside world. We strive to create a welcoming ‘front door’ that serves as both an entrance for small to medium organisations and as an egress for research to leave campus and impact our lives.

In our second year in operation, we applied the lessons from our first year of 'test and learn' to develop our long-term strategic priorities.

These are to:

1. Operate a thriving and values-led coworking space
2. Improve the entrepreneurship journey for researchers
3. Facilitate interactions between researchers and startups / small and medium-sized enterprises

Despite a second tricky year where employees and employers everywhere are grappling with their relationship with the office, membership at our coworking space in the Merewether Building continues to be near capacity. 24 organisations – almost two-thirds of which are run by current researchers or affiliates of the University – use the space as their primary place of work. We seek to get members exposed to other parts of the University, such as the Core Research Facilities, relevant researchers, and students to demonstrate the vast array of collaboration opportunities on campus.

Over the year, we have learned that the higher degree researchers can be an agent of change for a culture of entrepreneurship at the University. Our member organisations that are led by higher degree researchers have flourished commercially. BioScout was awarded \$627,000 from the Physical Sciences Fund and ResusRight closed over \$2 million in investment

and grants, including from the BioMedTech Horizons grant. We doubled the number of HDR-led member organisations at the Sydney Knowledge Hub and we hope to inspire more HDR students to pursue entrepreneurial pathways.

We believe that driving a culture of commercialisation demands a partnership approach. From the end of 2020 through 2021, we worked with partners such as UTS, NSW Smart Sensing Network, NSW Circular, and the Association of Pacific Rim Universities for our programming. We hope that future partnerships with residents in NSW Precincts of Tech Central and the Westmead Health and Innovation Precincts will lead to even more cross-institution entrepreneurship communities, innovative work experiences for students, research collaboration, and programming.

In the upcoming year, we hope to improve the experiences that researchers have on their journey through commercialisation, from inspiration to scaling up, to make the pathway more visible, accessible, and understood.



Rupal Ismin
Director
Sydney Knowledge
Hub

The Team



Rupal Ismin
Director



Sasha Whittle
Community Manager



Andrew Duong
Space Manager

Governing Council

Prof Julie Cairney (chair)

Pro Vice-Chancellor
(Research – Enterprise
and Engagement)

Rupal Ismin

Director,
Sydney Knowledge Hub

Prof Duncan Ivison

Deputy Vice-Chancellor,
Research

Tania Rhodes-Taylor

Vice-Principal,
External Relations

Linda O'Malley

Director,
Alumni and Supporter Relations

Dr Kathryn Sunn

Head of Commercialisation

Bill Simpson-Young

CEO, Gradient Institute



About Us

The Sydney Knowledge Hub helps researchers at the University of Sydney reach the people their research can ultimately benefit. We do this by supporting environments for researchers and industry to interact, both informally and formally.

Our coworking space located in the Merewether Building is the most visible example of this. 24 organisations use the Sydney Knowledge Hub as their primary place of work. Our members include industry partners that want to be physically closer to the researchers they work with, as well as staff and students in the early stages of their IP-heavy startups.

The Sydney Knowledge Hub does very little alone. We work closely with faculty and departments across the University to run events, programs, and other initiatives supporting researchers on their journey to make the most impact possible from their work.

Top Level Highlights

By the numbers*

24
Member
organisations

117
Members

5
Ave size of team
in space

1.3
Ave team growth
since becoming a
member

\$4.1
million
Total University
research income
from member
collaborations
in 2021

50%
Member
organisations have
provided a work
learning experience
for students

31
Total student work
experiences filled

\$7.2
million
Funding raised by
member startups

Highlights from the year

Inspiring higher degree researcher entrepreneurs:

Produced or sponsored eight events targeting HDR students and saw a jump in HDR-led member organisations double from our prior year.

Deep Dives:

Produced 12 events in sectors with tremendous opportunities for research commercialisation including smart sensing, quantum, and digital health. These events were produced with partners such as UTS, NSW Smart Sensing Network, and the City of Sydney, targeting SMEs and startups, students, and researchers.

Motivating research entrepreneurs to apply for funding:

Spotlighted, educated, and provided feedback for commercialisation funding opportunities.

Funding supported by the Sydney Knowledge Hub includes Prof Youngui Li, recipient of the Physical Sciences Fund for commercial long-range Wi-Fi system in mining applications, and Prof Patrick Brennan's DetectedED-X, recipient of \$250,000 from NSW Investment's COVID-19 R&D Challenge for their technology for COVID-19 detection in the lungs.



Saron Berhane and Lewis Collins, BioScout post interviewed with the Physical Sciences Fund panel

* Member survey conducted in September 2021; metrics are through to 31 October 2021; snapshots in time are from 31 October 2021

**Excludes University of Sydney funding contributions to the Digital Health CRC



DetectED-X accepting first place and \$250,000 from the NSW COVID-19 Innovation District Challenge

Selected Member Wins

Commercialisation Awards and Funding

- DetectED-X received \$250,000 from the NSW Investment COVID-19 Innovation District Challenge
- BioScout was awarded \$627,000 from the Physical Sciences Fund
- VirtuPharma received a \$200,000 grant from the EU for Research and Innovation
- PlasmaLeap secured almost \$900,000 from project BIOSUPPACK out of the EU
- Archer Materials, the only ASX-listed company with exposure to quantum computing, raised \$15 million to develop its 12CQ qubit quantum chip
- ResusRight closed \$1.2 million in investments and grants, which included Cerebral Palsy Alliance's first investment made in a startup
- The NSW MVP grant has been awarded to nearly three out of four of our startups; this year, that included LuciGem, Andi Health, ResusRight and Opacity Quantum

Firsts

- BCAL Diagnostics were IPO'd on the ASX
- Neurgeon closed a pre-seed round from the Sydney Knowledge Hub via participation in the INCUBATE program
- Gradient Institute co-developed a methodology for the assessment of the fairness of AI systems for the Monetary Authority of Singapore

“It’s been wonderful this year to see the external Sydney Knowledge Hub members forming new relationships with our research community and our own start-ups thriving.”



Prof Julie Cairney

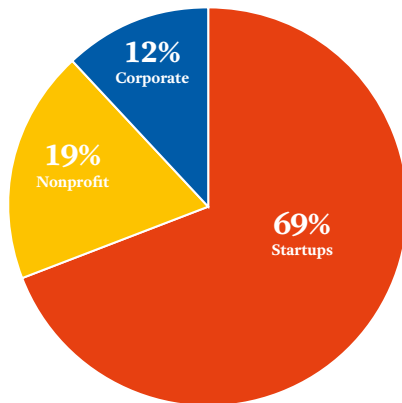
Pro Vice-Chancellor
(Research- Enterprise & Engagement)

Operate a thriving and values-driven coworking space

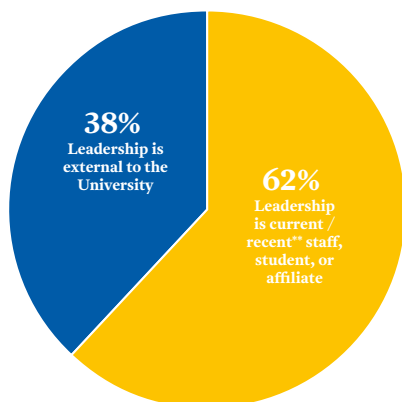
24 member organisations currently use the Sydney Knowledge Hub as their primary place of work. Below are the member organisations that have been with us in 2021:



Member Organisations by Type



Leadership's Relationship with the University of Sydney



Our Value to Members

Space

Helping members access the space and facilities they need for their business, including our coworking space, Core Research Facilities, and maker spaces across the University

Community and Events

Producing events, workshops, and discussions for members and the broader research community

Wayfinding Within and Outside of the University

Connecting members to people at the University and expanding researchers' networks outside of the University

“The Sydney Knowledge Hub provides us with an outstanding environment for collaboration and work with the University and its Faculties and is the best space for startups to grow.”



Mariam Martin-Mnatsakanyan
CEO, VirtuPharma

* Snapshot as of October 2021.

** "Recent" refers to within five years

The Sydney Knowledge Hub aims to foster a closer understanding between the University and the outside world. We strive to create a welcoming 'front door' that serves as both an entrance for small to medium organisations and as an egress for research to leave campus and impact our lives.

Member-University Research Collaborations

- Andi Health completed a co-design study on wearable health tracking with 60 participants with the Charles Perkins Centre
- VirtuPharma signed an agreement with the University of Sydney for a pilot trial of virtual reality labs
- PlasmaLeap's technology supported a new discovery from researchers at UNSW and the University of Sydney to produce "green" ammonia
- DetectED-X and the University of Sydney were awarded \$1.5 million MRFF grant for research on silicosis
- Bush Heritage continues their work with the Desert Ecology Research Group

Members Accessing Core Research Facilities

- Archer validated their 12CQ qubit processor chip for room temperature operation and ease of integration onboard modern electronic devices at the Research and Prototype Foundry.
- BCAL Diagnostics has been working on breast cancer diagnostics through plasma lipid at Sydney Mass Spectrometry

**Members working with our researchers
and facilities have generated over**

\$4.1 million

**in research income for the
University of Sydney**

Tomonori Hu, Research Theme Leader at NSW Smart Sensing Network, speaks at Developing Your Business with the University of Sydney at the Sydney Startup Hub in May 2021



Project: Research Entrepreneur Experience (REX)

Support for research entrepreneurs – those seeking to bring their research to the market through a licence or a new venture – is increasing, both internally within the University and externally, through more funding, training programs, and sector-specific advisors. Those support services are difficult to find and access for most researchers.

We began a design-led project to improve the research entrepreneur experience. In collaboration with leadership, researchers, and support staff across the University, we came to understand the challenges faced by researchers trying to commercialise their work and develop solutions for solving these challenges.

The project continues into 2022 when we will put forth recommendations to the project's Steering Group and start the process of implementation.

Project REX by the numbers

20
members of the
Working Group

29
in-depth interviews
conducted

6
workshops facilitated

8
co-design
sessions held

Startups led by current or very recent higher degree students



New ventures emerging from university research come from our higher degree researchers. This year, the Sydney Knowledge Hub has made a concerted effort to reach this group with tactics such as:

- **Celebrating successes:** Drove events such as the Fire Side Chat with BioScout, and startup media exposure, including ResusRight's feature article in *The Australian*
- **Exposure:** Held startup panels on topics such as smart sensing and digital health, mentored innovation programs held by the School of Physics and the Student Union Society of Medical Innovation
- **Education:** Produced discussions on research commercialisation with the commercialisation team and partners such as SUPRA and AndHealth.

INCUBATE Demo Day: Brown Xu, Founder of Neurgeon

The Sydney Knowledge Hub sponsored INCUBATE's seed funding for Neurgeon, the stroke rehabilitation device from PhD candidate Brown Xu, who is also employed by Prof Jim Rabeau's startup LuciGem

Programming and Events

We co-produced 14 events for our broader community and members, and supported dozens more. Our programming focuses on helping build networks, accessing support and inspiring the next generation of research entrepreneurs.

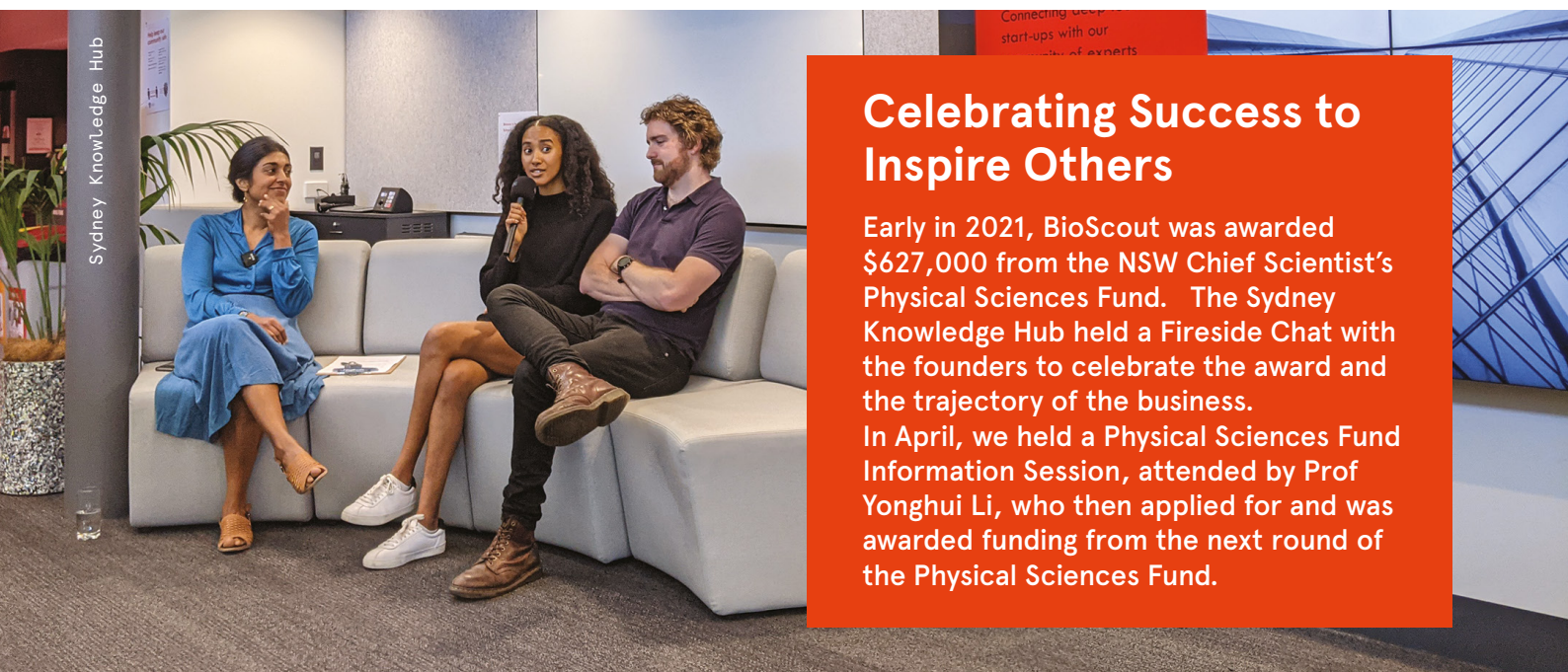
Deep Dives

Sector-specific events on topics such as industry research collaboration, startups spotlights, and jobs in content areas including:

- Digital Health
- Smart Sensing
- Quantum

Hands-on Entrepreneurship Experiential Learning

- Co-Producer of the 30 Minute Quantum Startup, along with INCUBATE and City of Sydney
- Sponsorship of events and programs such as the Summer Law Innovation Program, SUSMI Medivate Hackathon, and INCUBATE
- Produced research commercialisation workshops with partners such as the commercialisation office, Scimita Ventures, Exit Founders, and AndHealth



Celebrating Success to Inspire Others

Early in 2021, BioScout was awarded \$627,000 from the NSW Chief Scientist's Physical Sciences Fund. The Sydney Knowledge Hub held a Fireside Chat with the founders to celebrate the award and the trajectory of the business. In April, we held a Physical Sciences Fund Information Session, attended by Prof Yonghui Li, who then applied for and was awarded funding from the next round of the Physical Sciences Fund.

“We received great support from Sydney Knowledge Hub during our Physical Science Fund application and interview preparation process. As our University’s first awarded PSF grant, our application would not have succeeded without Sydney Knowledge Hub’s continuous and strong support.”



Prof Yonghui Li
School of Electrical
and Information Engineering



Coming Soon: The Hardware Lab

In 2020, a generous bequeath from Pamela Winifrid Green funded the build of our upcoming Hardware Lab. The Lab will allow members and University researchers to prototype, build, and assemble hardware in a space where they can experiment and learn from each other.

2021 Year in Review

Work Integrated Learning Experiences

The Sydney Knowledge Hub continues to support entrepreneurial students through programs and connecting students to more innovative companies. This year, this included:

- Industry Project Event led by the School of Physics: Members PlasmaLeap, BioScout and Streamplate were industry partners who provided real-life problem statements for transdisciplinary teams of PhD students.
- Sydney Quantum Academy: Awarded an incredible 149 scholarships, which offer students funding to work alongside some of the world's leading quantum researchers and gain industry-ready skills.
- Gradient Institute: This year welcomed three summer scholars under the supervision of an experienced team of AI researchers and practitioners.
- Student Union Society of Medical Innovation Medicate Hackathon: members provided mentorship to participants, and the Sydney Knowledge Hub sponsored this weekend hackathon.
- **Looking forward:** Our goal is to capture and facilitate more opportunities for work experiences for University of Sydney students with startups in the Westmead Health and Innovation District and Tech Central Innovation Precincts.

Sydney Knowledge Hub

The physical hub is the heart of the Sydney Knowledge Hub. This is where the energy from one entrepreneur can become infectious and serendipitous encounters occur

“As kindred organisations, the NSSN are delighted to partner with the Sydney Knowledge Hub in ensuring the world-class research that takes place in universities translates to real impact and better economic, societal, and environmental outcomes. Collaboration is at the core of SKH, and it shows.”



Nick Haskins
COO, NSW Smart
Sensing Network

Page 17

Member Snapshot

ResusRight



Biomedical startup ResusRight aims to improve outcomes for the approximately ten million babies that experience breathing difficulties each year.

ResusRight was founded by two doctoral biomedical engineering students, Matt Boustred and Matthew Crott, along with Dr Mark Tracy and Dr Murray Hinder, a research team based at Westmead Hospital that specialises in improving care of vulnerable babies. Together, the team has a mission to lower neonatal mortality rates and prevent babies from developing disabilities due to complications at birth.

The start-up received funding from the Cerebral Palsy Alliance in the organisation's first investment in a company, as well as Startmate Accelerator and angel investors for the development of "Juno", a clinical training system for newborn resuscitation.

ResusRight Co-Founder and CEO Matt Boustred said: *"It was very empowering to find a group of investors who strongly support our team and mission. This funding will allow us to roll out the Juno, followed by the manufacture of a resuscitation device prototype in the second half of this year."*

"Experts estimate that at least 30% of the approximately one million babies dying annually from asphyxia could be prevented with better resuscitation."

"A lack of access to life-saving training and equipment contributes to a large proportion of these deaths. ResusRight aims to advance the gold standard of newborn resuscitation through equipment that is accessible in design and at a price point that is affordable to a global market. We want our monitoring systems to be as useful for a consultant in Westmead Hospital as for a midwife out in Bourke or a birth attendant in India."

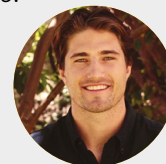
"Our mission is to improve outcomes at birth to ensure no baby dies or is left with a preventable disability when their life has just begun."

Co-Founder and Chief Technology Officer, Matt Crott said: *"We want to give clinicians the tools to be trained and resuscitate babies more effectively. A key issue in current practices is that the resuscitator has no measure of how much air they are giving to the baby, or whether their mask technique is correct. This means they can easily over-deliver or under-deliver air to the baby, both of which have potential to lead to lung or brain injury."*

"With our Juno training system, we aim to provide both better quality and a higher frequency of resuscitation training – something that was recognised as a priority area in the most recent Australian Resuscitation Council guidelines."

The ResusRight team hopes to provide better accessibility to neonatal training through affordable pricing and are introducing the Juno into educational programs at Westmead Hospital, Monash Health and Royal Women's Hospital.

"We've had a fantastic experience at the Sydney Knowledge Hub. There's a great community with other startups in the Hub which we've benefitted from getting to know and share advice with. The Hub team goes above and beyond in actively listening to us and the community to continuously improve the experience and make it a phenomenal co-working space. We're really looking forward to utilising the new manufacturing facilities they're developing to assist with next-gen prototyping," said Matt Boustred.



ResusRight receives further funding

Announced in September, ResusRight received an additional \$800,000 from BioMedTech Horizons Program operated by MTPConnect, a growth centre for medical technologies. This brings total funding to \$1.2 million.

The team plans to use this funding to move to their first human clinical trial in 2022.