

APAIE 2024



PERTH, AUSTRALIA 4-8 MARCH 2024

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Collaborating for sustainable impact: partnerships across the Asia Pacific

APAIE Perth 4 - 8 March 2024



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Session 4C: Tues 5th March, 15:00 – 15:45

Exploring Indonesia's global research partnerships in 2024 and beyond

Ratu Sovi Arinta
Victorian Government Trade and Investment Office, Indonesia

Tirta Mursitama
BINUS University, Indonesia

Chair
Kirrilee Hughes
Bestari Consulting, Australia/Singapore

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Partnering With Indonesia in Research

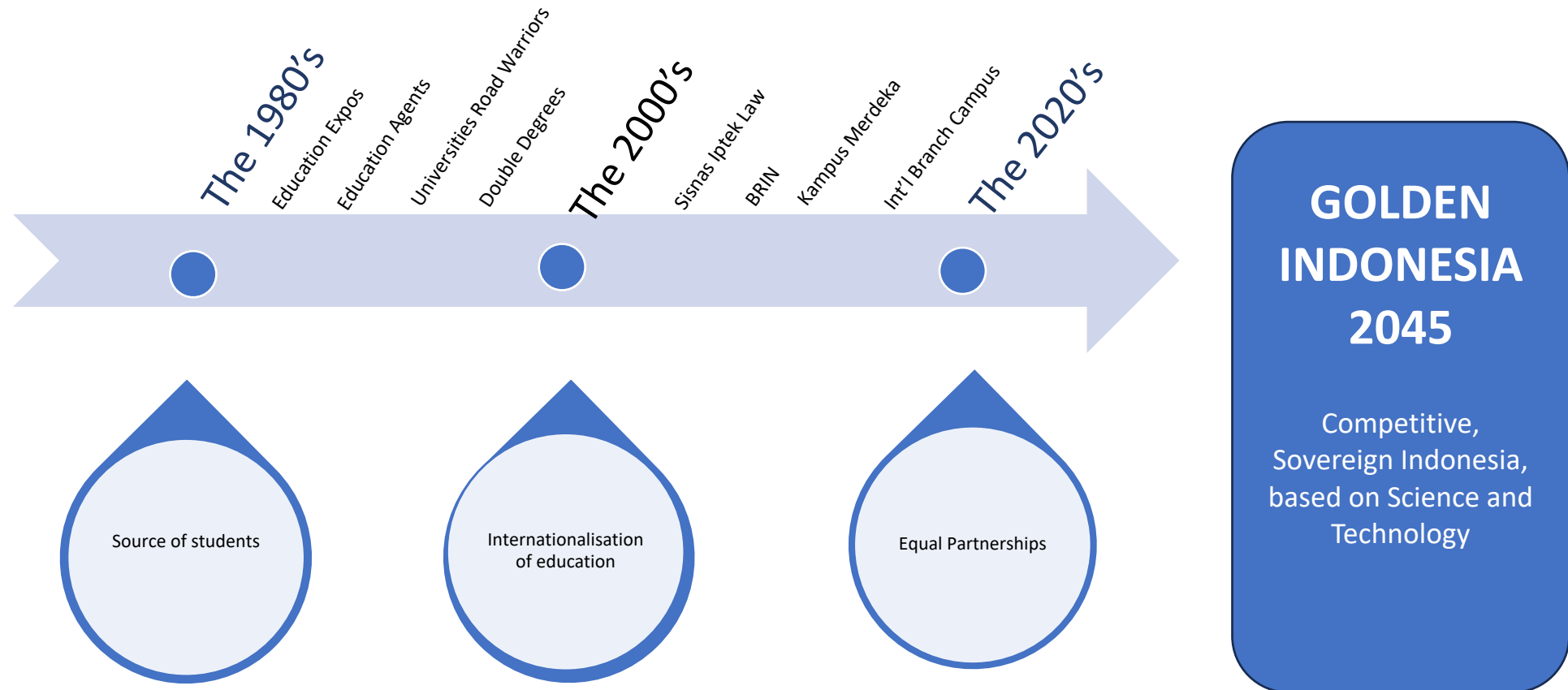
Indonesia's Transformative Education Landscape

Navigating Global Partnerships and Innovation

- The Golden Indonesia 2045 Vision
- Indonesian education sector's transformation over the past two decades
- The Government initiatives towards the Golden Indonesia 2045 vision
- The role of technology and innovation
- Opportunities and Challenges

Regulatory Changes and Opportunities

Opening Doors: Regulatory Changes and Educational Opportunities



Human Capital Development and Collaboration

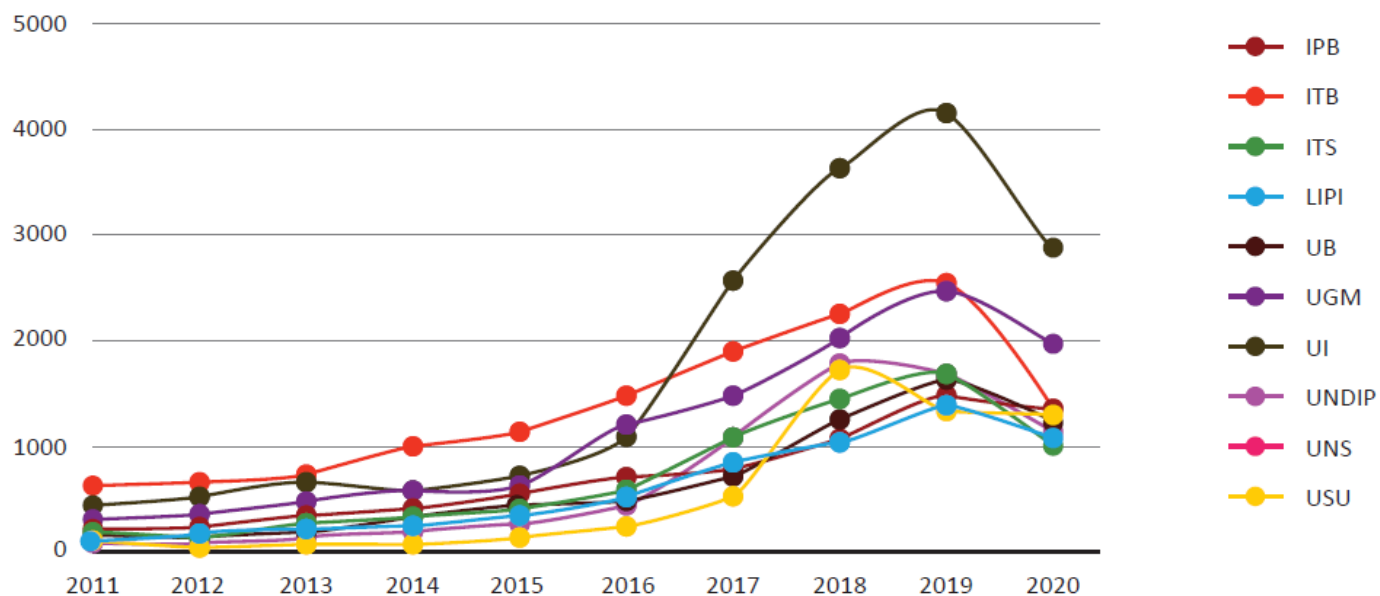
Investing in Human Capital: Scholarships and Beyond

INDICATORS OF ACHIEVEMENT OF GOALS	2015 (BASELINE)	2020	2025	2030	2035	2040	2045
Number of science and technology researchers per 1 million population	1,071	1,600	3,200	4,800	6,400	8,000	8,600
Gross National Expenditure on Research and Development (GERD)/PDB (%)	0.20	0.84	1.68	2.52	3.36	4.20	5.04
Ratio of Master (S2) & Doctoral (S3) students to number of undergraduate (S1) students to approximate total 'research candidates for science and technology (%)'	5.6	20	40	60	80	90	100
Number of total publications in globally indexed journals	2	4	8	10	14	18	22
Multi-factor productivity (MFP) (%)	16.7	20.0	30.0	40.0	50.0	60.0	70.0

Source: KSI report 'MAKING INDONESIA'S RESEARCH AND DEVELOPMENT BETTER Stakeholder Ideas and International Best Practices'

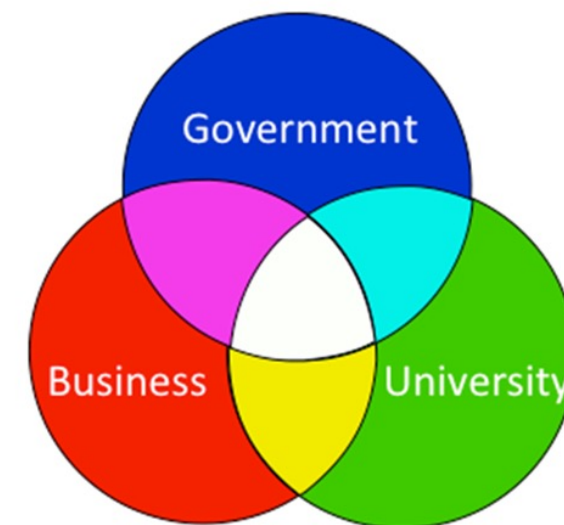
OFFICIAL Research and Innovation Ecosystem Towards Advanced Indonesia 2045: Building Research Capacities

TOP 10 INDONESIAN RESEARCH INSTITUTIONS BY SCOPUS PUBLICATION AFFILIATIONS



Source: KSI report 'MAKING INDONESIA'S RESEARCH AND DEVELOPMENT BETTER Stakeholder Ideas and International Best Practices'

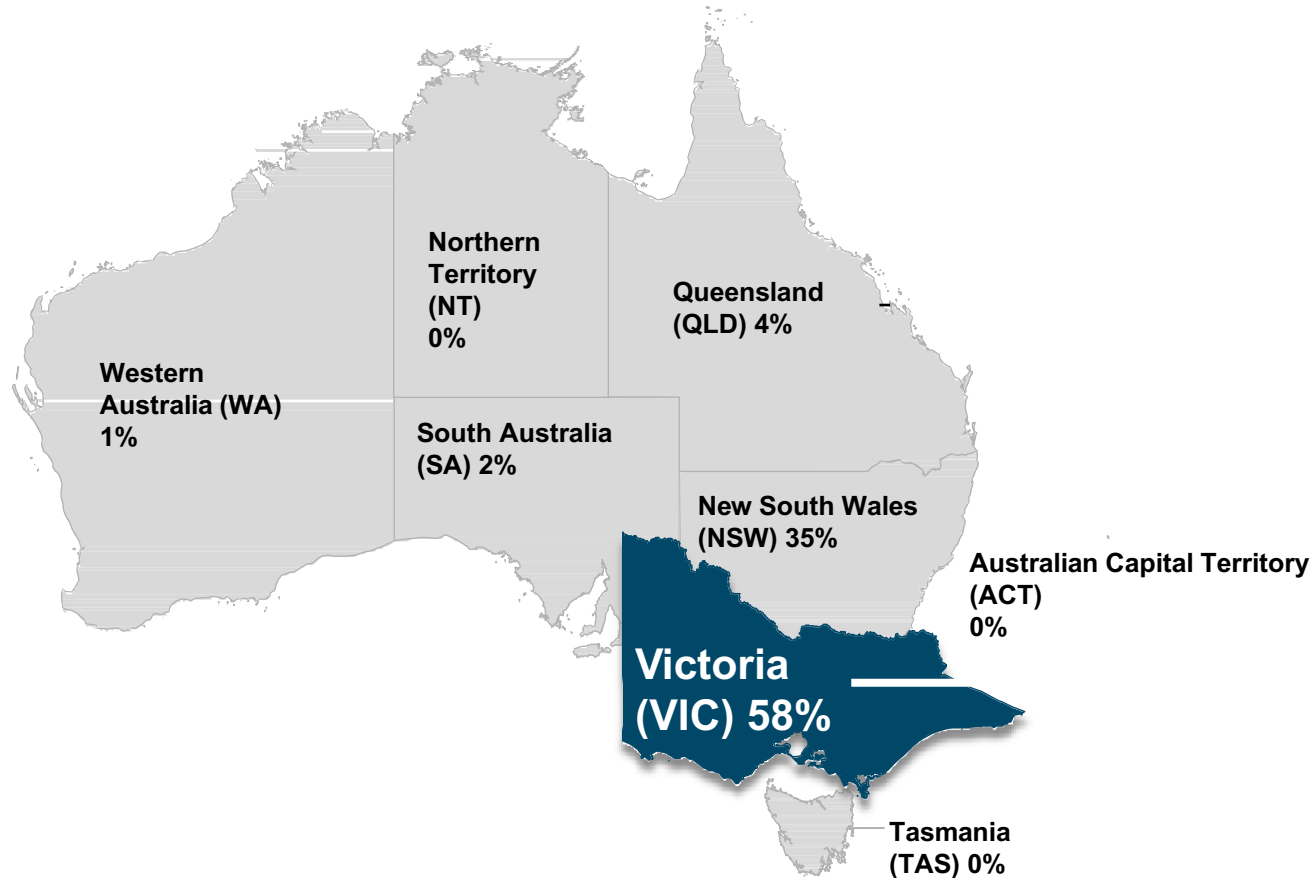
The Triple Helix Model



Victoria accounts for the majority of Australia's pharmaceutical exports

Pharmaceutical product exports dominate Victoria's export story

Pharmaceutical exports in Australia by state, 2019; Percent



Largest

pharmaceutical exporter in Australia

\$3B

worth of pharmaceutical product exported from Victoria in 2019, making it Victoria's highest-value manufactured export

255%

growth in Victoria's pharmaceutical exports in the four years to 2019

Victoria is prioritising mRNA technology and committed to partnering with the sector

We are extending our national leadership in biomedical research by investing and developing local mRNA research and manufacturing capabilities



\$140b

investment in the Victorian health system over the last 10 years



\$15b

investment in research in Victoria over the last 10 years



\$2b

innovation investment in the Breakthrough Victoria Fund focusing on biomed and advanced manufacturing



mRNA Victoria is responsible for the Victorian Government's commitment to establish a world-class Victorian mRNA and RNA industry by supporting supply chain and R&D for pre and clinical research, commercialisation and manufacturing investments

Victoria's recent major investments in its biomedical ecosystem will drive even greater growth over the next 5–10 years



Breakthrough Victoria Fund

\$2B research and innovation fund established to invest in various industries including health and life sciences and advanced manufacturing



mRNA Victoria

Dedicated mRNA agency established to lead Australia's mRNA research, development and manufacturing capability



Victorian Heart Hospital

This \$564M facility, due to be completed by 2022, will expand Victoria's **biomedical infrastructure and hospital network** and **boost the state's talent pipeline** by providing training for medical and science students and health professionals via a Monash Health and Monash University partnership



Aikenhead Centre for Medical Discovery (ACMD)

This \$206M capital project, due to complete in 2024, is **Australia's first collaborative, hospital-based biomedical engineering research centre**

The ACMD will bring together leading universities, research institutes, a tertiary hospital and health service providers to innovate in chronic condition areas such as cardiovascular disease, arthritis, cancer and diabetes by leveraging experts in mechanical, electronic, robotic, material, digital and data engineering

Its initial facility, BioFab3D, will be Australia's first robotics and biomedical engineering centre embedded within a hospital

2020

2021

2022

2023

2024

2025

2026

Vax4COVID Alliance

The Victorian Government provided start-up funding to establish an alliance of Australian vaccine clinical trial centres with the goal of **accelerating COVID-19 clinical trials** in Australia

The alliance leverages an extensive network of clinical trial centres to **enable rapid planning, recruitment, ethics and GMO approvals, and execution of SARS-CoV-2 vaccine trials**



Next generation RNA based vaccines

The Victorian Government and Medical Research Future Fund jointly funded **R&D of mRNA candidates from 2 leading Victorian research institutes** (Doherty Institute and Monash Institute of Pharmaceutical Sciences)

This project is Australia's 1st mRNA vaccine to be funded for clinical trials and manufacturing and heavily leverages Victorian pharmaceutical manufacturing expertise



Australian Institute for Infectious Disease (AIID)

The AIID is a \$650M investment to build out **Australia's new Centre for Disease Control (CDC)** in Melbourne and will be the **largest centre of infectious disease expertise in the Southern Hemisphere**

It will be located in Parkville and include next generation custom-built laboratories and high-containment facilities alongside early-stage clinical trials facilities, including a Human Infection Challenge clinical trial unit



Victoria's biotech ecosystem is Australia's largest, supported by a government planning and investing for major future growth

Victoria currently has Australia's leading biomedical ecosystem...

...and recent major investments across Victoria will drive even greater growth in years to come

Investment	\$15B+ total government biopharma investment over the last 10 years				\$2B research and innovation fund established to drive innovation breakthroughs and biotech research
Med tech and pharma companies	70%+ of the top 25 med tech and pharma companies in Australia are headquartered in Victoria				\$800M vaccine manufacturing facility building commenced by CSL Seqirus in Melbourne
Medical research institutes	22 globally-recognised medical research institutes	44% of successful grant applications of contestable public funding in Australia ¹			Australia's new Centre for Disease Control (CDC) to be built in Melbourne, with \$650M investment in the new Australian Institute for Infectious Disease
Clinical trials	20 clinical trial site providers with...	300+ sites, including Australia's largest provider	4,805 total completed clinical trials	1,525 total active clinical trials	Human infection challenge clinical trial unit opening in 2021 led by Professor James McCarthy, which plans to establish a non-pathogenic coronavirus model Recent investments will contribute to build out clinical capabilities at the Australian Institute for Infectious Disease, Victorian Heart Hospital, and Victorian Melanoma and Clinical Trials Centre
Life science professionals	90k+ in total (more than any other state)				\$14B invested in health infrastructure in Victoria – helping to further attract Australia's leading pharmaceutical and biotech workforce
RNA community	200% more RNA researchers than other states				Dedicated mRNA agency – mRNA Victoria – established to lead Australia's mRNA research, development and manufacturing capability. Victoria to be Australia's hub for RNA research, vaccines and therapeutics Next generation RNA research being undertaken at a ~dozen research institutes throughout Victoria






















1. Grants from the National Health and Medical Research Council are the largest individual source of competitive grant funding, making up 52-89% of competitive grant funds awarded over the 2013-2020 period (54% in 2020)

Source: Vic Gov's Medical Technologies and Pharmaceuticals Sector Strategy report, Victoria's RNA capabilities and proposition report, VGTI biomedical investment opportunities, DJPR Vic Gov website, Pubmed.gov - Search query: "(("mRNA"[Title] OR "rna"[Title]) AND (2011:2021[pdat] AND Australia[Affiliation]))"

Victoria has adapted the full spectrum triple helix of innovation backed by the academia, industries and government

Victoria has deep expertise in a variety of research support functions...

NOT EXHAUSTIVE

Epidemiology	Bioinformatics	Analytical chemistry
        	       	   

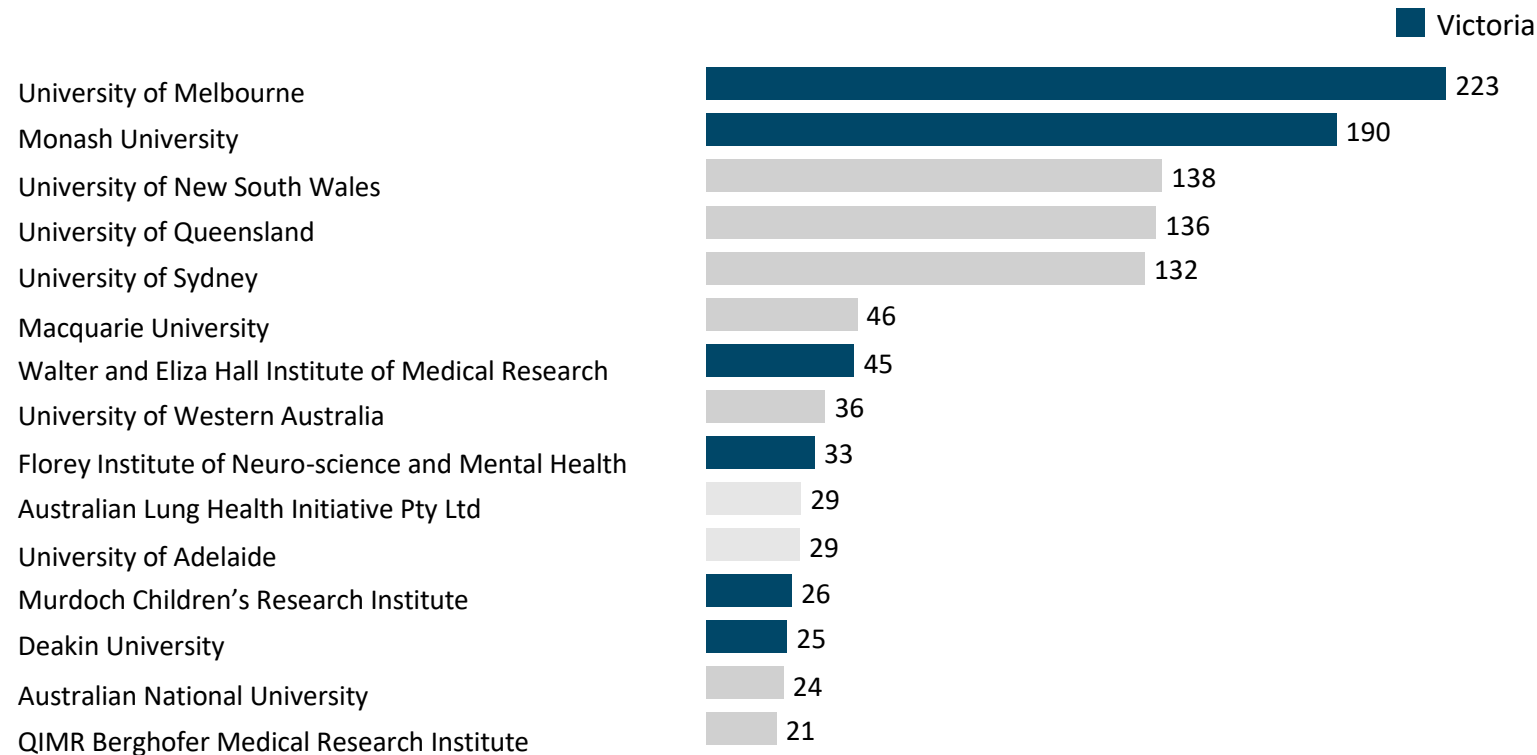
...and has a network to support commercialisation and manufacturing needs

IP law	Regulatory consulting	Equipment providers
       	  	         

Victorian funded biomedical research institutions lead Australia and win >40% of contestable grants

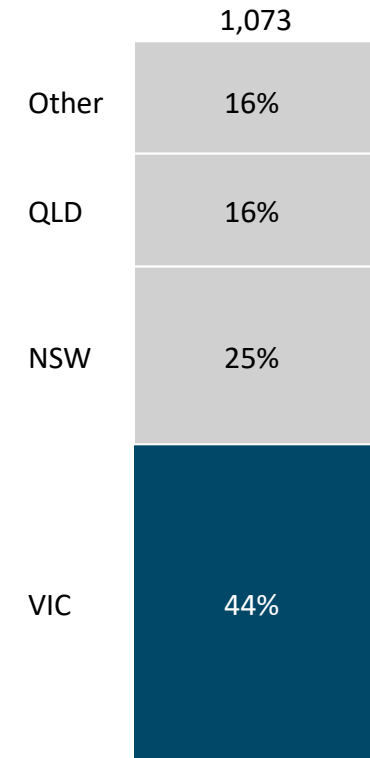
When ranked by contestable public funding, 6 of the top 15 institutions are from Victoria, with 3 from NSW and 2 from QLD

Top 15 institutions receiving contestable public funding^{1,2}
2020 \$AUD m



Victoria accounted for >40% of successful grant applications

Number of contestable publicly funded grants awarded^{1,2}, %



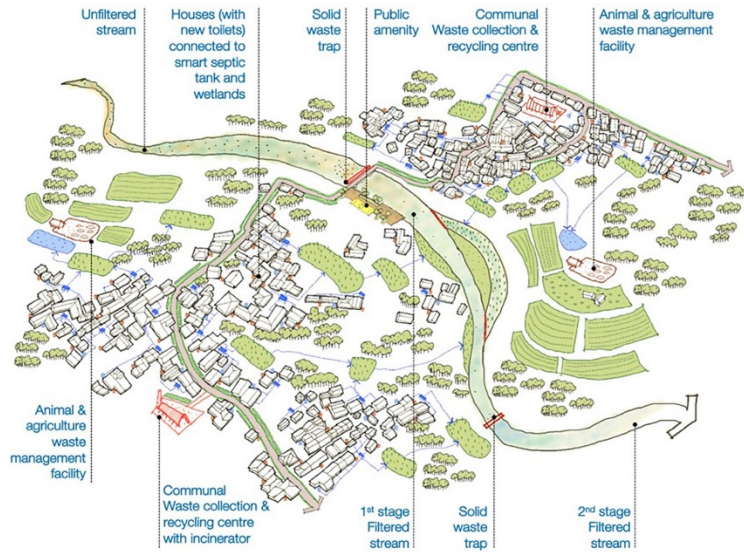
1. ARC funding in the Biological Sciences, Medical and Health Sciences, and Biotechnology fields of research

2. ARC, NHMRC, and MRFF are the three main Australian competitive research funds, comprising 46% of higher education R&D spending in 2018-19

Source: [NHMRC grants data](#), [ARC grants data](#), [MRFF grants data](#), [DISER Science, Research and Innovation budget tables](#)

OFFICIAL Research Partnerships Opportunity: Victoria's Role Some Real Examples

The Citarum Living Lab Project



The Wolbachia Technology
The UOM-LPDP PRIME Programs

77%
reduction
in dengue incidence



Consortium between Indonesia Research Alliance (min. 3 PTNBH led by UI) and University of Melbourne (and beyond)



PRIME Health



PRIME Science



PRIME Engineering



PRIME Social

PRIME Batch 1 (PRIME Health & Social); 2022-2025 (Duration: 4 years)
Total funding: 44 Billion Rupiah + AUD800K (in-kind contribution from UniMelb)

The first cohort of PRIME program will be emphasized on the effort to combat the recent global COVID-19 pandemic.



Primary care cluster



Health services cluster



Pediatric & adolescence cluster



Infectious disease cluster



PRIME Social

PRIME is funded by LPDP and Universitas Indonesia was selected as the leading institution for the consortium



2023

Call for PRIME Batch 2 (PRIME Eng.)

2024

Call for PRIME Batch 3 (PRIME Sci.)

2025

Call for PRIME Batch 4 (PRIME Soc.)

... And so forth



Jobs, Skills, Industry and Regions

Sovi Arinta

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Sustainable Partnerships: Intra - International Collaboration in the Asia Pacific

Tuesday, March 5th, 2024
Perth, Western Australia

Prof. Dr. Tirta Nugraha Mursitama, Ph.D.

*Liaison Officer NUNI | Vice Rector for Collaboration &
Global Engagement at BINUS University, Indonesia*



NUNI
NATIONWIDE UNIVERSITY
NETWORK IN INDONESIA



Nationwide University Network in Indonesia (NUNI) a consortium of prominent 21 Indonesian universities that collaboratively strive for a strategic goal in enhancing the quality of Indonesian higher education via its four collaborative pillars (Student Mobility, Faculty & Staff Mobility, Research & Innovation, Global Reputation)

NUNI Universities in a Glance

1. Universitas Andalas
2. Universitas Atma Jaya Yogyakarta
3. BINUS University
4. Universitas Brawijaya
5. Diponegoro University
6. Hasanuddin University
7. Universitas Islam Indonesia
8. Sultan Agung Islamic University
9. Atma Jaya Catholic University of Indonesia
10. Parahyangan Catholic University
11. Soegijapranata Catholic University
12. Maranatha Christian University
13. Petra Christian University
14. Satya Wacana Christian University
15. University of Muhammadiyah Malang
16. Universitas Padjadjaran
17. Sanata Dharma University
18. Universitas Sebelas Maret
19. Universitas Sumatera Utara
20. University of Surabaya
21. Udayana University



Mobility (Staff & Students)

356 participants
150+ study programs
900+ available courses



Research & Innovation

99 joint research
88 publication collaboration
44 workshop & conferences



Global Reputation

2 joint participation at event:
APAIE 2023 (Bangkok)
APAIE 2024 (Perth)

Joint Research of NUNI

Benefits

- 
- To have a wide network of 21 universities in Indonesia related to research.
 - To be connected to multi-discipline research among NUNI members.

Challenges



Information about international research in order to facilitate multi-university research with international higher education institutions (international HEIs).

Opportunity



To enrich multicultural collaboration between Indonesia and international HEIs.

Sulawesi



Geographical Coverage

- 9 Provinces
- 4 Islands
- 12 Cities

Members Composition

- 13 private universities
- 8 public universities

Sumatera



Java



Bali



Members' on QS WUR/AUR 2024

- Padjadjaran University Top 661-670 (160)
- Diponegoro University Top 791-800 (177)
- Brawijaya University Top 801-850 (208)



Case Study

BINUS Research Partnership

- Currently there are **250+ ongoing international** research collaboration with total annual research grant amounting up to USD 1.5 Mio/IDR 24 Bio (2023)
- Research outputs: Reports, Policy Briefs, Datasets, journal articles and book chapters, apps, prototype.
- Research capacity building, international student joint projects, thesis supervision, conference.



Prof. Dr. Tirta Nugraha Mursitama, Ph.D

Project Horizon 2020

European Commission

“Global Governance and the European Union: Future Trends and Scenarios (GLOBE)”

[Area: Social Science, International Relations]

Partners: IBEI (Spain), KU Leuven (Belgium), UCL (UK), etc.



Prof. Fergyanto E. Gunawan, Dr. Eng.

East Asia Science and Innovation Area Joint Research Program (e-ASIA JRP)

Japan Science and Technology Agency (JST)

“Data-Driven Design of Mechanical Properties in Metallic Layered Structures”

[Area: advanced material, computational modelling]

Partners: A*Star (Singapore), Tokyo University (Japan)

Case Study

BINUS Research Partnership

- Enhance institutional engagement for sustainable impact.
- Strengthen International Research Network.
- Faculty & Student Mobility.
- International Internship Program.



Nunung Nurul Qomariyah, S.Kom., M.T.I., Ph.D.
Newton Fund Institutional Links Grant
British Council

“AI-based Telemedicine for COVID-19 Patients”
[Area: Computer Science, IoT, Health]
Partner: University of York (UK)



Prof. Dr. Ir. Ford Lumban Gaol, S.Si., M.Kom.
Core Research for Evolutionary Science and Technology, Strategic Basic Research Program
Japan Science and Technology Agency (JST)

“Hyper Democracy: Development of Conscious Formation Platform of Social Multi-Agent System (HDMAS)”
[Area: Machine Learning, Agent-Based Modelling]
Partner: Advanced Institute of Industrial Technology, (Japan)

Lesson Learned

- 1.** Personal connection is key to starting collaboration.

- 2.** Academic consortium as crucial vehicle to complement member's research expertise.

- 3.** NUNI is an alternative platform for members to conduct academic exchanges and collaborate.

- 4.** Negotiating funds through contributions based on expertise and work package (WP) and providing in-kind contributions and seed money

- 5.** Utilizing various funding schemes (LPDP, Koneksi, Kedaireka)

Thank You

NUNI Contacts

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