AUSTRALIA INDIA INSTITUTE

SHARED PATHWAYS TO RESEARCH FUTURES

AUSTRALIA–INDIA RESEARCH COLLABORATION FRAMEWORK 2026-2030

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December 2025

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ACKNOWLEDGEMENT OF COUNTRY

Australia India Institute acknowledges the Traditional Owners of Country throughout Australia and recognises the continuing connection to lands, waters and communities. We pay our respect to Aboriginal and Torres Strait Islander cultures, and to Elders past, present and emerging.

FUNDING ACKNOWLEDGEMENT

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Australian Government
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FOREWORD

Australia and India are advancing a research partnership of growing strategic importance. Over the past two decades, the relationship has deepened significantly, reflected in more than 500 higher-education institutional agreements and growing joint research across fields such as medicine, engineering, and computer science.

The Australia-India Research Collaboration Framework builds on this momentum, providing a timely and practical roadmap for deepening bilateral research engagement over the next five years. It sets out clear objectives, guiding principles, recommendations, and priority action areas designed to support all stakeholders involved in bilateral research collaboration. Ultimately, it lays the groundwork for a more connected, purposeful and enduring Australia-India research partnership.

Importantly, the Framework foregrounds the next generation of talent, recognising early-career researchers and doctoral candidates as central to the future of the Australia–India research corridor. It also highlights the pivotal role of industry engagement, mobility pathways and joint funding arrangements in fostering research translation and real-world impact.

The thematic cases included in this Framework demonstrate the breadth of potential across four areas of shared strategic importance, while the suite of resources offers targeted guidance for researchers, higher education institutions and industry partners.

The Australia India Institute extends its sincere thanks to the Steering Committee for their guidance throughout the development of this Framework, and the leadership of its Chair, Paul Harris, Executive Director of Innovative Research Universities. We further acknowledge the vital input of Caitlin Searle and Sunil Muneshwar from the Australian Department of Industry, Science and Resources, whose ongoing engagement informed key elements of the Framework.

Four thematic workshops, led by Australian and Indian experts who also authored the relevant sections, played a central role in shaping the Framework. We thank these workshop leads, along with the many researchers, practitioners and institutional representatives who participated and shared valuable insights from their collaborative experiences.

This work was funded by the Australian Government Department of Education, whose continued support of the Australia India Institute enables us to play a critical role in strengthening research engagement between the two nations.

While this Framework provides a strong foundation on which Australia and India can build research collaboration, realising its full potential will depend on continued commitment and coordinated effort from all stakeholders, supported by necessary investment. It is our hope that this Framework acts not only as a guide, but as a catalyst for deepening research cooperation on the challenges our two nations face.

The Hon. Lisa Singh
Chief Executive Officer,
Australia India Institute

ACRONYMS

AI: Artificial Intelligence

AICCTP: Australia–India Cyber and Critical Technology Partnership

AICMRH: Australia–India Critical Minerals Research Hub

AI-ECTA: Australia-India Economic Cooperation and Trade Agreement

AIESC: Australia-India Education and Skills Council

AIRC: Australia-India Research Collaboration

AII: Australia India Institute

AIU: Association of Indian Universities

AIWC: Australia India Water Centre

AIRS Fellowship: Australia India Research Students Fellowship Program

AISRF: Australia-India Strategic Research Fund

ANRF: Anusandhan National Research Foundation

ARC: Australian Research Council

ARCH-India: Australian Researcher Cooperation Hub-India

CECA: Comprehensive Economic Cooperation Agreement

CoE: Centre of Excellence

CSP: Comprehensive Strategic Partnership

CSIRO: Commonwealth Scientific and Industrial Research Organisation (Australia)

CRCs: Cooperative Research Centres

CSIR: Council of Scientific and Industrial Research (India)

DE: Department of Education (Australia)

DPIs: Digital Public Infrastructures

DST: Department of Science and Technology (India)

ECR: Early-Career Researcher

ESG: Environmental, Social, and Governance

EVs: Electric Vehicles

GIAN: Global Initiative of Academic Networks

HEIs: Higher Education Institutions

IAGHT: India–Australia Green Hydrogen Taskforce

IISc: Indian Institute of Science

IIT Council: Indian Institutes of Technology Council

IITs: Indian Institutes of Technology

IP: Intellectual Property

KPIs: Key Performance Indicators

LCA: Life-Cycle Assessment

MCRs: Mid-career Researchers

MNRE: Ministry of New and Renewable Energy (India)

MoU: Memoranda of Understanding

MTAs: Material Transfer Agreements

NGOs: Non-Governmental Organisations

NITI Aayog: National Institution for Transforming India

OEMs: Original Equipment Manufacturers

OT: Operational Technology

ICS: Industrial Control System

PV: Photovoltaics

R&D: Research and Development

RISE: India Australia Rapid Innovation and Startup Expansion

ROI: Return on Investment

SDGs: Sustainable Development Goals

SMEs: Small and Medium Enterprises

SPARC: Scheme for Promotion of Academic and Research Collaboration

TEA: Techno-Economic Assessments

TES: Thermal Energy Storage

UA: Universities Australia

UN: United Nations

VAJRA: Visiting Advanced Joint Research Faculty Scheme

WHO: World Health Organization

Field work image from the AISRF Round 15 (2024) project developing an AI-based monitoring platform for soil carbon sequestration, led by the University of Sydney and CSIRO in partnership with multiple Indian research institutes. Image: AISRF

EXECUTIVE SUMMARY

The Australia-India Research Collaboration (AIRC) Framework sets out a forward-looking roadmap to strengthen interdisciplinary research partnerships between Australia and India. It recognises the strength and diversity of the research ecosystems of both countries and provides a coordinated approach for deepening collaboration and translating research into impactful outcomes for achieving national, regional, and global priorities.

The Framework builds on and expands the foundational work of the Australian Researcher Cooperation Hub-India (ARCH-India), a digital platform set up by the Australia India Institute (AII) in 2021 to enhance bilateral research collaboration and showcase the research excellence of both countries. ARCH-India has served as a valuable resource base and successfully connected many Australian and Indian researchers.

AIRC FRAMEWORK OBJECTIVES AND GUIDING PRINCIPLES

THE FRAMEWORK OBJECTIVES ARE TO:

- *Promote* wider collaborations and exchanges between researchers of both countries for innovation and shared benefit.
- *Support* bilateral multi-stakeholder partnership opportunities that advance and expand in new and emerging research areas.
- *Translate* and sustain joint research efforts tackling key bilateral and global challenges.

THE CORE GUIDING PRINCIPLES AND ELEMENTS OF THE FRAMEWORK CENTRE ON:

Early Career Researcher (ECR) opportunities for new generations of talented scholars to find counterparts in the other country to work on joint projects of bilateral and global significance.

Researcher mobility that enables easy movement between the two countries for working on collaborative projects and exchange programs.

Industry involvement in collaborative research projects to maximise research translation for economic and social impact in both contexts.

Joint funding initiatives and grant opportunities that support collaborative development of research projects between academic institutions, industry, governments and civil society organisations across both countries.

THE AIRC FRAMEWORK IS FOR:

- Higher education researchers – early, mid-career and senior researchers, and doctoral students – exploring new research collaboration opportunities in the other country.
- Higher education policymakers promoting academia-industry research collaborations across Australia and India.
- Australian and Indian university associations providing connections and informational support to their member institutions for pursuing bilateral research collaboration.
- Higher education institution leadership, senior- and mid-career researchers aiming to establish research-industry partnerships in Australia and India.
- Industry leaders from both countries considering targeted international research partnerships focused on translation and commercialisation.
- Community organisations seeking international academic partners for evidence-based research and implementation in their country contexts.

RESOURCES FOR RESEARCH COLLABORATION INCLUDE:

- Bilateral Collaboration Roadmap for ECRs (pages: 50–52)
- Guide for Securing Collaborative Research Funding (pages: 54-57)
- ECR Professional Development Ecosystem (page: 58)
- Researcher Mobility Checklist (page: 59)
- Process Guide for Academic-Industry Research Collaboration (page: 62)
- Good Practice Guide for Scoping Commercial Research Partners (pages: 66–70)
- Checklist of Principles for IP Sharing and Technology Transfer in University-Industry Collaboration (pages: 71–72)
- Australia-India Research Collaboration Schemes (pages: 74–75)

METHODOLOGY

The AIRC Framework has been informed by insights from four thematic workshops and expert Steering Committee input.

STEERING COMMITTEE

The Framework was developed with guidance provided by a Steering Committee comprising 16 senior representatives from higher education institutions (HEIs), government departments, and industry in both countries.

The Committee met three times over the course of the project cycle. Key areas of input included:

- Structure and thematic focus of online workshops.
- Core principles underpinning the Framework, along with systems-level challenges to be addressed.
- Identification of target stakeholders in the bilateral research ecosystem across government, HEIs, industry and community.
- Strategic resources to be included in the Framework for strong value-add.
- High-level recommendations driving the future of research collaboration, mapped by stakeholders.
- Feedback on the draft Framework, including developed resources and supporting case studies.

THEMATIC WORKSHOPS

Four thematic workshops on selected interdisciplinary themes of bilateral strategic importance were convened to discuss the current research landscape and opportunities for future collaborations.

Online workshops were led by Australian and Indian domain experts for each of the four thematic areas identified for the Framework:

- *Energy Transitions and Climate Change Resilience* – advancing decarbonisation, renewable technologies, low-emissions industries, and climate adaptation.
- *Sustaining Healthy Communities* – promoting equitable, interdisciplinary approaches to public health, wellbeing, and inclusive care models.
- *Advanced Manufacturing Technologies* – driving collaboration in critical minerals, clean-tech, semiconductors, and circular manufacturing systems that support resilient growth.
- *Cybersecurity and Digital Governance* – building trusted infrastructures, ethical artificial intelligence (AI), and data-sharing frameworks that safeguard citizens while enabling innovation.

The workshops covered the following elements:

- Opening session with expert insights:
  - Expert presentations – three to four short presentations aligned to key subthemes
- Breakout discussions on the three Framework action points:
  - Case studies illustrating key aspects of research collaboration
  - A problem statement or key challenge posed by the theme leads
  - A short presentation by theme leads framing the main focus of research collaboration issues specific to the thematic area
- Synthesis and reflections

Workshops brought together 30 key speakers and more than 260 participants from both countries to understand research capabilities and specific areas for academia-industry collaboration.

The Australian and Indian workshop co-leads contributed case studies for their thematic areas outlining the research context, key advantageous areas for potential academic-industry collaboration, challenges, strategies, and indicators for achieving collaboration targets.

STRATEGIC CONTEXT

Research partnerships continue to be at the core of the Australia-India education relationship, underpinned by the shared ambition to develop a sustainable, knowledge-based future for mutual benefit. Over the past two decades, bilateral engagement has evolved from informal academic exchanges into a structured ecosystem of co-funded research, innovation partnerships, and industry-driven collaboration. Australia's world-class research infrastructure and applied science capabilities, together with India's scale, talent base, and rapidly expanding higher education and innovation systems have driven multidisciplinary collaboration across health, energy, digital transformation, and community resilience.

Bilateral research is deepening in both scale and thematic scope. Between 2007 and 2021, formal partnerships between Australian universities and Indian higher education institutions increased nearly fivefold and research and academic collaboration represented the dominant form of engagement, with 360 active partnerships (Harinandini & Rangan, 2023). Collaboration is also increasingly aligned with the United Nations (UN) Sustainable Development Goals (SDGs) that advance national targets, such as health, clean energy, innovation and climate action, with emerging focus on education, gender equality, and sustainable cities. While researchers in both countries recognise the importance of multidisciplinary knowledge for driving research impact, there is enormous potential for these practices to be formally embedded in the bilateral research cooperation ecosystem (Krishna, Harinandini, & Rangan 2024).

The Australian Government's *A New Roadmap for Australia's Economic Engagement with India* and the *Australia-India Comprehensive Strategic Partnership* identify research and innovation as critical drivers of the bilateral economic relationship and advocate for stronger institutional partnerships that connect research excellence with industry and policy development. The 2024 Australia India Education and Skills Council (AIESC) Joint Communiqué reinforces these commitments by calling for strengthening bilateral research workforces to strategically drive translation and commercial outcomes across 12 priority sectors.

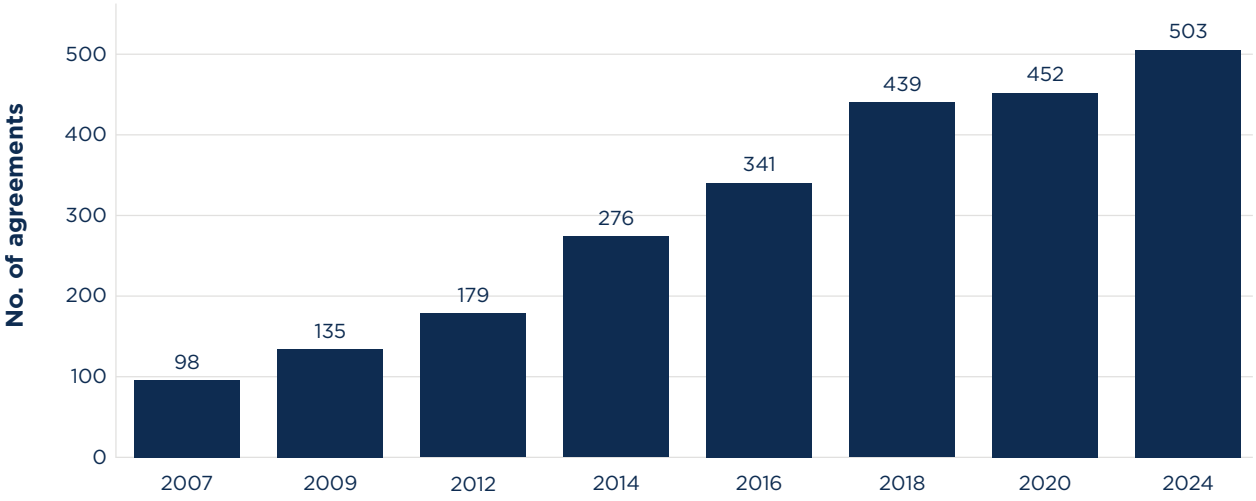
The AIRC Framework develops a roadmap for supporting these aspirations, including guidance on leveraging and expanding the scope of existing funding and collaborative schemes to bolster research impact. It spotlights emerging and innovative research initiatives geared towards building R&D capacity and infrastructure in both countries and provides strategic guidance for impactful collaboration and mutual benefit.

The Asian Smart Cities Research Innovation Network (ASCRIN) has developed a portable sensor device to improve quality assurance of milk products. Image: ASCRIN

DATA SNAPSHOT OF AUSTRALIA-INDIA RESEARCH COLLABORATION

NUMBER OF AGREEMENTS WITH INDIA

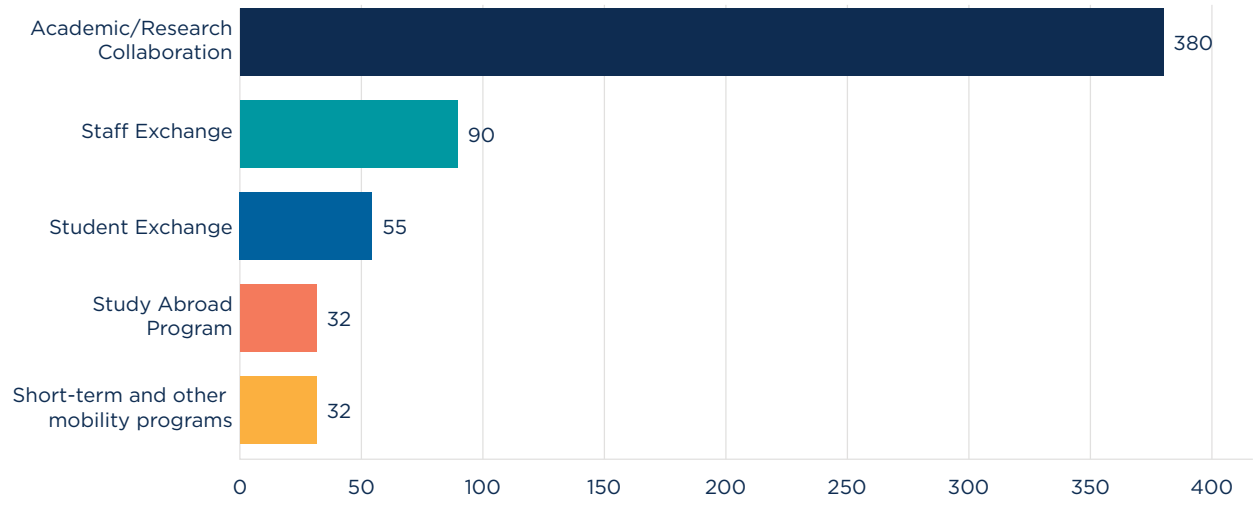
Between 2007 and 2024, formal partnership agreements between Australian and Indian HEIs increased fivefold to over 500.



Source: Universities Australia MoU data, 2024

NUMBER OF FORMAL AGREEMENTS WITH INDIA BY TYPE OF AGREEMENTS IN 2024

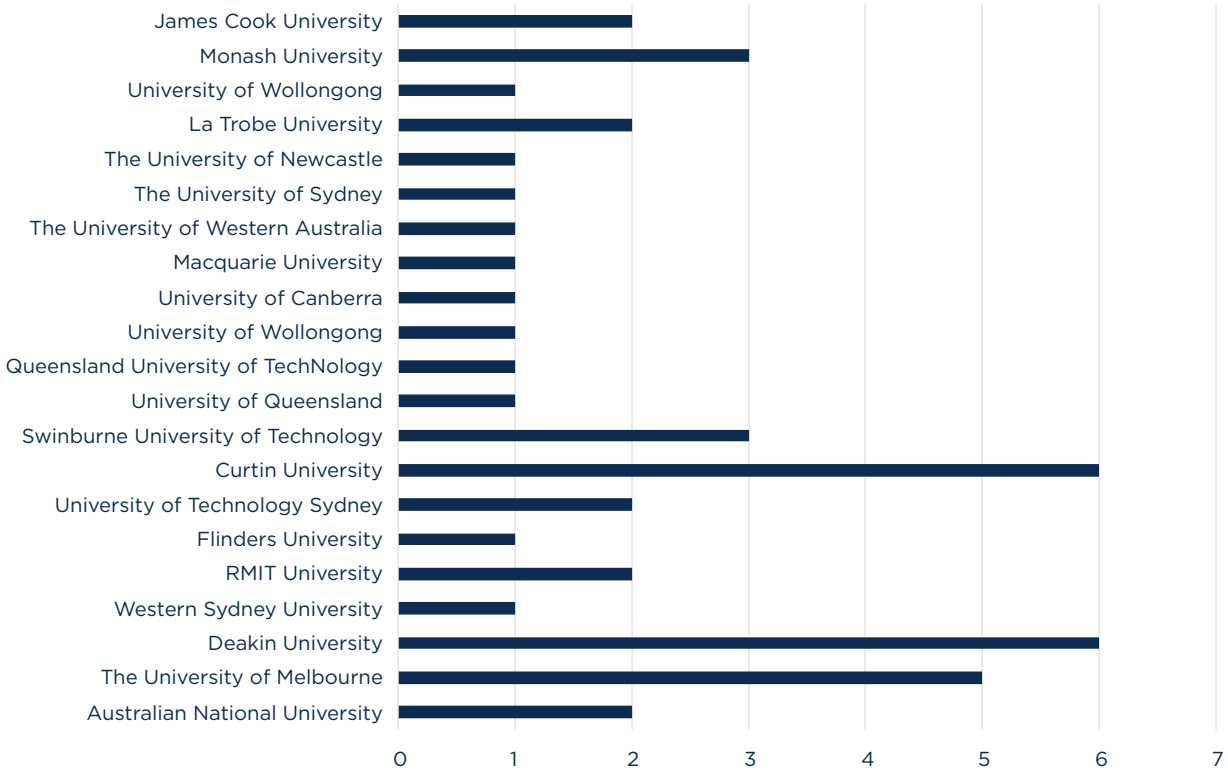
Majority of these agreements were focused on academic and research collaboration, accounting for 380 MoUs.



Source: Universities Australia MoU data, 2024

JOINT PHD AGREEMENTS

As of 2023, there were over 40 joint PhD agreements between Australian universities and Indian HEIs.

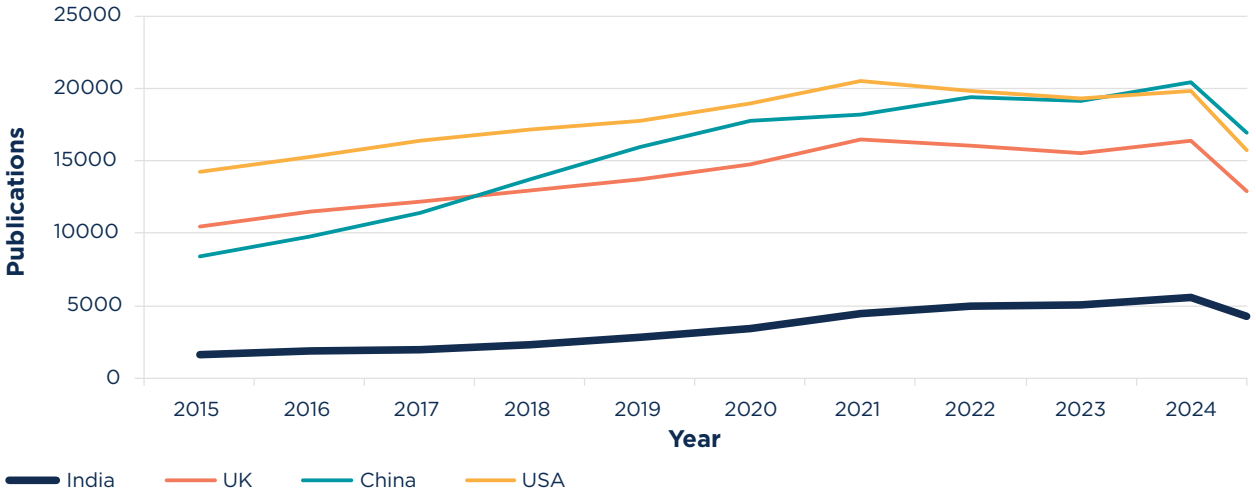


Source: Mapping Higher Education Engagement between Australia and India - A Compendium, 2023

Australia India Water Centre researchers, through the MARVI project, engaging with members of the Village Groundwater Cooperatives in discussions on developing a groundwater-sharing framework. Image: AIWC.

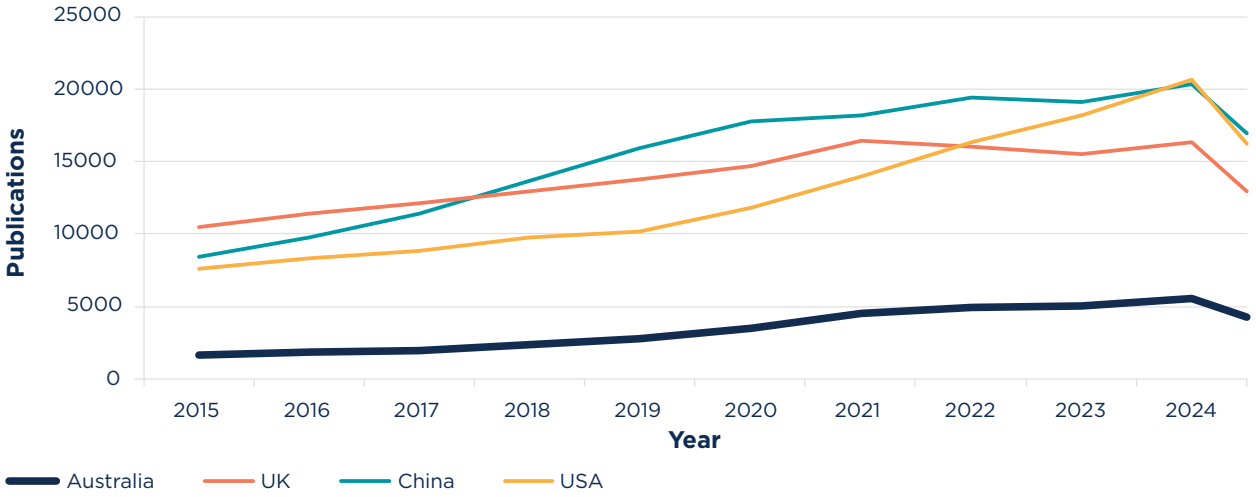
TOP 10 PARTNER COUNTRY TRENDS (FOR AUSTRALIA)

Between 2015 and 2024, Australian and Indian researchers co-authored over 33,500 publications.



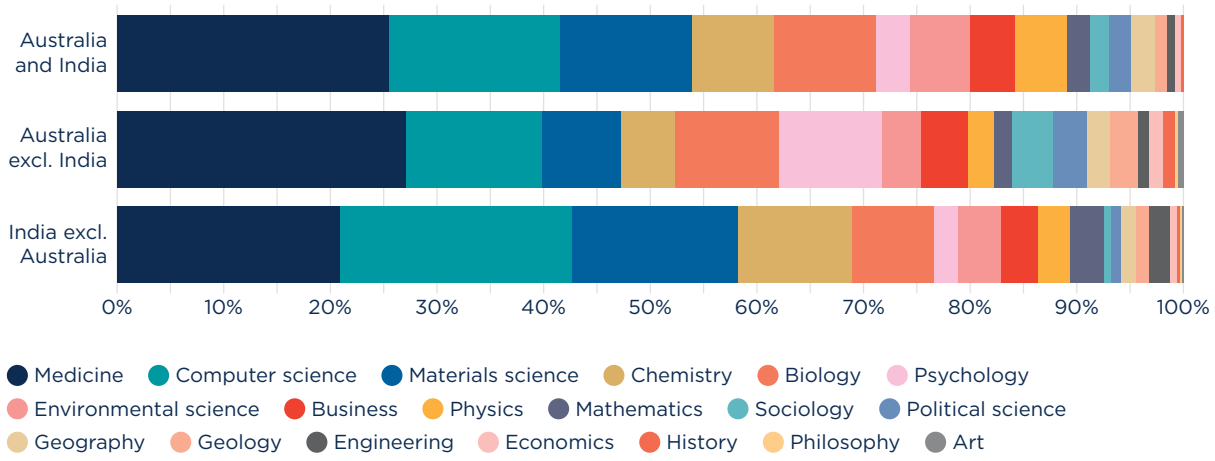
Source: Scopus 2025

TOP 10 PARTNER COUNTRY TRENDS (FOR INDIA)



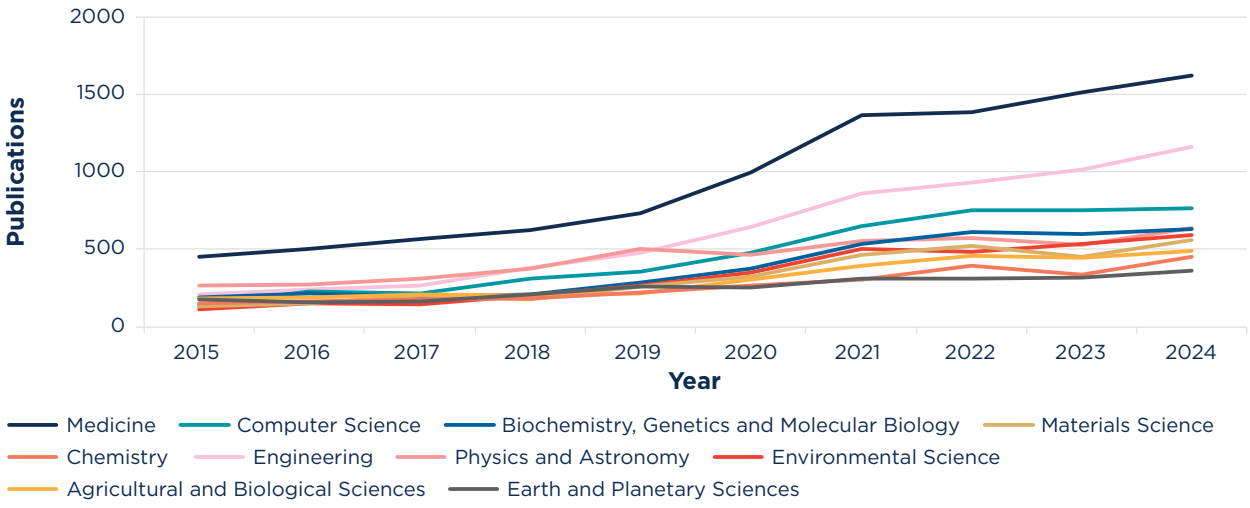
Source: Scopus 2025

COMPARISON OF SUBJECT AREA DISTRIBUTIONS ACROSS COUNTRY CATEGORIES



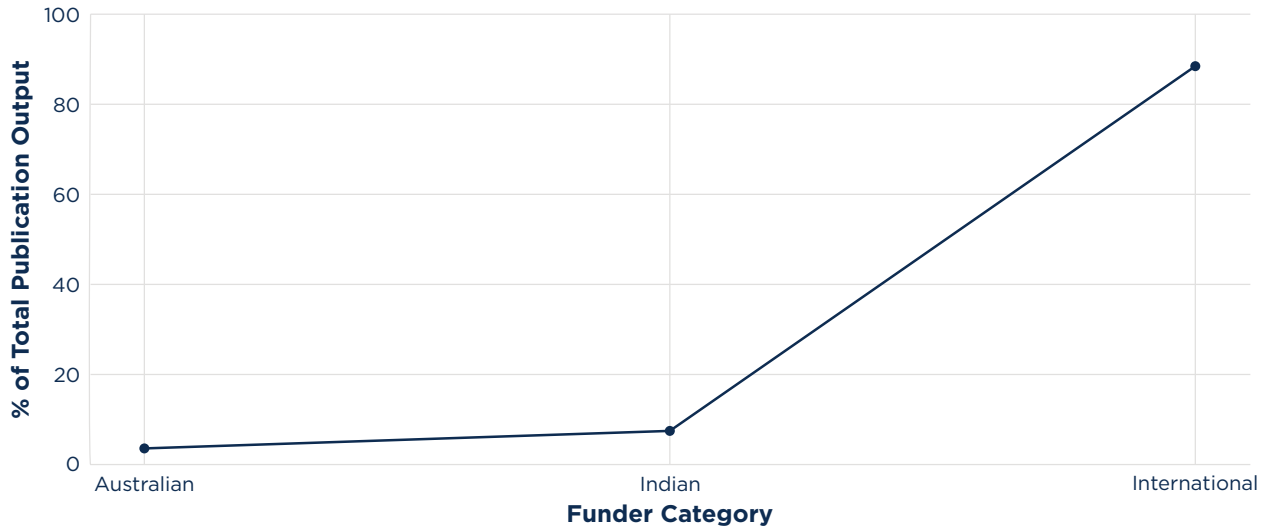
Source: Innovative Research Universities (IRU) and the Curtin Open Knowledge Initiative (COKI)

TOP 10 AREAS OF AUSTRALIA-INDIA COLLABORATIONS (2015-2024)



Source: Scopus 2025

PROPORTION OF EACH TYPE OF FUNDER CONTRIBUTING TO BILATERAL RESEARCH COLLABORATION



Source: Scopus 2025

TOP HIGHER EDUCATION INSTITUTIONS FEATURED IN AUSTRALIA-INDIA JOINT RESEARCH PUBLICATIONS (2014-25)

AUSTRALIA

INSTITUTION	PUBLICATIONS
University of Melbourne	3996
Monash University	3809
The University of Sydney	3433
UNSW Sydney	3293
The University of Queensland	2839
University of Technology Sydney	2760
The University of Western Australia	2284
The University of Adelaide	1885
Deakin University	1790
The Australian National University	1685
RMIT University	1667
Curtin University	1529
The University of Newcastle, Australia	1400
Macquarie University	1313
Commonwealth Scientific and Industrial Research Organisation	1196
Swinburne University of Technology	1114
George Institute for Global Health	1024
Griffith University	989
Western Sydney University	935
Queensland University of Technology	934

INDIA

INSTITUTION	PUBLICATIONS
Indian Institute of Technology Bombay	1713
Indian Institute of Technology Madras	1634
Tata Institute of Fundamental Research, Mumbai	1460
Manipal Academy of Higher Education	1197
Indian Institute of Science	1175
Panjab University	991
University of Delhi	965
All India Institute of Medical Sciences, New Delhi	917
Lovely Professional University	892
Indian Institute of Technology Hyderabad	828
Indian Institute of Technology Bhubaneswar	792
Bhabha Atomic Research Centre	770

TOP FUNDING SOURCES FOR AUSTRALIA-INDIA RESEARCH COLLABORATION RESULTING IN JOINT PUBLICATIONS (2014-25)

AUSTRALIAN FUNDER	PUBLICATIONS
Australian Research Council	2289
Australian Government	252

INDIAN FUNDER	PUBLICATIONS
Department of Science and Technology, Ministry of Science and Technology, India	2081
Council of Scientific and Industrial Research, India	1067
Department of Biotechnology, Ministry of Science and Technology, India	562
Department of Atomic Energy, Government of India	543
Ministry of Education, India	287
Indian Council of Medical Research	226
Indian Council of Agricultural Research	211
Indian Institute of Technology Bombay	185

INTERNATIONAL FUNDER	PUBLICATIONS
National Science Foundation	1801
European Commission	1498
Horizon 2020 Framework Programme	1361
National Natural Science Foundation of China	1267
National Health and Medical Research Council	1224
Deutsche Forschungsgemeinschaft	1134
National Research Foundation of Korea	1035
Japan Society for the Promotion of Science	1034
Science and Engineering Research Board	983
National Institutes of Health	947

Source: Scopus 2025

THE FRAMEWORK

FRAMEWORK AIM

To provide an accessible and practical guide for Australian and Indian stakeholders seeking to advance the growth and success of bilateral research cooperation.

FRAMEWORK OBJECTIVES

1. *Promote* wider research collaboration for innovation and the shared benefit of both countries.
2. *Support* multi-stakeholder partnership opportunities that advance and expand in new and emerging research areas.
3. *Translate* and sustain collaborative research focused on tackling key bilateral and global challenges.

CORE GUIDING PRINCIPLES FOR THE FRAMEWORK

- **ECR opportunities**
  Increase the pool for collaboration by attracting ECRs and doctoral students to work on joint projects of bilateral and global significance.
- **Researcher mobility**
  Enable easy movement of researchers working on collaborative projects and exchange programs.
- **Industry involvement**
  Facilitate multi-stakeholder research partnerships between universities, industry, government, and civil society to maximise research translation for economic and social impact.
- **Joint research funding**
  Provide information about key national, bilateral, and global initiatives and research grant opportunities, strategies and workshops for developing joint research projects, and case studies of funding successes.

FRAMEWORK DEVELOPMENT

The Framework was developed through a consultative process designed to reflect the national research priorities and stakeholder expertise of both countries. A Steering Committee chaired by Paul Harris, Executive Director of the Innovative Research Universities grouping, along with a group of eminent researchers and leaders from universities, industry, and government representatives provided guidance for the development of the framework.

Four interdisciplinary thematic areas – Energy Transitions and Climate Change Resilience, Sustaining Healthy Communities, Advanced Manufacturing Technologies, and Cybersecurity and Digital Governance – were identified for online workshops focused on challenges and opportunities for researchers and collaborative projects. The thematic areas incorporate several Australian National Science and Research Priorities (Department of Industry, Science and Resources, 2024), including Transitioning to a Net Zero Future, Supporting Healthy and Thriving Communities, and Protecting and Restoring Australia's Environment.

In the Indian context, the thematic areas align with the Department of Science & Technology's Technology Development Programmes, as well as the divisions within the Ministry of Electronics & Information Technology, such as Digital Governance, R&D in Cybersecurity, and AI & Emerging Technologies. They also reflect priority areas identified for bilateral research collaboration in India's Scheme for Promotion of Academic and Research Collaboration (SPARC), such as Energy, Sustainability and Climate Change, Manufacturing & Industry 4.0, Agri & Food Technologies, Healthcare & MedTech, Advanced Materials, Rare-earth & Critical Minerals, and Smart Cities & Mobility.

THE ARCHITECTURE OF BILATERAL RESEARCH COLLABORATION

International collaborations between researchers at HEIs have been integral to the global advancement of scientific knowledge, discovery, innovation and economic transformation over the past century.

Although much of the attention of new scientific discoveries centres on individual researchers, their universities, along with many more institutional actors, play critical roles in providing the conditions for fostering collaborations that yield successful research outcomes. These institutions are key players in providing the infrastructure and resources to enable researchers to scale up their activities, engage in interdisciplinary projects that address global challenges, connect with industry, train students, and create mechanisms for sharing resources, knowledge and skill transfer with their international collaborators.

Research collaboration between Australia and India has grown substantially over the past two decades, shaped by a variety of bilateral cooperation agreements, national policies, institutional actors and funding initiatives. Together, these actors and enablers create the architecture for researchers from both countries to collaborate on projects of mutual interest and benefit.

The arch diagram offers a simplified illustration of the architecture of bilateral research collaboration.

Australian Education Minister The Hon Jason Clare, Australia India Institute's CEO The Hon Lisa Singh, Indian Minister for Education, Skill Development and Entrepreneurship, Shri Dharmendra Pradhan at the formal launch of ARCH-India in 2022. Image: Sally Tsoutas, Western Sydney University

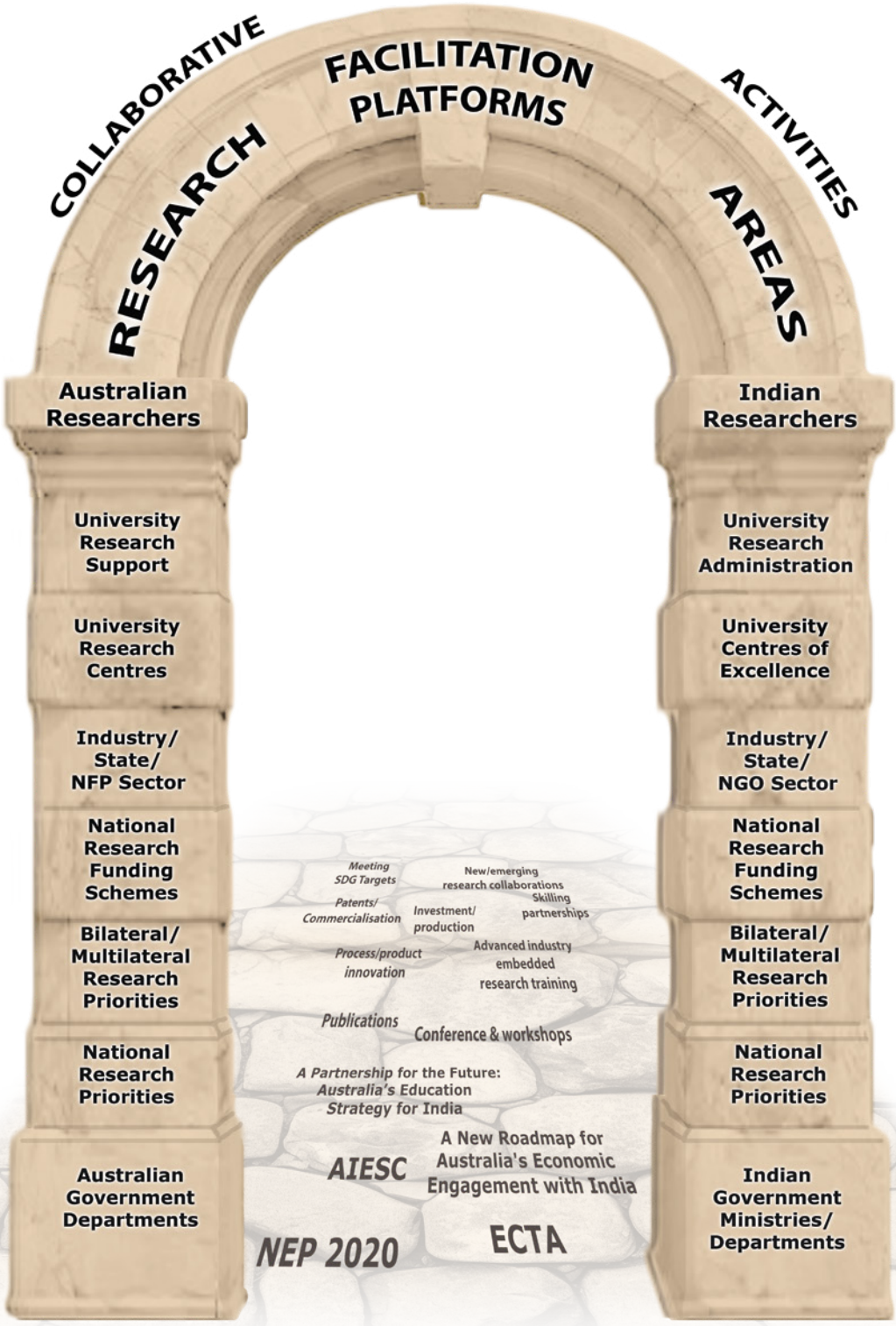
Bilateral agreements such as the Comprehensive Strategic Partnership (CSP) and the Economic Cooperation and Trade Agreement (AI-ECTA), and policy reports such as the India Economic Strategy to 2035 **pave the way** for research cooperation. They identify areas of economic growth and advantage where research collaborations and partnerships between HEIs and industries in both countries can lead to **further pathways** of innovation, technology transfer, commercialisation and social programs that deliver mutual benefit.

The AIESC chaired by Ministers of Education and Skills of both countries plays a central role in **establishing the foundation and setting the strategic direction** of bilateral education, training and research partnerships.

The **stones that form the two pillars of the arch** represent each country's institutional structures, components and initiatives which support the activities of their respective researchers. While the labels on the stones of the Australian and Indian pillars appear symmetrical, the ways in which they operate to support their research environments and researchers are substantially different.

The Australian and Indian researchers function as the **springheads of each pillar** generating the **arch curve** of collaborative activities ranging from staff and student exchange, visiting and spending time at each other's laboratories, co-publications, and jointly applying for research grants. Indian and South Asian diaspora researchers at Australian universities have been the main drivers of bilateral research collaboration. Their connections, networks, and passionate commitment have been central in forging institutional and strengthening research links between the two countries.

The **keystone of the arch** represents facilitation platforms, such as ARCH-India, that enable researchers from both countries to effectively search for and establish connections with counterparts for pursuing joint research projects.



AUSTRALIA INDIA BILATERAL COOPERATION

PILLAR STONES OF THE AUSTRALIA-INDIA RESEARCH COLLABORATION ARCH

National-level government departments and ministries	May fund research relevant to innovation and industrial development in their respective sectors, with some opportunities for international collaborations.
National research priorities	Are shaped by each government's commitments to their national economic development and social benefit agendas.
Bilateral and multilateral research priorities	Focus on knowledge exchange, technology transfer, and other sectoral initiatives that include some level of cooperation between research organisations, universities and industry. Examples include the India Australia Rapid Innovation and Startup Expansion (RISE), the India-Australia Green Hydrogen Taskforce (IAGHT), and the Australia India Water Centre (AIWC). Multilateral priorities may include commitments to meeting UN Sustainable Development Goals or UNFCCC targets.
National research funding schemes – Australia	The Australian Research Council's (ARC) Discovery and Linkage projects, Centres of Excellence (CoEs), Cooperative Research Centres (CRCs) and National Health and Medical Research Council (NHMRC) grants support international research collaborations.
National research funding schemes – India	The Anusandhan National Research Foundation (ANRF) provides competitive grant funding to individual researchers for fundamental and applied research, some of which are open to collaboration with scientists within and outside India. Other funding programs such as Global Initiative of Academic Networks (GIAN), Visiting Advanced Joint Research Faculty Scheme (VAJRA), and the Scheme for Promotion of Academic Research Collaboration (SPARC), promote international partnerships, academic staff and student exchanges, and joint course development between top tier Indian HEIs and highly ranked foreign universities.
Bilateral research funding schemes	The flagship bilateral funding initiative over the past decade is the Australia India Strategic Research Fund (AISRF). Other funding schemes such as the Centre for Australia India Relations' Maitri Fellowships and Scholarships provide support to individual researchers and doctoral students from Australia and India to work on topics of bilateral interest in each other's countries. A limited number of small, one-off grants funded by the Australian Department of Education (DE) have supported early-career researcher exchange (Australia India Research Students Fellowship - AIRS), deepening ongoing research collaborations (Australia India 'Unnati' Research Collaboration Grants), and academic exchange program for women STEM researchers in Australian regional universities and public universities in Indian Tier 2 and 3 cities (Australia India Women Researchers' Exchange Program – AIWE).
State governments/ industry/social sector	There are numerous research grants and funding schemes offered by these actors in both countries focused on their respective priority areas. Although most of these are aimed at domestic researchers and institutions, some may include scope for international collaborations.
Higher education peak bodies	Bodies such as Universities Australia (UA), the Association of Indian Universities (AIU), the Indian University Grants Commission (UGC), the All-India Council for Technical Education (AICTE), and the IIT Council represent the interests of their member institutions. They play a key role in shaping research collaboration policy and facilitating high level agreements for promoting international education and research collaborations.
Australian universities and Indian HEIs	Almost all Australian universities have established memorandum of understanding (MoUs) with a wide range of Indian private and public HEIs for research engagement, faculty exchanges, and student mobility. Some Australian universities have well-established joint doctoral research academies and programs with top tier Indian HEIs involving co-supervision and student mobility related to their research projects. Joint doctoral programs are based in the Indian partner institution and cater primarily to Indian students. Since 2023, some Australian universities have opened branch campuses in Indian states and offer undergraduate and postgraduate degree courses.
University research administration	Australian universities and Indian HEIs have different administrative systems and processes for enabling international research collaboration. Most Australian universities have dedicated central offices that assist their researchers for facilitating international research grant proposal submission, signing contracts between institutions, and managing grant funding, payments and milestone reporting to funding agencies. Indian HEIs have greater diversity in international research administration and management. Some have centralised systems controlled by the University Registrar, others may have more decentralised systems sitting within Centres of Excellence for managing international collaboration grants.
Facilitating platforms and institutes	Australian Researcher Cooperation Hub-India (ARCH-India) provides the means for researchers from each side to seek information about potential collaborators, grant opportunities, collaboration experiences, success stories, and online workshops. The AII manages the ARCH-India platform and plays a critical role in convening and facilitating bilateral education and research cooperation activities, including compiling data, building an evidence base, doing policy research, administering Department of Education funded research exchange and collaboration grants, and hosting workshops and dialogues.

KEY CHALLENGES FOR BILATERAL RESEARCH COLLABORATION

Although there has been marked progress in bilateral research cooperation over the past two decades, there are several challenges that need to be addressed for achieving the Framework objectives. Based on Steering Committee member consultations and inputs from online workshop experts and participants, the following key challenges have been mapped against each Framework objective.

FRAMEWORK OBJECTIVES	CHALLENGES
1. *Promote* wider collaborations and exchanges between researchers of both countries for innovation and shared benefit	**University level** • Unclear alignment between international education strategies and research collaboration goals of Australian universities and their Indian HEI partners. • Differences between Australian university and Indian HEIs in systems of research grant administration, management, and monitoring protocols. • Significant disparities between a small number of elite Indian HEIs and the majority of Indian universities and HEIs with respect to research infrastructure, resources, university research support for collaborations, industry engagement, translation and commercialisation. **Researcher level** • Limited information for researchers on either side regarding the potential scope for international collaboration within their respective national research funding schemes and grants. • Limited knowledge among: » non-Indian diaspora researchers in Australian universities regarding: 1. world-class research expertise/specialisation in Indian HEIs beyond the elite IITs; 2. diversity of academic and research culture, infrastructure in Indian HEIs. » Indian HEI researchers (excluding those based in elite institutions, e.g., IISc, IITs) regarding world class research expertise/ specialisations in Australian universities, particularly in comparison with their knowledge of universities in the USA, Canada, UK, and Europe. • Significant disparities between Australian and Indian ECRs in capabilities, peer networks, and institutional mentorship to apply for international competitive grant funding. • Limited opportunities for ECRs in casualised academic appointments to develop industry research partnerships. • Mobility constraints for researchers – uncertain timeframes to obtain government approvals for visas, permits, and receive approval for leave from their institutions to participate in research exchange programs.
2. *Support* multi-stakeholder partnership opportunities that advance and expand in new and emerging research areas	• Limited availability of bilateral industry research funding schemes. • Limited mutual awareness among Australian and Indian industry groups regarding research leadership in emerging technologies and new growth sectors. • Limited resource capacity within SMEs to co-contribute or fully fund PhD students or postdoctoral researchers for three to four years. • Limited R&D infrastructure and personnel in SMEs to manage researcher placements. • Graduates from joint doctoral academies unable to find appropriate work opportunities in Indian industry.
3. *Translate* and sustain collaborative research focused on tackling key bilateral and global challenges	• Varied capabilities and experience of Australian universities and Indian HEI partners in industry research translation. • Complexity of IP regulations in each country context for translation and commercialisation. • Limited awareness around systems of protection and fair recognition of doctoral student and ECR contributions in IP management. • Uncertainties with research outcomes, translation, and time to commercialisation. • Limited information for venture capital investors on institutional commitment, governance structures, and timeframes for bilateral multi-stakeholder research commercialisation.

FRAMEWORK RECOMMENDATIONS

The following recommendations address the above challenges and key actors involved in furthering bilateral research cooperation.

AUSTRALIAN UNIVERSITIES, INDIAN HEIs AND THEIR RESPECTIVE PEAK BODIES

RECOMMENDATION 1.

Australian universities with interests in establishing campuses in India should align their R&D strategy with the undergraduate and postgraduate courses offered at their Indian campuses.

RECOMMENDATION 2.

Australian universities, Indian HEIs, and their respective peak bodies (UA and AIU) should develop a broader range of metrics, measures and stakeholders to identify suitable partners with disciplinary and interdisciplinary excellence across research priority areas addressing national, bilateral, and global challenges.

RECOMMENDATION 3.

Bilateral funding commitment by universities and peak bodies to build evidence-based systems of monitoring and evaluating multi-stakeholder research collaborations.

RECOMMENDATION 4.

Commitment between Australian university and Indian HEI partners to expand research mobility grants targeted at embedding ECRs in regional technology innovation clusters and start-up hubs in each other's country.

INDUSTRY AND COMMERCIAL PARTNERS

RECOMMENDATION 5.

Commitment to support closer linkages between HEIs and regional-technology innovation clusters and start-up hubs in both countries.

RECOMMENDATION 6.

Bilateral commitment of industry peak bodies to jointly develop protocols with HEI peak bodies for data sharing, IP agreements, technology transfer processes and licensing to accelerate translation and commercialisation of industry research collaborations.

RECOMMENDATION 7.

Bilateral commitment from industry peak bodies and associations to facilitate longer-term joint research projects with SMEs in key emerging sectors embedded within regional technology clusters and start-up hubs.

AUSTRALIAN AND INDIAN GOVERNMENT POLICYMAKERS

RECOMMENDATION 8.

Commitment to establish coordinated systems of visa approval and institutional support for researchers participating in collaborative projects and exchange programs in both countries.

RECOMMENDATION 9.

Explore opportunities to support the ARCH-India platform in hosting short courses and online training, providing resources, and facilitating workshops on industry research for doctoral ECRs.

PRIORITY ACTION AREAS FOR SUCCESSFUL GROWTH OF BILATERAL RESEARCH COLLABORATIONS

The following suggestions for priority action areas and related activities address the Framework objectives and recommendations.

FOR AUSTRALIAN UNIVERSITIES, INDIAN HEIs, AND THEIR RESPECTIVE PEAK BODIES

RECOMMENDATIONS	
Recommendation 1:	Australian universities with interests in establishing campuses in India should align their R&D strategy with the undergraduate and postgraduate courses offered at their Indian campuses.
Recommendation 2:	Australian universities, Indian HEIs, and their respective peak bodies (UA and AIU) should develop a broader range of metrics, measures and stakeholders to identify suitable partners with disciplinary and interdisciplinary excellence across research priority areas addressing national, bilateral, and global challenges.
Recommendation 3:	Bilateral funding commitment by universities and peak bodies to build evidence-based systems of monitoring and evaluating multi-stakeholder research collaborations.
Recommendation 4:	Commitment between Australian university and Indian HEI partners to expand research mobility grants targeted at embedding ECRs in regional technology innovation clusters and start-up hubs in each other's country.

PRIORITY ACTION AREAS	
A.	Alignment of higher education internationalisation and international research collaboration strategies, to map areas of interdisciplinary research excellence, research synergies and active industry engagement of Australian and Indian partners.
B.	Increased opportunities for expanding existing partnerships and the talent pool for collaborations, including tailored guidance for ECRs and doctoral students to participate in joint research projects.
C.	Online training and resources for building ECR capacity to participate in multi-stakeholder industry projects.
D.	UA and AIU to build and execute an agile framework for tracking joint research collaboration progress, outcomes, and impact.

2023 Australia India Research Students Fellowship fellows meet with Australian Education Minister The Hon Jason Clare and Australia India Institute CEO The Hon Lisa Singh. Image: Australia India Institute

ACTION AREAS	SUGGESTED ACTIVITIES
A. Alignment of higher education internationalisation and international research collaboration strategies, to map areas of interdisciplinary research excellence, research synergies and active industry engagement of Australian and Indian partners.	• Australian universities explicitly align branch campus strategy focused on disciplinary area excellence with industry/community research collaboration strategy. • Joint seminars or short courses in emerging research areas and topics aligned with their respective disciplinary/interdisciplinary research strengths and excellence hosted by partner institutions. • Research excellence database of member universities developed by UA and AIU. **SUPPORTING PLAYERS** **Government departments** • Promoting research expertise and collaboration capabilities of Australian universities and Indian HEIs. • Mechanisms for supporting longer-term research in emerging strategic growth sectors. **Facilitation platforms – ARCH-India** • Online networking events centred on latest research in bilateral priority areas. • Showcases of joint research projects involving community and industry participation, policy impact, and translation. • Live, curated database of bilateral research and innovation projects. **Researchers** • Share research collaboration findings on facilitation platforms like ARCH-India to showcase outcomes for industry and community audiences.
B. Increased opportunities for expanding existing partnerships and the talent pool for collaborations, including tailored guidance for ECRs and doctoral students to participate in joint research projects.	• Small internal travel grants and seed funds for doctoral and postdoctoral researchers for initiating industry research projects. • Support for ECRs and mid-career researchers to spend time in the field within communities or in industry settings. Multi-disciplinary, multi-sectoral teams constituted with early-, mid-career, and senior researchers. • Increased numbers of jointly supervised doctoral students. • Hackathons and workshops for ECRs, doctoral students and undergraduate students in Australian and Indian partner institutions on specific global challenge problems. See the EPICS model as an example. **SUPPORTING PLAYERS** **Researchers** • Develop an active community of practice with peers from both countries. • Active communication and knowledge-sharing with community and industry partners.
C. Online training and resources for building ECR capacity to participate in multi-stakeholder industry projects.	• Intra university, cross-departmental teams to enable innovative approaches for co-designing research collaboration projects. • Senior researchers promote and provide mentorship for industry embedded research projects. • Institutional resources and training for ECRs to undertake participatory research. Joint ECR proposal bootcamps and short-term research exchanges to connect ECRs with midcareer and senior academic mentors on either side.
D. UA and AIU to build and execute an agile framework for tracking joint research collaboration progress, outcomes, and impact.	• Monitoring of research collaboration project milestones and doctoral student progress. • Innovation and impact measurement components embedded in joint doctoral programs and research collaboration. • Impact reports cataloguing research outputs, translation, and commercialisation. **SUPPORTING PLAYERS** **Facilitation platforms – ARCH-India** • Proof-of-concept archive of research collaboration. • Monitoring and evaluation case studies of bilateral research collaboration projects.

FOR INDUSTRY AND COMMERCIAL PARTNERS

RECOMMENDATIONS	
Recommendation 5:	Commitment to support closer linkages between HEIs and regional-technology innovation clusters and start-up hubs in both countries.
Recommendation 6:	Bilateral commitment of industry peak bodies to jointly develop protocols with HEI peak bodies for data sharing, IP agreements, technology transfer processes and licensing to accelerate translation and commercialisation of industry research collaborations.
Recommendation 7:	Bilateral commitment from industry peak bodies and associations to facilitate longer-term joint research projects with Small and Medium Enterprises (SMEs) in key emerging sectors embedded within regional technology clusters and start-up hubs.

PRIORITY ACTION AREAS	
E.	Systems for joint governance, administration and funding to streamline HEI-industry research collaboration and translation.
F.	Effective bilateral systems for negotiating IP agreements between universities, HEIs, and industry.
G.	Incentives for SMEs in regional technology clusters and start-up hubs to embed doctoral students in joint research projects.

ACTION AREAS	SUGGESTED ACTIVITIES
E. Systems for joint governance, administration and funding to streamline HEI-industry research collaboration and translation.	• Medium-term investment and seed funding for building robust fundamental and applied research programs with industry. • Playbook for integrating national and regional science and technology innovation hubs into bilateral research collaborations. **SUPPORTING PLAYERS** **Government departments** • Bilateral partnership models that coordinate across departmental funding and annual grant cycles, administration and payments to collaborative research projects. • Efficient fund transfer processes to enable research team leaders from each country to establish teams of doctoral and postdoctoral researchers. • Regulatory alignment that reduces barriers to commercialisation. • Joint research policy and standards protocol.
F. Effective bilateral systems for negotiating IP agreements between universities, HEIs, and industry.	• Co-developed IP agreement frameworks and templates for ease of translation and commercialisation of collaborative research projects. • Curricula and training modules for IP management, co-designed by universities and industry partners. • Patent cross licensing between start-ups in both countries. **SUPPORTING PLAYERS** **Government departments** • Bilateral IP frameworks that balance protection with accessibility. • Culturally appropriate mechanisms, IP agreement frameworks, and international quality standards for research translation and commercialisation in bilateral, regional, and global contexts. • Regulatory alignments that reduce barriers to commercialisation.
G. Incentives for SMEs in regional technology clusters and start-up hubs to embed doctoral students in joint research projects.	• Research collaboration partnerships between universities and SMEs in regional manufacturing/ technology clusters endorsed by industry associations. • Living Lab pilots with joint doctoral academies or Australian university branch campuses in India. **SUPPORTING PLAYERS** **Government departments** • Dedicated bilateral flagship innovation platforms for research translation and commercialisation, designed in partnership with industry technology clusters and start-up hubs. State governments • State government incentives to bridge gap between institutional research projects and local technology clusters and start-up hubs. **Australian universities/Indian HEIs** • Short term research exchange programs for ECRs to experience entrepreneurship culture in technology clusters and startup hubs. • Two-to three-year co-funded seed grants for developing proof-of-concepts with SME and community partners. • New research collaboration pilots initiated within specialised technology clusters and start-up hubs, in partnership with SMEs and state governments. • Joint CoEs at Australian university branch campuses in India in collaboration with Indian HEIs, state governments, and industry partners focused on mutually identified high priority sectors.

FOR AUSTRALIAN AND INDIAN GOVERNMENT POLICYMAKERS

RECOMMENDATIONS	
Recommendation 8:	Commitment to establish coordinated systems of visa approval and institutional support for researchers participating in collaborative projects and exchange programs in both countries.
Recommendation 9:	Explore opportunities to support the ARCH-India platform in hosting short courses and online training, providing resources, and facilitating workshops on industry research for doctoral ECRs.

PRIORITY ACTION AREAS	
H.	Administrative support and prompt action for facilitating researcher mobility and soft landing in the other country's partner institutions and industry.
I.	Scale up professional development resources to promote multistakeholder collaborations for expanding industry embedded research projects – including through ARCH-India.

ACTION AREAS	SUGGESTED ACTIVITIES
H. Administrative support and prompt action for facilitating researcher mobility and soft landing in the other country's partner institutions and industry.	• Investment in a long-term framework for bilateral research mobility, including strategies for promoting Australian researchers' travel to India. • Periodic coordination and information-sharing with HEI peak bodies in both countries to support administrative processes of mobility in member universities. **SUPPORTING PLAYERS** **Australian Universities/Indian HEIs** • Resolution of mobility bottlenecks via close coordination with host HEI and government departments. • Advice and support with visa applications and other employment legislation as appropriate. • Information on industry research opportunities and funding programs through workshops, monthly bulletins etc.
I. Scale up professional development resources to promote multistakeholder collaborations for expanding industry embedded research projects – including through ARCH-India.	• Support for hosting webinars, workshops, professional development modules and microcerts for researchers, in collaboration with HEIs and industry partners. • Showcases of completed collaborative projects and seed-funded projects. • An Australia-India research collaboration tracker on key facilitation platforms and department websites highlighting case studies, learnings, and benefits. **SUPPORTING PLAYERS** **Australian Universities/Indian HEIs** • Curricula and training modules co-designed with industry and community partners. • Access to mentoring schemes, industry placements and external career coaches. • Signpost industry engagement opportunities to ECRs. **Industry** • Data sharing for developing collaborative program participation and collaboration. • Industry associations/peak bodies in both countries host events to promote new research collaborations with universities **Facilitation platforms – ARCH-India** • Co-designed professional development modules and micro-certifications for industry research hosted for ECRs and MCRs.

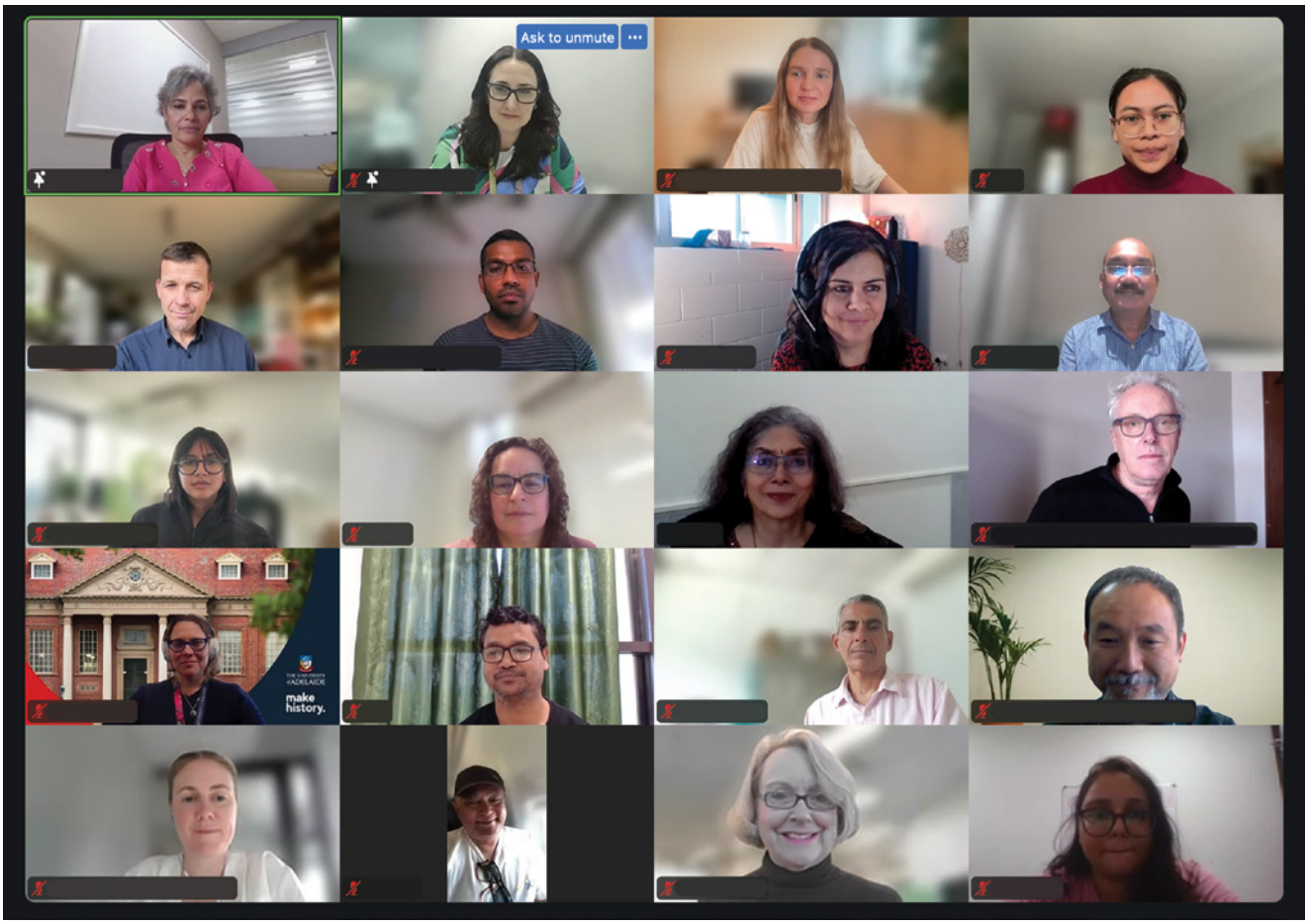
TERI-Deakin Nanobiotechnolgoy Centre. Image: Deakin University

THEMATIC CASES

The Framework includes four thematic cases that illustrate how research collaboration between Australia and India can be promoted, supported, and translated into impact in areas of shared national and bilateral priority. The interdisciplinary themes selected – Energy Transitions and Climate Change Resilience; Advanced Manufacturing Technologies; Cybersecurity and Digital Governance; and Sustaining Healthy Communities – reflect areas in which both countries are already investing to advance socio-economic growth and technological capability. These cases are not intended to represent the full scope of bilateral research priorities. They are provided as examples only, and there are many other emerging and established fields in which Australia-India research collaboration can continue to grow.

Each section has been authored by the thematic co-leads who convened and led the related workshops, ensuring that the insights reflect expert perspectives. Each case follows a common structure:

1. Current landscape summarising the existing state of collaboration in both countries.
2. Five-year action areas.
3. Impact measurement tables demonstrating how enhanced cooperation can be implemented and measured.
4. Case studies, highlighting existing collaborations and best practices.



Online participants in the Sustaining Healthy Communities Workshop. Image: Australia India Institute

ENERGY TRANSITIONS AND CLIMATE CHANGE RESILIENCE

Professor Frank Bruno & Professor Dharam Buddhi[1]

CURRENT LANDSCAPE

Australia and India are rapidly decarbonising while safeguarding affordability, reliability, and economic growth. Australia already sources approximately 40% of its electricity from wind and solar and is positioning itself as a renewable-energy superpower through green minerals and clean-industry expansion. India is scaling to 500 of GW non-fossil capacity by 2030 while meeting surging demand, strengthening grids, and managing costs and import dependencies.

Both nations share challenges: integrating high variable renewable energy at scale; ensuring a just transition in coal regions; aligning standards and supply chains; deploying long-duration storage; decarbonising heat and industry; enabling resilient, low-carbon cities; and closing skills gaps at speed. These are inherently collaborative problems, with complementary strengths: Australia's resource base, systems experience, and research depth; India's market scale, manufacturing momentum, and implementation speed.

Bilateral collaboration already spans policy, research, and deployment. Flagship enablers include the AISRF; CoEs such as National Centre for Photovoltaic Research and Education (NCPRE) at Indian Institute of Technology Bombay (IIT Bombay) and the NSW Decarbonisation Innovation Hub; and multilateral anchors like the International Solar Alliance (ISA).

Key government actors include Australia's DE; Department of Climate Change, Energy, the Environment and Water; Australian Renewable Energy Agency (ARENA); Commonwealth Scientific and Industrial Research Organisation (CSIRO); and state energy agencies running Renewable Energy Zones, hydrogen hub programs, and grid-flexibility or buildings trials that can host bilateral pilots; and in India, the Ministry of New and Renewable Energy, Department of Science and Technology, Ministry of Electronics and Information Technology, National Institution for Transforming India (NITI Aayog) (the national policy think tank), and state nodal agencies.

Industry participation is broad, from grid companies and electricity distribution companies to original equipment manufacturers (OEMs), mining and minerals processors, and clean-tech SMEs and startups. University leadership is strong across University of New South Wales (UNSW), Australian National University (ANU), University of Queensland (UQ), University of South Australia (UniSA), Indian Institutes of Technology (IITs) – Delhi, Bombay, Madras – Indian Institute of Science (IISc) and others, with multiple joint PhD and mobility schemes.

Australia's national priorities emphasise grid integration, long-duration storage, clean-industry and green minerals, and built-environment decarbonisation. India prioritises affordable expansion of renewables, domestic manufacturing, grid flexibility and demand shifting (e.g. smart metering), storage, green hydrogen, and clean industry – while managing social and regional transition.

The areas of clear overlap are: storage (electrochemical and thermal), grid orchestration and forecasting, flexible demand, green hydrogen and process heat, circular economy for energy materials, low-carbon buildings and cities, and standards aligned to accelerate trade and deployment.

Solar panel project. Image: Unsplash

1 Professor Frank Bruno, South Australian Chair in Energy; Research Professor, Future Industries Institute, University of South Australia; SA Node Leader, RACE for 2030 CRC (Australia)

Professor Dharam Buddhi, Vice Chancellor, Uttaranchal University Dehradun, India; Energy Storage Specialist (India)

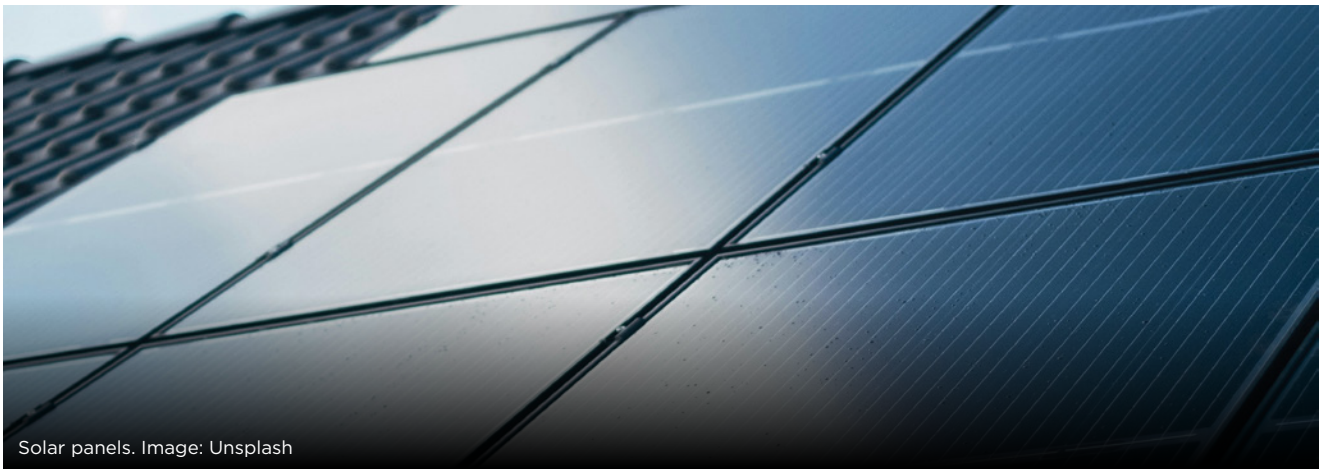
FIVE-YEAR ACTION AREAS

FOCUS AREA	KEY PRIORITIES
Grid flexibility at scale	Forecasting; inverter-based resource stability; demand shifting (industrial, agricultural, and behind-the-meter); and market design that values flexibility.
Long-duration storage portfolios	Thermal energy storage (TES) for industry/buildings; pumped hydro optimisation; flow batteries; hybrid storage architectures; bankable models for seasonal shifting.
Industrial decarbonisation & green heat	High-temperature solar-thermal and electrification pathways; integration of TES with hydrogen and ammonia; advanced heat pumps; process intensification; improved frameworks for measuring and verifying embodied carbon and indirect supply-chain emissions.
Green hydrogen systems	Water sourcing/pretreatment (including brine resource recovery); system integration with renewables and waste heat; safety and standards, early offtake models for fertilisers, steel, and chemicals.
Circular economy for energy systems	Photovoltaics (PV), battery, and wind blade recycling; critical-minerals recovery; secondary use of energy materials; and the development of shared standards and end-of-life stewardship schemes to enable safe, efficient bilateral trade and recycling between Australia and India.
Resilient, net-zero buildings and cities	Codes and design for hot climates; passive cooling; rooftop PV+storage orchestration; district energy with TES; cool materials; urban microgrids.
Just transition & regional development	Community-centred transition models for coal regions; workforce pathways; local manufacturing of key components to reduce import dependence and diversify supply.
Standards, testing, and certification	Jointly developed protocols for PV; storage (including TES); hydrogen safety; circularity metrics; and performance guarantees to de-risk procurement and finance.

CASE STUDY

ANU–INDUSTRY SOLAR-THERMAL TRANSLATION WITH SUNRISE CSP & ITP

Decades of research at the Australian National University on high-temperature solar concentrators led to commercial demonstration projects in India through collaboration with Sunrise CSP, supported by ITP Thermal and the International Solar Alliance. This partnership turned university research on efficient solar receiver designs into practical systems manufactured and deployed in India. These systems are now being used to supply steam and cooling for industrial applications, showing how solar energy combined with thermal storage can reduce the use of fossil fuels in industry. Clear measurement and verification methods and modular system designs helped make the projects attractive to investors and suitable for different climates.



Solar panels. Image: Unsplash

HOW TO MEASURE IMPACT

TIMEFRAME	PROMOTE	SUPPORT	TRANSLATE
Short-term (1-2 years)	**Stakeholders:** • ARCH-India; DE (Aus); MNRE/ DST (India); universities/HEI; industry. **Activities:** • Targeted seed and mobility micro-grants (A$25–75k) pairing Australian and Indian principal investigators around the priority topics – fast-turn calls co-funded by national research and energy agencies (e.g. Australia's DE; India's MNRE and DST), with industry in-kind support. • Quarterly innovation workshops hosted through ARCH-India – fast-paced, hands-on sessions where researchers, industry, and policymakers team up to shape new project ideas and develop 6–12-month action plans. • ECR on-ramp: monthly online ECR fora (pitch sessions, matchmaking), proposal bootcamps, and short exchanges embedded in active labs/centres.	**Stakeholders:** • Universities; ministries; centres/ hubs; industry partners. **Activities:** • Career development pathways for early- and mid-career researchers, including named fellowships, short visiting placements in partner institutions, and mentoring from experts in policy, industry, and commercialisation to help turn research ideas into real-world applications. • Shared infrastructure MOUs (test rigs, thermal labs, buildings labs, hydrogen/water systems, circularity/analytics) to reduce duplication and accelerate replication.	**Stakeholders:** • Industry; utilities; standards bodies. **Activities:** • Early industry co-design of pilot concepts. • Define pilot-site performance metrics and data-sharing protocols. • Conduct rapid techno-economic assessments (TEA) for shortlisted pilots. • Secure in-kind contributions from industry and utilities.
	Indicators: • 10 seed/mobility micro-grants awarded; 5 themed "collab sprints"; >100 ECRs engaged on ARCH-India.	**Indicators:** • 15 joint HDR/ECR exchanges (≥40% women); 5 shared-infrastructure MOUs; 10 joint research papers published.	**Indicators:** • Three site-selected pilots with signed MOUs. • Common pilot key performance indicators (KPIs) agreed and used by all partners. • Rapid TEA summaries completed for all selected pilots. • Industry in-kind commitments secured for at least 50% of pilot activities.

CASE STUDY

AUSTRALIA–INDIA SOLAR TASKFORCE INITIATIVE

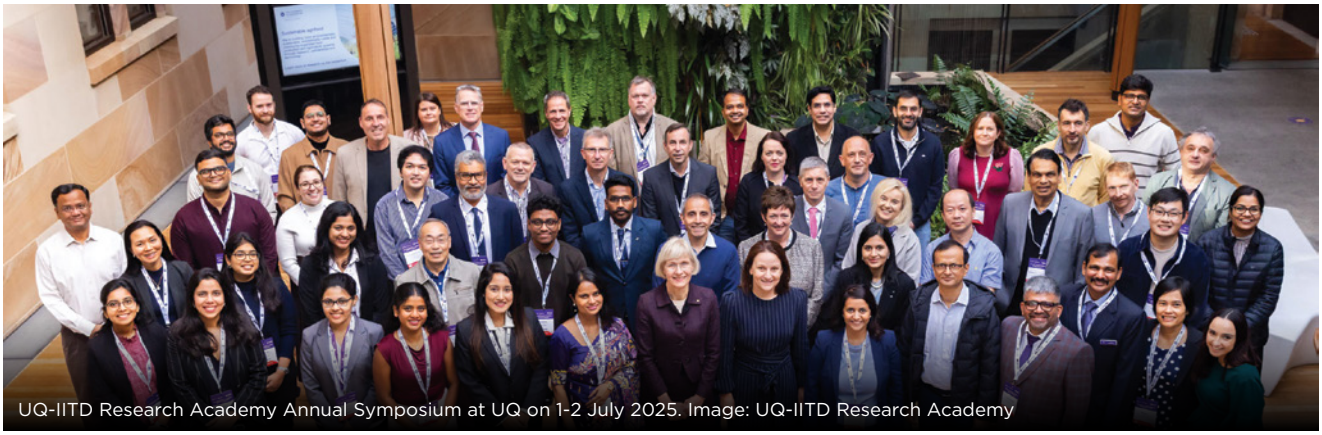
The Australia–India Solar Taskforce, co-chaired by UNSW's Professor Renate Egan and Professor Anil Kottantharayil, IIT Bombay together with Mr Alok Kumar of India's Ministry of Power, exemplifies how high-level bilateral coordination can rapidly catalyse cross-sector collaboration. The Taskforce mapped joint priorities in solar manufacturing, workforce development, and grid integration, leading to concrete outcomes such as new university-industry partnerships and shared recommendations for education and innovation funding. The initiative demonstrates that targeted bilateral forums backed by ministerial engagement can accelerate new partnerships and policy alignment across research, training, and deployment.

TIMEFRAME	PROMOTE	SUPPORT	TRANSLATE
Medium-term (2-4 years)	**Stakeholders:** • ARCH-India; hubs; ministries; industry associations. **Activities:** • Bilateral Focus Hubs (virtual first) for: Grid Flexibility; Long-Duration Storage; Industrial Heat & Hydrogen; Circular Energy Materials; Net-Zero Buildings. Each hub curates datasets, standards work, and industry challenges, and runs annual problem-driven hackathons. • Shared testbeds & data rooms: open datasets for grid events, storage cycling, building performance in hot climates, and circularity life-cycle assessment (LCA) baselines.	**Stakeholders:** • Universities; funding agencies; hubs. **Activities:** • Multi-year program grants (36–48 months) layered on early wins, with matched industry in-kind and explicit TRL milestones for pilots in India and Australia. • Joint PhD pathways linked to the Focus Hubs, offering co-supervised research degrees and short-term placements in partner labs or industry settings (e.g. utilities or energy distribution companies), with travel and living support to ensure equitable participation. • Trusted online platforms through ARCH-India featuring verified researcher profiles, partner-matching tools, upcoming funding opportunities, and a shared results library for datasets and pilot outcomes.	**Stakeholders:** • Standards bodies; regulators; financiers; venture partners. **Activities:** • ARCH-India impact gallery: concise pilot pages (site, TRL, partners, KPIs, contacts) and investor days focused on offtake opportunities in India/Australia. • Community & regional impact: Practical strategies for supporting coal regions through a fair transition to clean-energy industries, developing agri-energy solutions such as solar-thermal drying and cold-chain systems, and strengthening municipal water-energy resilience.
	Indicators: • Annual bilateral challenge calls in 3 priority areas; >300 researchers in directory; two living-lab sites funded; 2 open datasets released (grid/storage; buildings).	**Indicators:** • 2 Joint Focus Hubs established; 50+ joint PhD/ECR placements completed; 10 multi-year program grants under way; shared data rooms with 10 curated datasets.	**Indicators:** • 5 pilots commissioned; 2 standards or technical guidelines adopted/recognised bi-nationally; commercialisation pathways initiated for emerging spin-out opportunities.

CASE STUDY

IIT DELHI – UNIVERSITY OF QUEENSLAND STRATEGIC PARTNERSHIP

A well-established partnership between IIT Delhi and the University of Queensland demonstrates how joint PhD programs and structured governance can sustain long-term research collaboration. The UQ-IITD Research Academy's model of co-supervision, doctoral mobility, and aligned research priorities in areas such as net-zero pathways has fostered ongoing joint projects and publications. Governance is overseen by joint academic boards and an external advisory council that includes academic and industry leaders, supported by shared IP frameworks and opportunities for industry engagement through embedded placements and collaborative projects.



UQ-IITD Research Academy Annual Symposium at UQ on 1-2 July 2025. Image: UQ-IITD Research Academy

TIMEFRAME	PROMOTE	SUPPORT	TRANSLATE
Long-term (5 years)	**Stakeholders:** • ARCH-India; Department of Education (Australia); MNRE/ DST (India); universities/HEIs; industry; ministries; centres/ hubs; utilities; standards bodies; funding agencies; regulators; financiers; venture partners. **Activities:** • Pilot "Living Labs" across 2–3 sites (e.g., industrial parks, university precincts, agri-energy communities) demonstrating TES, demand response, hydrogen/water systems, and circularity pilots with measurement frameworks accepted by both national regulators.	**Stakeholders:** • Stakeholders: Universities; ministries; industry consortia. **Activities:** • Standards & IP toolkits: bilateral template Non-Disclosure Agreements (NDAs), Material Transfer Agreements (MTAs), background/foreground IP matrices, and field-trial data-sharing clauses that protect publication timelines and commercial options.	**Stakeholders:** • Industry; utilities; governments; investors. **Activities:** • Bankability packages: Reliable systems for measuring and confirming project performance, along with standard contracts, risk registers, and operating models that give investors confidence in both countries. • Bilateral IP & data frameworks that enable open testing while protecting commercial interests, allowing partners limited exclusive use of new technologies for an agreed period, along with clear rights to field-trial data and fair royalty arrangements. • Policy & standards: grid flexibility metrics, TES/hydrogen safety and performance protocols, circularity/recycling standards to unlock finance and procurement. • Commercial pilots: industrial heat decarbonisation (solar-thermal + TES), green hydrogen with integrated water systems, precinct-scale demand response, net-zero building retrofits in hot climates.
	Indicators: • 5 operational living-labs; bilateral participation embedded in major national calls (annual line-items).	**Indicators:** • 150+ ECRs/HDRs trained through joint pathways; at least 5 enduring institutional partnerships with renewal.	**Indicators:** • 5 deployments beyond pilot stage; documented just-transition outcomes (jobs/re-skilling) in 2 regions.

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ADVANCED MANUFACTURING TECHNOLOGIES

Professor Mohan Yellishetty & Mr Rajat Verma[2]

CURRENT LANDSCAPE

Australia and India are uniquely positioned to co-create the next wave of advanced manufacturing by harnessing Australia's rich resource base and technological expertise, and India's scale, cost-effective manufacturing capacity, and rapidly expanding domestic demand – all bound together by both countries' scientific and engineering strengths. Both governments are signalling intent through policies and programs that emphasise resilient, transparent supply chains and net-zero industry. This complementarity is most visible in critical minerals advanced processing, clean-tech value chains, batteries, semiconductors, and other advanced materials, where supply security, low-carbon production, and circularity have become strategic priorities for both nations.

Institutional linkages are maturing through the IITB-Monash Research Academy, CSIRO's India-Australia partnership in critical minerals, and dedicated bilateral hubs (IIT Hyderabad and Monash); and growing industry engagement through companies spanning mining, recycling, and semiconductors. The AIRCF workshop reflected these priorities, moving from policy and partnerships to materials innovation, circularity, and digital and low-carbon manufacturing – the junctions where bilateral value can be created fastest.

Cross-sector collaboration is already underway across government, labs, and firms – illustrated by initiatives that mobilise academia-industry-government dialogue around shared challenges in the sector – extraction selectivity, low-carbon processing, recycling logistics, value added products and policy harmonisation.

AUSTRALIA'S STRENGTHS	INDIA'S STRENGTHS
SCIENCE AND ENGINEERING CAPABILITIES	
World-class Mining, Equipment, Technology and Services (METS) capabilities	Scale in downstream processing and manufacturing
Research infrastructure	Vast market demand for electric vehicles (EVs), grid storage, and electronics
Minerals exploration, beneficiation, process intensification, techno-economic and environmental, social, and governance (ESG) assessment	Process scaling and cost-effective manufacturing
Emerging battery and semiconductor materials production	Rapidly expanding advanced materials and clean-tech ecosystem

CASE STUDY

TRANSLATING INNOVATION INTO GREEN MINING IMPACT

The Centre for Mine Waste Biotechnology in Canada offers an instructive model for translating research into impact. Established by the Mining Innovation Rehabilitation and Applied Research Corporation in Sudbury, the Centre provides pilot-scale facilities for bioremediation and bioleaching, bridging the gap from lab to commercial adoption. The Centre is industry-led, co-supported by universities, and structured around a membership model that engages companies, governments, and communities. By offering shared infrastructure, consulting services, and training, the Centre has accelerated the adoption of green mining technologies while reducing environmental liabilities and unlocking billions in mineral value from waste.

2 Professor Mohan Yellishetty, Resources Engineering, Monash University; Founder, Australia–India Critical Minerals Research Hub
Mr Rajat Verma, Founder and CEO, LOHUM Cleantech, India

FIVE-YEAR ACTION AREAS

FOCUS AREA	KEY PRIORITIES
Low-carbon, digitally enabled processing of critical minerals	Joint R&D on electrified, renewable-powered unit operations, reagent recycling, advanced separations (including bio-leaching and bioprocessing), and plant-wide optimisation using artificial intelligence (AI), Internet of Things (IoT), and digital twins. The goal: *verifiable reductions in energy/emissions per tonne and auditable traceability from ore to active material.*
Circular design and high-value recycling	Bilateral pilots in urban mining, end-of-life battery and e-waste recovery, and design-for-disassembly standards, coupled with techno-economic and ESG assessment to de-risk industrial uptake. The workshop discussions repeatedly elevated circularity as a primary lever for resilient supply.
Battery and semiconductor materials innovation	Co-development of anode and cathode precursors, solid electrolytes, binders and solvents, and packaging and interconnect materials tuned to India's manufacturing environment and Australia's materials know-how paired with reliability and yield analytics. The semiconductor opportunity lies in specialised materials, packaging and test, and design IP aligned to trusted supply chains, building on the industry's high R&D return-on-investment (ROI) signals.
Standards, certification, and data for trusted supply chains	Harmonised LCA methods, emissions and provenance reporting, and interoperable data architectures to satisfy export markets and investor requirements. Recommendations from the Critical Minerals Symposium emphasise standards alignment and shared IP and/or knowledge assets as force multipliers.
Translation platforms and talent pipelines	A joint CoE modelled around Cooperative Research Centre (CRC)-style vehicle to integrate problem statements from industry with executable workplans (technology readiness levels [TRL] 3–7), supported by bilateral fellowships, industry PhDs, and joint testbeds that fast track the path from lab to pilot. This model explicitly targets valley-of-death risks while building enduring human capital across both systems.
CoE on critical minerals	The IIT Hyderabad Critical Minerals Symposium recommended the establishment of a Joint CoE modelled on CRC principles to translate industry-defined problems into pilots, featuring aligned standards and certifications; joint funding mechanisms; and talent pipelines via joint degrees, industry-embedded PhDs, and mobility schemes.
R&D as the special differentiator	Accelerating global growth in semiconductors, and specialised sectors with high R&D intensity present fertile opportunities for bilateral focus. This includes the identification of discrete nodes (equipment, materials, design tools, reliability/testing, packaging) where Australia-India can co-develop capabilities linked to downstream demand (EVs, renewables, defence-grade electronics).

HOW TO MEASURE IMPACT

TIMEFRAME	PROMOTE	SUPPORT	TRANSLATE
Short-term (1-2 years)	**Stakeholders:** • AII, ARCH-India, universities Ministries of Education & Mines, industry associations. **Activities:** • Bilateral seed funding for ECRs enabling international exposure and collaboration. • Targeted workshops on themes such as circular design, digital manufacturing, and low-carbon processing. • Networking events for ECRs to foster long-term peer-to-peer linkages. • ARCH-India to curate matchmaking databases of researchers and companies.	**Stakeholders** • Universities, research hubs (Australia–India Critical Minerals Research Hub (AICMRH)), industry partners, ministries, professional societies. **Activities:** • A whole-of-ecosystem approach. • Aligned government funding schemes and matched grants for joint projects. • Commitment to co-funding by industry partners. • Embedding industry linkages into doctoral training. • Convene neutral spaces for knowledge exchange and ensuring ESG and community perspectives are embedded in research agendas.	**Stakeholders:** • Industry, ministries of science/ technology, CSIRO, Council of Scientific and Industrial Research (CSIR), policy think tanks. **Activities:** • Stakeholders must provide *co-*funding for pilot-scale facilities, establish joint technology demonstration projects. • Governments can accelerate translation by offering tax incentives, procurement pathways, and bilateral innovation funds. • Commence groundwork for launching joint CoE, including partnerships and funding model. • Industry must lead in identifying market-ready applications. • The ARCH-India platform can play a pivotal role in showcasing research outcomes to policymakers, investors, and global partners.
	Indicators: • 2-3 bilateral seed grant schemes launched for ECRs; 3-5 joint online workshops/ bootcamps (topics: digital manufacturing, circular economy, critical minerals); ARCH-India researcher/industry matchmaking database live; ≥30% participation by women/ ECRs.	**Indicators:** • 20+ ECRs in bilateral PhD/ joint doctoral programs; 2 joint industry–academic mobility pilots; framework MoU for bilateral postdoc fellowships; creation of mentoring program linking ECRs with senior industry/government leaders.	**Indicators:** • Draft bilateral standards roadmap (traceability, recycling, lifecycle emissions); 1–2 pilot projects identified for joint demonstration (battery recycling, semiconductor packaging); ARCH-India publishes 2 impact briefs for government/industry.

Mining site. Image: Unsplash

TIMEFRAME	PROMOTE	SUPPORT	TRANSLATE
Medium-term (2-4 years)	**Stakeholders:** • Universities, AII, industry associations, funding agencies (ARC and DST). **Activities:** • Bilateral PhD mobility programs, co-supervised projects, and short-term research exchanges embedded in industry settings. • Hosting annual bilateral research showcase events. • Universities and industry providing toolkits on IP, funding schemes, and standards to help researchers navigate bilateral projects more effectively.	**Stakeholders:** • Industry R&D labs, CSIRO, CSIR, ministries of mines and energy. **Activities:** • Governments harmonising regulatory pathways for clean-tech manufacturing and critical minerals processing. • Industry co-defining problem statements, providing access to data, validation and pilot facilities, and supporting the translation of research into commercial trials. • Universities and industry co-developing curricula on digital manufacturing and circular economy, and create shared IP and data frameworks. • Building joint roadmaps for battery, semiconductor and other advanced materials, demonstration projects in circular manufacturing, and harmonised standards for lifecycle emissions and traceability. • ARCH-India curating a database of ongoing projects according to their current TLRs and creating a digital collaboration space for ECRs.	**Stakeholders:** • Industry, government regulators, innovation agencies. **Activities:** • Universities and research institutes provide the R&D backbone for industry-led commercialisation projects. • Governments launch joint CoE. • Ensure regulatory alignment that reduces barriers to commercialisation. • Develop bilateral IP frameworks that balance protection with accessibility. Models can include: joint IP ownership structures; revenue-sharing mechanisms; clear pathways for licensing to start-ups and SMEs; and community-benefit clauses where technologies reduce environmental or social impacts. • ARCH-India can host an online portal highlighting success stories, publish impact briefs for ministries and industry associations, and organise investor-researcher roundtables.
	Indicators: • 50+ bilateral ECRs engaged in collaborative projects; ≥5 structured bilateral summer schools/bootcamps delivered; establishment of thematic working groups on semiconductors, battery materials, circular economy.	**Indicators:** • 3–4 joint testbeds/pilot facilities operating; ≥10 industry-linked doctoral projects co-supervised across both countries; ≥5 joint funding proposals to government/industry; ≥3 long-term MoUs between companies and universities.	**Indicators:** • ≥3 collaborative technologies advanced to TRL 5–7; joint IP frameworks piloted (with 2–3 licensing/venture deals); investor–researcher roundtables hosted annually by ARCH-India; 2–3 policy briefs feeding into Net Zero Industry Strategy and Viksit Bharat.

TIMEFRAME	PROMOTE	SUPPORT	TRANSLATE
Long-term (5 years)	**Stakeholders:** • Governments (Australia, India), ARCH-India, AICMRH, universities. **Activities:** • Coordinated action from government, industry, academia, and research intermediaries. Key stakeholders include the Ministry of Mines and Ministry of Science & Technology (India), Department of Education and CSIRO (Australia), leading universities such as Monash, Deakin, IITs and CSIR institutes, and industry partners spanning critical minerals, recycling, batteries, semiconductors and advanced materials (e.g., Lohum, Manhari Metals, Intel). • Mobilise networks, align funding streams, and establish shared research priorities. • ARCH-India can become the trusted bridge that reduces transaction costs, builds confidence, and nurtures the next generation of Australia–India advanced manufacturing leaders.	**Stakeholders:** • Industry consortia, ministries, joint CoE, non-governmental organisations (NGOs). **Activities:** • Long-term researcher mobility, with ECRs and PhDs participating in joint doctoral programs, industry internships, and co-supervised research embedded in company or government labs. • Existing tools that can be leveraged include bilateral research hubs (e.g., AICMRH), CSIRO–IIT partnerships, and India's National Critical Minerals Mission. These provide trust, coordination, and proof points for scaling. • ARCH-India can host annual bilateral review forums to track progress, showcase outcomes, and adjust priorities, thereby ensuring collaborative projects not only endure but deliver tangible outcomes for both nations. • ARCH to offer structured mentoring, mobility funding, and industry matchmaking services.	**Stakeholders:** • CoE, industry, investors, regulators, ARCH-India. **Activities:** • Upscale pilot initiatives and joint CoE initiatives, with a focus on sustainability. • Ensure transparency in IP agreements to build trust among partners and encourage greater industry participation. • ARCH-India can help attract venture capital, scale collaborative start-ups, and strengthen Australia–India's role as a hub for clean-tech manufacturing solutions.
	Indicators: • Bilateral CoE on Critical Minerals & Advanced Manufacturing established; ≥200 researchers engaged across networks; strong participation from SMEs/ start-ups.	**Indicators:** • ≥50 bilateral PhDs/ECRs graduated with industry placements; 3–4 joint patents filed; ≥5 mature industry–academia consortia sustained; joint curricula modules in universities.	**Indicators:** • ≥5 commercialised technologies or start-ups launched; bilateral CoE recognised as global model (CRC-style); measurable reductions in emissions/resource intensity in joint pilot industries; clear evidence of impact on trade flows, investment, and policy frameworks.

CASE STUDY

STRENGTHENING BILATERAL PARTNERSHIPS TO BUILD RESILIENT CRITICAL MINERALS SUPPLY CHAINS

"Science is the engine of process, but collaboration is the fuel." The words of Shri Bhatti Vikramarka Mallu, Deputy Chief Minister of Telangana, at the Australia–India Critical Minerals Research Hub symposium, capture the importance of partnership in advancing Australia–India research collaboration. The symposium, held in Hyderabad in January 2025, brought together researchers, policymakers, and industry leaders from both countries to explore shared priorities across exploration, mining, and processing for critical minerals. The symposium produced a set of actionable recommendations to strengthen Australia–India collaboration, including proposals for an Indo-Pacific Critical Minerals Alliance to create shared intellectual property libraries to support R&D investments, and the establishment of a CoE on critical minerals. A Memorandum of Understanding was also signed between IIT Hyderabad and Singareni Collieries Company Limited, demonstrating state-level support for continued cooperation in the critical minerals sector. The two-day event highlighted how cross-sector engagement can drive growth and innovation in a rapidly evolving global resources landscape.

Australia-India Critical Minerals Research Hub symposium, Hyderabad 2025. Image: Monash University

CYBERSECURITY AND DIGITAL GOVERNANCE

V. Sridhar, Balaji Parthasarathy, Chris Leckie & Serene Ho[3]

CURRENT LANDSCAPE

The bilateral relevance of digital governance and cybersecurity is underscored by the growing tension between the use of digital technologies to democratise governance and the parallel challenge of keeping data secure to ensure the privacy of citizens. To resolve this tension there is a need for cooperation between the state, the private sector and academia to ensure innovative outcomes are equitable and just.

This focus aligns with Priority 5 of Australia's National Science and Research Priorities (2024) and the Indian Ministry of Electronics and Information Technology's priority areas of digital governance, R&D in cyber security, and AI & emerging technologies. The goal is to develop secure and resilient digital systems and critical infrastructure for public services and governance, addressing new avenues for joint research on cyber scams, misinformation, and disinformation.

CYBERSECURITY

An estimated 75 per cent of the world's digital talent is located in India, with the country's technology and technology-enabled services industry growing rapidly. This, combined with Australia's booming quantum computing industry, quality assurance and research prowess, creates fertile ground for bilateral collaboration to train future cybersecurity workforces (RMIT, 2023).

Studying the dual role of artificial intelligence in cybersecurity is another shared priority between Australia and India. With the rapid proliferation of AI, this includes exploration of the unique changes faced by fraud detection as commercial models can be used to enhance the capabilities of malicious actors. Ongoing work in both countries seeks to examine how AI can enable cyber security operations that ensure data governance is handled robustly.

A central element of the *2023-2030 Australian Cyber Security Strategy* is cooperation with international partners to uphold international law and norms of responsible state behaviour in cyberspace. The Australia-India Framework Arrangement on Cyber and Cyber Enabled Critical Technologies Cooperation (Framework Arrangement) is a flagship step in that direction, driven by efforts to align cybersecurity research and outcomes for mutual benefit.

The Australia-India Cyber and Critical Technology Partnership (AICCTP), established in 2020, is aimed at mobilising bilateral collaborations on cyber and critical technology issues, through scaling institutional, research, industry, and government linkages. The AICCTP grants program funds collaborative research projects that advance shared understanding of ethical frameworks, best practices, and technical standards for cyber and critical technology. Since its establishment in 2020, AICCTP has run four grant rounds and funded 19 collaborative research projects on cyber and critical technology.

DIGITAL GOVERNANCE

In Australia, initiatives such as the Digital Twin Victoria platform illustrate the potential for digital systems to deliver smarter and faster governance. The platform includes a digital cadastral to mark property parcels, automate land valuation, and the process of issuing building approvals and permits. The platform is also connected to the Smart Cities program. Ties to local universities have led their postgraduate students to measure climate impacts with a rich, localised environmental sensor network.

The platform has been instrumental in highlighting the value of digital governance for land use, with the Government of Tamil Nadu (TN) in India adopting best practices from it. Similarly, TN has been inspired by New South Wales, which has brought in blockchain and digital wallets for certificates, licenses, and incentive vouchers. TN has also turned to Western Australia to ensure that future technology development happens within a framework that integrates public data and platforms securely and efficiently, and sent staff from its IT department for training. Further, the state is trying to obtain permission for the University of Western Australia to establish a campus to offer integrated courses.

In the Indian context, the Modular Open Source Identity Platform (MOSIP), established at International Institute of Information Technology Bangalore (IIIT-B) in 2018, is a research and implementation effort to support governments across the world to provide their citizens with an official identity. A robust and secure ID system is crucial for any nation to proceed with its digital transformation. A foundational national ID system helps governments build effective civil registries, and service delivery systems, to serve the population in various domains such as disaster relief, climate resilience, establishing new businesses, to delivering healthcare, and education.

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FIVE-YEAR ACTION AREAS

FOCUS AREA	KEY PRIORITIES
Needs-based research priorities	Define research directions that are clear on priorities and supported by transparent indicators for measuring impact on the community. Policy changes alone are not enough – the gap between rules and their implementation/acceptability needs further consideration.
Scaling cybersecurity solutions	Develop collaborative frameworks and mechanisms that go beyond threat mitigation to build resilience, responding to the growing urgency around cyber threats and the rise of AI-enabled threats that erode trust.
Federated Threat Prediction AI Model	A Federated Threat Predication AI model for the Indo-Pacific could predict emerging attack campaigns targeting both nations – without necessarily sharing raw, sensitive data.
Digital Twin Sandbox	A high-fidelity, cloud-based Digital Twin Sandbox virtualising operational technology (OT) / industrial control system (ICS) environments of key critical infrastructure sectors (e.g. power distribution, LNG processing, port logistics).
Open-Source AI Compliance Toolkit	Develop an open-source toolkit to build and deploy AI systems and fraud detection tools that are verifiably compliant with both nations' regulations by sharing existing datasets for training and testing, or creating new ones.
Bilateral regulatory collaboration	Collaboration can also be shaped around shared understanding and development of regulatory initiatives that could apply in a bilateral context. This needs to be preceded by mutually designed rules and regulations.

CASE STUDY

OPENING DOORS TO AUSTRALIA-INDIA COLLABORATION: DR. PREETI MUDLIAR

Dr. Preeti Mudliar's entry into cross-border research collaboration began with her selection for the inaugural Women in Tech Fellowship in 2024, awarded by the Australian Consulate Bengaluru and the AII. For the Bengaluru-based researcher, this was her first opportunity to engage with Australian academics on her research, which focuses on how digital infrastructures shape welfare access and inclusion. This initial engagement paved the way for her selection as a Maitri Fellow, a program supported by the Centre for Australia-India Relations designed to enable leading policy researchers to undertake secondments with Australian and Indian organisations. Through the Maitri Fellowship program, Dr. Mudliar is hosted by the AII, where she is studying what inclusion means in the emerging world of digital public infrastructures (DPIs). Drawing on her fieldwork in India, including insights from the Aadhaar biometric digital ID database, she offers insights into the complications DPIs create for citizenship and welfare. These challenges, she notes, are not unique to India and may also inform Australia's approach to building and implementing DPIs. Her experience highlights how targeted fellowships open doors for researchers not yet engaged in Australia-India collaboration, providing pathways to meaningful international partnerships.

Dr Preeti Mudliar (right) pictured with Australia India Institute CEO, Lisa Singh. Image: Australia India Institute

HOW TO MEASURE IMPACT

TIMEFRAME	PROMOTE	SUPPORT	TRANSLATE
Short-term (1-2 years)	**Stakeholders:** • ECRs, academia, researchers, industry. **Activities:** 1. Existing capabilities: » Joint seminars or short courses on emerging topics, such as AI for cyber security, critical infrastructure protection, digital identity management. 2. Priority challenges: » Promote a small number of high priority research challenges, which exploit existing capabilities » Identifying shared policy challenges in digital governance. • Potential opportunities: » Promote mechanisms for supporting joint research, e.g., examples of successful collaboration in the past, funding schemes that can support collaborative research » ARCH-India to host online networking/matchmaking events on specific priority research challenges.	**Stakeholders** • ECRs, academia, researchers, industry, government. **Activities:** • Supporting TLRs: » Seed funding for short-term projects that stimulates new ideas and new bilateral relationships, targeted at ECRs » Constitution of multi-disciplinary, multi-sectoral teams that include ECRs (preferably as leads) to senior researchers.	**Stakeholders:** • Industry, governments, academia, researchers. **Activities:** • Proof-of-concept of Digital Twins Platform • Students and researchers exchange between Australia and India • Patent cross licensing between start-ups in cyber security in Australia and India.
	Indicators: • Identified 2-3 existing capabilities in the public sector departments (education, healthcare), critical network infrastructure, and digital finance that can be shared.	**Indicators:** • Establishment of at least two academia-industry projects, one in cyber security and another in digital governance.	**Indicators:** • Delivery of at least one proof-of-concept demonstrator for Digital Twins.

Researchers involved in the Responsible AI for Net Zero project collaborating at one of the interactive workshops. Image: Swinburne University of Technology

TIMEFRAME	PROMOTE	SUPPORT	TRANSLATE
Medium-term (2-4 years)	**Stakeholders:** • ECRs, academia, researchers, industry, government. **Activities:** • Existing capabilities: » Identify existing data sets and testbeds that can be shared to encourage participation in these areas. • Priority challenges: » Develop trusted voice-based access to online services to support the needs of specific communities.	**Stakeholders:** • Researchers, governments, industry. **Activities:** • Supporting TLRs: » Introduce longer research programs targeting researchers with academic and/or industry partners » Increase numbers of jointly supervised PhD candidates » Develop research and/or industry reports highlighting learnings from comparative and collective case studies » Showcase new knowledge around governance of, and governance by, the digital.	**Stakeholders:** • Governments, researchers, industry. **Activities:** • Collaboratively work on short- and medium-term research projects. • Develop Australia-India Cyber security Observatory (AICO) for improving the cyber protection of both the countries. • Use ARCH-India to host Australia-India dialogues on cybersecurity and digital governance.
	Indicators: • Prepared and submitted at least two grant proposals for funding; at least two bilateral workshops with participation of stakeholders from both Australia and India, one each on digital governance and another on cyber security.	**Indicators:** • At least two case study reports delivered. Joint supervision or internships for at least two PhD students; exchange of at least 2 post doctoral fellows each from Australia and India.	**Indicators:** • At least one medium-term research project established with industry participation; collaborate with at least one university innovation centre each in Australia and India for commercialisation of ideas in digital governance and cyber security.

CASE STUDY

RESPONSIBLE AI FOR NET ZERO

The Responsible AI for Net Zero project explored how artificial intelligence (AI) can be deployed ethically to support Australia and India's clean energy transition. Led by Swinburne University of Technology, with partners IIT Palakkad, IIT Madras, Siemens Australia, and Maxbyte Technologies Singapore, the initiative was funded through the AICCTP. The project addressed both the opportunities and risks of using AI in the energy sector, focusing on new policy and guidelines for its ethical use. Three interactive workshops were held in Chennai, Gandhinagar, and Melbourne, engaging academics, energy professionals, policymakers, and industry leaders. These were complemented by a systematic literature review of AI use in Smart Energy Systems, which highlighted both innovation potential and vulnerabilities. Key findings emphasised the need to democratise data collection and the development of AI models, build accountability into AI outcomes, and introduce regulatory frameworks. The project also produced a roadmap to guide responsible AI adoption in the energy sector.

TIMEFRAME	PROMOTE	SUPPORT	TRANSLATE
Long-term (5 years)	**Stakeholders:** • Academia, researchers, industry, government. **Activities:** • Existing capabilities: » Collect and share new data sets, such as collections of deep fakes, which could promote participation and collaboration. • Priority Challenges: » Make joint submissions collaborative for research funding » Establish a "global watch" on cybercrime, which could collate examples of fraud, scams or deep fakes that have been observed in either country. • Potential opportunities: » ARCH-India to host collaborative events on specific challenge problems, such as hackathons or joint workshops.	**Stakeholders:** • Researchers, governments, industry. **Activities:** • Supporting Technology Readiness Levels (TLRs): » Establish joint CoEs » Promote research-based evidence to inform policy design » Advance new research priorities in next 5-year research plan to tackle new challenges.	**Stakeholders:** • Governments, industry. **Activities:** • Development of an Australia-India bilateral cybersecurity governance framework, especially to mitigate cross-border cyber threats. • Conduct joint cyber drills to detect vulnerabilities and develop response methods especially on critical infrastructure in both the countries.
	Indicators: • At least four outreach events held - two each in cybersecurity and digital governance, one of each in Australia and India.	**Indicators:** • Multiple policy submissions on cyber security and digital governance; CoEs to conduct periodic short-term programs for capability building in addition to hosting PhD students and post doctoral fellows in both Australia and India.	**Indicators:** • Delivery of a policy framework with participation from industry and government partners from both countries; have annual policy forums between Australia and India to formulate mutually compatible policies in digital governance and cyber security for use by governments, industry and academia.

CASE STUDY

DEVELOPMENT OF CO-CREATION PLATFORMS FOR ADDRESSING GLOBAL CHALLENGES

The Global Research Council (GRC) published a Statement of Principles on 'Co-Creation for Addressing Global Challenges' in 2025, where they define co-creation as "the process of the joint generation of added value between research, industry, public and civil society along all the phases of research and development (R&D), which is increasingly significant in the context of major transitions". To support this, the GRC recommends the development of "co-creation platforms" that foster the collective design, implementation, and evaluation of projects. These platforms should be designed to facilitate real-time collaboration, with features that support multilingual communication and virtual engagement.

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SUSTAINING HEALTHY COMMUNITIES

Emma George & Shailaja Tetali[4]

CURRENT LANDSCAPE

Sustaining healthy communities is a shared priority across Australia and India, and increasingly central to bilateral collaboration. In 2025, the World Health Organization (WHO) report highlighted that despite global consensus on the need to address social determinants of health equity, progress remains insufficient. Research that helps us build and sustain healthy communities has implications for policy and brings benefits to populations worldwide.

The WHO's (2025) operational framework for monitoring social determinants of health equity aligns with the United Nation's SDGs. It incorporates actions to tackle the underlying causes of health inequities, as well as links to health behaviours and access to health care. There are examples from this model relevant to sustaining healthy communities in both Australia and India.

At the 2nd India-Australia Annual Summit, the Prime Ministers of both countries reiterated their commitment to advancing a vision for a region that is free, open, inclusive, and resilient. In the context of sustaining healthy communities, this includes projects that address pandemics and disease, respond to natural disasters, and confront the threat of climate change. As trade and investment agreements mature, aligning economic growth with social capital and reducing poverty and health inequities will further advance development in both India and Australia.

On the ground, bilateral research collaboration is growing. ARCH-India has identified 72 individual researchers interested or involved in bilateral research collaboration whose primary research interest is in health. The Public Health Foundation of India collaborates with several Australia universities on projects addressing infectious disease, education, emerging health threats, interconnectedness of human-animal-environmental health, and social inclusion. Key government agencies involved span health, education, environment, social welfare, and foreign affairs in both Australia and India, reflecting the broad, cross-sectoral nature of collaboration in sustaining healthy communities.

Both countries are confronting layered and interconnected challenges to supporting healthy communities. Climate change presents one of the most pressing risks. In Australia, increases in temperature and the frequency, duration, and intensity of heatwaves, bushfires, drought, and floods are impacting health and the environment (CSIRO 2024). Similarly, India is experiencing more frequent, intense, and oppressive heatwaves, droughts and floods, which affect water availability, food production, and health systems (Khambete 2025). Climate stress and the resulting disasters have a direct impact on mental and physical health of individuals, families, and communities. The WHO (2025) advocates for intersectoral climate-related actions. Examples include expanding public transport, promoting sustainable agriculture practices, and supporting Indigenous communities in their stewardship of Country. Future research could focus on the social and infrastructural dimensions of extreme heat in India, including how healthcare systems, policymakers, and communities understand and respond to rising temperatures.

Research on disability and inclusion is another important area within efforts to sustain healthy communities. The University of Melbourne's Rapid Assessment of Disability, conducted across three Indian states, includes research, training, and the implementation of programs for low vision, blindness prevention and, community eye health promotion.

These examples reveal that research on sustaining healthy communities must address the underlying causes of health inequities while fostering social capital, inclusion, and participation. While the context for communities in Australia and India is different, the lessons learned can be shared. Vulnerabilities arising from disability, stigma, and the need to increase participation and inclusion represent valuable areas for future research.

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FIVE-YEAR ACTION AREAS

FOCUS AREA	KEY PRIORITIES
Interdisciplinary horizons	Prospective directions for global research on sustaining healthy communities are likely to be inter-disciplinary, with a broad scope of practice and can include a wide variety of research approaches and methodologies. The WHO's One Health Initiative is expected to improve the effectiveness of public health systems, contribute to agricultural production, and enhance disaster resilience and ecotourism. This approach is mapped to nine of the United Nation's SDGs. The Public Health Foundation of India has already established One Health research partnerships with the University of Sydney and the University of Canberra to integrate programs that address the health of humans, animals and the environment.
Sports and public health	Sport has also emerged as an effective platform for bilateral research engagement. The Prime Ministers of both Australia and India have underlined opportunities to strengthen ties through sport, with Australian investment in the 2032 Olympic Games expected to drive research into excellence and participation this area, while India is anticipated to pursue a future Olympic bid. The Centre for Australia-India Relations has identified a key priority for future research on activities that leverage Australia's experience in delivery Commonwealth and Olympic Games.
Disaster Response and Preparedness	Research to understand the experiences of communities during and following disaster, and identifying effective preparedness strategies, is vital in both countries. This must include a focus on climate stress and climate change and how it impacts health of individuals and communities. Co-designed research is often prioritised in this space. This approach ensures that research is situated within a local and relevant context and prioritises the knowledge and experience and practices of the community.
Inclusive policymaking	Both Australia and India have both enacted policies that promote equity and inclusion for Indigenous peoples, marginalised and minority groups. This work spans multiple departments and sectors including health, disability, education, justice, infrastructure, culture and arts, and sport. Evidence-based research on inclusion, equity and participation relates to the fair and equitable distribution of opportunities for social, political and economic participation.

Public health researcher Professor Nathan Grills works with E-Sanjeevani staff to train NGO workers supporting people with disabilities in using the telehealth platform. Image: University of Melbourne

HOW TO MEASURE IMPACT

TIMEFRAME	PROMOTE	SUPPORT	TRANSLATE
Short-term (1-2 years)	**Stakeholders:** • Industry partners, funding bodies, government departments. **Activities:** • Introduce seed funding for small-scale research projects, doctoral and postdoctoral work. • Opportunities for researchers to spend time in the field, within communities, to identify research priorities and preferred methods for research. • A structured funding model, with annual grant cycles. • Networking events or a conference showcasing the latest research on sustaining healthy communities.	**Stakeholders** • Stakeholders, universities, foundations, research institutes, academic leaders. **Activities:** • Senior university leaders to support doctoral and postdoctoral research through supervision and university or institute grant funded scholarships or fellowships. • Facilitate and incentivise connections across disciplines to enable partnerships for codesign.	**Stakeholders:** • ARCH-India. **Activities:** • ARCH-India to showcase short reports on community participation, research impact or implications for policy.
	Indicators: • Seed funding for small research projects.	**Indicators:** • Supervision of doctoral and postdoctoral researchers; Travel grants available to doctoral and postdoctoral researchers; Growing number of interdisciplinary projects; Community engagement through codesign.	**Indicators:** • ARCH-India to highlight short reports on community participation, research impact or implications for policy.

TIMEFRAME	PROMOTE	SUPPORT	TRANSLATE
Medium-term (2-4 years)	**Stakeholders:** • Communities, industry partners, funding bodies, government departments, ARCH-India. **Activities:** • Collaboration between researchers, institutes, organisations and government, with a focus on working with local communities. Projects can be localised to respond to community need with learnings applicable across the Asia-Pacific region.	**Stakeholders:** • Communities, universities, foundations, research institutes, academic leaders. **Activities:** • Access to travel grants and seed funding for doctoral and postdoctoral researchers. • Opportunities to learn through internships, training, and conferences across disciplines and countries. • Sharing research findings with communities through include reports, community events, creative works, storytelling, group discussion etc.	**Stakeholders:** • Communities, universities. **Activities:** • Research groups and institutes need to disseminate research findings to all stakeholders, including community, non-government organisations, and government, with recommendations for action.
	Indicators: • Evidence of collaboration with local community for codesign projects; ARCH-India networking.	**Indicators:** • Interdisciplinary training opportunities; Variety of research outputs include community dissemination.	**Indicators:** • Disseminate findings to all stakeholders with recommendations for action.

TIMEFRAME	PROMOTE	SUPPORT	TRANSLATE
Long-term (5 years)	**Stakeholders:** • Universities, funding bodies, government departments. **Activities:** • Establish new collaborations. • Complete seed funded projects. • Complete researcher training. • Secure larger grants and more complex interdisciplinary studies.	**Stakeholders:** • Universities, funding bodies, government departments. **Activities:** • Achieve support for codesigned research with local communities across every stage. • Build capacity of doctoral and postdoctoral researchers to undertake co-designed research. • Establish culturally appropriate mechanisms and quality standards for applying research findings across Australia, India and the region.	**Stakeholders:** • Universities, funding bodies, government departments. **Activities:** • Translating findings from research to practice and policy. • Implementing innovative models for inclusion and participation, scaled across geographies and communities.
	Indicators: • Researchers with established tracked record; Successful grant applications on interdisciplinary projects.	**Indicators:** • Findings have application for communities in Australia, India and the Asia-Pacific region; Codesign and strength-based research prioritised.	**Indicators:** • Research findings reviewed against Untied Nation's SDGs and the WHO operational framework for monitoring social determinants of health equity.

CASE STUDY

VIRTUCARE: TRANSLATING INCLUSIVE DIGITAL HEALTH DESIGN INTO PRACTICE

The VirtuCare project, led by the Nossal Institute for Global Health at the University of Melbourne, is translating co-designed, inclusive digital health models into practice in India. Building on lessons from telehealth expansion during COVID-19, VirtuCare works with people with disabilities, healthcare providers, and technology partners to ensure that emerging virtual healthcare systems are equitable and accessible. It adopts a twin-track approach to advance inclusion: first, by informing policy to ensure that new and existing virtual healthcare programs are accessible to people with disabilities; and second, by developing disability-specific tele-rehabilitation services that equip community-based inclusive development workers to deliver tailored, inclusive care. In partnership with eSanjeevani OPD – one of the world's largest government-led telehealth systems – VirtuCare is integrating inclusive design features that can inform similar efforts in Australia and beyond. The project demonstrates how co-designed research can deliver practical, system-level change through multi-stakeholder collaboration.

Aboriginal health workers receiving training in AI-assisted eye screening using an easy-to-operate fundus camera.
Image: The University of Notre Dame Australia

CASE STUDY

A GLOBAL MODEL FOR AI-DRIVEN EYE CARE IN REMOTE COMMUNITIES

Australia's University of Notre Dame, in collaboration with India's Aravind Eye Hospital, is using artificial intelligence to tackle preventable blindness in remote Indigenous communities. Funded by the AISRF, the initiative centres on the TeleEye Scan – an affordable, portable, TGA-approved eye screening system, developed by Notre Dame. The device uses artificial intelligence to instantly detect conditions such as glaucoma, macular degeneration, and diabetic retinopathy with up to 95% accuracy. In a recent trial coordinated by the Foundation for Indigenous Sustainable Health (FISH) and TeleMedC Australia, the TeleEye Scan was deployed in two remote Indigenous communities in Western Australia's Kimberley region. Among the 60 residents screened:

- About 50% had undiagnosed eye conditions.
- Ten required urgent treatment to prevent blindness.

The TeleEye Scan is also being evaluated in rural and remote areas of India. Through its commercialisation partner TeleMedC Pty Ltd, the technology is now being rolled out internationally – including in Singapore, Germany, India, and the Middle East.

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PhD student Akshay Kashyap in the lab. Image: Prof. Meenakshi Arora

RESOURCES

This section provides a series of resources targeted at supporting researchers (ECRs, MCRs, doctoral students and new talent in Australia-India research corridor), university leadership, industry partners and other stakeholders seeking to grow and deepen collaborative research between India and Australia.

The resources are organised into three primary audience groups, acknowledging that some materials will be relevant across multiple groups:

RESEARCHERS

Early career research (ECR) and doctoral student opportunities – for joint projects of bilateral significance

Researcher mobility – ease of movement for cross-country collaboration

- **Bilateral Collaboration Roadmap for ECRs**
- **Guide for Securing Collaborative Research Funding**
- **ECR Professional Development Ecosystem**
- **Researcher Mobility Checklist**

HIGHER EDUCATION INSTITUTIONS

Industry involvement – multi-stakeholder research partnerships to maximise research translation

- **Process Guide for Academic-Industry Research Collaboration**
- **Good Practice Guide for Scoping Commercial Research Partners**
- **Checklist of Principles for IP Sharing and Technology Transfer in University-Industry Collaboration**

ALL STAKEHOLDERS

Joint research funding – key national and bilateral initiatives

- **Australia-India Research Collaboration Schemes**

RESEARCHERS

BILATERAL COLLABORATION ROADMAP FOR ECRS

This template aims to support postdoctoral scholars and early-career researchers (ECRs) interested in initiating collaborative research between Australia and India. The roadmap is designed to guide ECRs through the early stages of bilateral research collaboration, with prompts that reflect the realities of both research ecosystems.

STEP 1: DEFINE YOUR COLLABORATIVE PROJECT

KEY PROMPTS

- What is the core research question or challenge you aim to address?
- Which thematic area(s) does your project align with? (e.g. water governance, digital health, climate resilience)

EXPLORE →

- ARCH-India Research Areas
  - » Why is the topic important in both national contexts?

REFERENCE RELEVANT BILATERAL FRAMEWORKS →

- Joint Statement on a Comprehensive Strategic Partnership between Republic of India and Australia
- A New Roadmap for Australia's Economic Engagement with India
- Framework Arrangement on Cyber and Cyber-Enabled Critical Technology Cooperation between the Republic of India and the Government of Australia
- Memorandum of Understanding on Cooperation in the Field of Mining and Processing of Critical and Strategic Minerals
- Establishment of an India-Australia Renewable Energy Partnership between the Government of the Republic of India and the Government of Australia
  - » Does your project correspond to Indian or Australian research priorities?

REVIEW →

- India's National Missions
- Australia's National Science and Research Priorities
  - » Are there Research Centres of Excellence or Research Hubs in your topic of choice?

IDENTIFY →

- Australia's ARC Centres of Excellence, Cooperative Research Centres, India's Centres of Excellence, or equivalent centres or hubs in India or Australia that align with your project. These centres can provide existing networks and infrastructure.
  - » Is your project interdisciplinary or cross-sectoral with links to industry sectors?

EXPLORE →

- Science & Technology knowledge clusters identified by India's Office of the Principal Scientific Advisor. There are eight knowledge clusters across India which aim to bring together academia, R&D institutions, and industry to solve challenging problems of their respective region. See if there is an overlap between your proposed project idea and the specific knowledge cluster.

Outcome: Develop a succinct and non-confidential, 1-page project outline that can be used to initiate conversations with potential collaborators. Refer to the example provided on this page.

EXAMPLE OF A ONE-PAGE PROJECT OUTLINE

(Provided with consent of researcher; contact admin@arch-india.org for use)

Title: Should address the opportunity arising from the project.
Example: Joint venture for high value organic fertiliser and pest-repellent products from Australian wild *neem*.

Context: Short outline of the value of the resource from which high value products will be made.
Example: The qualities of neem, areas of Australia where wild neem is distributed, existing industry and technology for neem-based products in Australia.

Opportunity: State the global demand and growth for the product.
Example: Compound Annual Growth Rate (CAGR) stats, where is the largest production, where are the largest export markets, which Indian companies have developed technologies for high-value production.

Research strategy: What are the research components?
Example: Geographical assessment of the viable areas for wild neem harvesting for commercial production; lab tests for phytochemical properties to estimate market value; identification of potential partners; research collaborators, local manufacturers, Aboriginal Business Corporations, Indian companies; joint business model development for harvesting, processing, and export industry; technology patents; proof-of concept, prototype manufacturing; time to commercial production.

Outcomes: Highlight benefits to research collaborators and industry partners.
Example: patents, licences, export markets, sustainability indicators, carbon sequestration, meeting net zero targets.

STEP 2: IDENTIFY A POTENTIAL COLLABORATOR

IF YOU'RE BASED IN AUSTRALIA	IF YOU'RE BASED IN INDIA
• Get in touch with your university's international research office • Reach out to Indian diaspora in your faculty. • Reach out to Indian institutions with existing MoUs or joint centres with your university. • Explore the Association of Indian Universities (AIU), India's representative body for higher education institutions. • Explore VIDWAN, IRINS, AIRSA, IHERN – Indian national research expert databases. • Contact faculty from Indian universities that share your research focus, including those connected to the delivery of Indian National Missions – for example, lead institutes for Thematic Hubs established under the National Quantum Mission. • Reach out to the Australian High Commission in New Delhi. Representatives from Austrade, the Australian Departments of Education and Department of industry, Science and Resources maintain networks across India and may be able to provide guidance or suggest relevant contacts. • Use platforms such as Google Scholar, Scopus, ARCH-India or LinkedIn to find top researchers in your field / available for collaboration. • Attend bilateral research events, thematic workshops, or networking forums hosted by universities, government, or centres like the Australia India Institute.	• Reach out to Australian institutions with existing MoUs or joint centres with your institution. • Ask your supervisor or department head about alumni or faculty with Australian links. • Explore Australian university networks: Universities Australia, Group of Eight (Go8), Innovative Research Universities (IRU), Regional Universities Network, and the Australian Technology Network of Universities (ATN). • Use "Find an Expert" pages on university websites. • Use platforms such as Google Scholar, Scopus, ARCH-India or LinkedIn to find top researchers in your field / available for collaboration • Attend bilateral research events, thematic workshops, or networking forums hosted by universities, government, or centres like the Australia India Institute.

GUIDANCE FOR INITIAL OUTREACH

- Begin with a concise and courteous message that introduces yourself, your institutional affiliation, the focus of your proposed project, and why you are reaching out. Share links to a couple of your existing projects and publications.
- Share your one-page project outline (developed in Step 1) to provide context and demonstrate preparedness. Highlight the novel or innovative features, including industry or social applications, potential for applying for joint research funding with industry or government partners.
- Express openness to define the project concept collaboratively, acknowledging the value of mutual input and shared interests.
- Be mindful of time zones, academic calendars, and preferred communication channels. Indian researchers may be more responsive via WhatsApp, while Australian researchers typically prefer email.

Outcome: Identify at least one potential collaborator and initiate contact.

Aim to:

- Schedule an exploratory conversation (e.g. virtual meeting).
- Discuss shared interests and complementary expertise.

STEP 3: TAKE THE COLLABORATION FORWARD

KEY PROMPTS

- **Clarify shared objectives**
  - » Revisit your 1-page project outline together.
  - » Identify complementary expertise, institutional strengths, and mutual priorities.
  - » Determine intellectual property sharing principles, if applicable.
- **Explore collaboration pathways**
  - » Co-develop a research proposal for a specific funding scheme (see Australia-India Research Collaboration Schemes resource).
  - » Plan a joint publication, workshop, or policy brief to develop evidence of collaboration.
  - » Explore opportunities at the institutional level, such as exchange, co-supervision, or data-sharing.
- **Discuss practical considerations**
  - » Timeline, roles, and responsibilities.
  - » Institutional processes and constraints.

Outcome: A shared plan for collaboration, with clear next steps and mutual commitment to progress.

PhD scholar Jyoti Arora from Jawaharlal Nehru University during her research exchange to the University of Melbourne as part of the Australia-India Research Students Fellowships program. Image: provided by Jyoti Arora

GUIDE FOR SECURING COLLABORATIVE RESEARCH FUNDING

Research collaboration between Australia and India brings both promise and complexity. This guide highlights good practices for researchers at higher education institutions (HEIs) in both countries, helping them navigate challenges with mutual understanding and respect, and build strong foundations for securing joint research funding.

1. FIND THE RIGHT COLLABORATORS IN THE OTHER COUNTRY

Why:

- Bilateral collaboration requires partners with a mutual understanding of different research systems and institutional processes.
- Complementary research skills, combined with strong collaborative dynamics and a shared vision, are critical for demonstrating project value.
- Trusted collaborators reduce risks associated with cross-country communication, approvals, and mobility challenges.

How:

- Identify HEIs and research centres in the other country with similar research interests or strengths via:
  - Your institution's research and international office.
  - Research intelligence databases such as Scopus and SciVal.
  - Databases of peak bodies such as Universities Australia and Association of Indian Universities.
- Leverage researcher-matching avenues such as ARCH-India, disciplinary networks, joint Centres of Excellence and doctoral programs.
- Create an assessment framework to profile potential collaborators:
  - evaluating their research output and international project experience
  - track their record with cross-country projects; and
  - institutional capacity to contribute effectively.
- Contact them to see if they are willing to collaborate with you to apply for national, bilateral, or international research grants. If they agree, then hold early scoping discussions and co-develop Terms of Reference (ToR) to align goals and timelines to apply for specific grants as per their funding cycle.
- Be informed of differences in institutional approval and decision-making processes: Indian institutions may require substantial lead time for approving collaborative grant applications, while Australian counterparts may need less time to receive approvals for submitting grant applications through their university's research administration.

2. FIND SUITABLE GRANTS OR FUNDING SCHEMES

Why:

- Funding schemes often differ in eligibility, co-funding, and mobility requirements – knowing what fits a bilateral team is crucial.
- There may be international or third country funding schemes which allow for collaborative grant applications with researchers from multiple countries. Research partners in both Australia and India must be skilled at managing multi-stakeholder, cross-country partnerships.
- Industry- and innovation-linked funding may require cross-country relevance to both markets.

How:

EXPLORE

- Government department or ministry funding schemes in each country that may allow for international collaborators to be part of the grant application.
  - » India: Department of Science and Technology (DST), Department of Biotechnology (DBT), Indian Council of Social Science Research (ICSSR), University Grants Commission (UGC). Several other national and state government ministries may have funding schemes with scope for including international collaborators.
  - » Australia: Australian Research Council (ARC), National Health and Medical Research Council (NHMRC), Department of Foreign Affairs and Trade (DFAT), Department of Industry, Science and Resources (DISR), state-level programs.
- Existing bilateral funding programs listed on p. 70
- dentify industry-linked or innovation-focused opportunities aligned with both institutions' interests.
- Leverage personal and professional networks – colleagues, mentors, alumni, industry contacts – to uncover less visible opportunities.

ASSESS

- Review funding options against following the parameters:
  - » co-funding obligations
  - » application process and timelines
  - » mobility expectations
  - » industry involvement
  - » administrative workload
  - » partner capacity.

ALIGN

- Ensure the grant aligns with the partnership's expertise, topic area, and intended impact.
- Prioritise schemes designed for international collaboration, as they typically allow flexibility for cross-country challenges.

3. UNDERSTAND GRANT CONDITIONS AND IDENTIFY CHALLENGES

Why:

- Australian and Indian funders have different rules around salaries, overheads, and eligible expenses; misunderstanding these can lead to ineligibility.
- IP, data-sharing, and ethics rules differ; bilateral projects must meet all partners' institutional or national requirements.
- Operational challenges like visas, travel restrictions, and procurement delays are common in cross-country work.

How:

- Check eligibility for both countries (institution type, citizenship/residency, PI rules).
- Identify differences in funding rules, overheads, allowable expenses, and salary structures.
- Review IP, data-sharing, ethics, and export control obligations.
- Anticipate operational constraints: visa delays, travel restrictions, procurement timelines, and fieldwork feasibility.
- Factor in potential exchange rate fluctuations impacting budgets.

4. MAP THE COLLABORATION PROFILE EARLY

Why:

- Clear structures reduce misunderstandings across different organisational cultures and governance systems.
- Internal reporting requirements and decision-making rules may differ, so clarity prevents delays.
- A compatible governance framework supports compliance with both Indian and Australian institutional policies.

How:

- Agree on lead roles, deliverables, and administrative responsibilities.
- Establish a communication system and governance structure that accommodates time zones.
- Draft a preliminary Partnership/Consortium Agreement covering decision-making, dispute resolution, and IP management.
- Plan joint reporting to meet compliance requirements of both Indian and Australian institutions.

5. IDENTIFY AND SECURE INDUSTRY OR EXTERNAL PARTNERS

Why:

- Industry and commercial partners strengthen research proposals and offer strategic routes for translation.
- External partners may have different priorities – some focus on innovation, others on policy development, and others on capacity-building – so it is important to clarify expectations early.

How:

- Leverage the local knowledge of your partner institution to identify relevant industry collaborators.
- Engage bilateral business councils, trade and investment networks, science, technology and innovation start-up hubs and incubators.
- Secure letters of support detailing commitments, including in-kind contributions or pilot sites.
- Clarify IP, cost-sharing, and publication expectations upfront.

6. ADDRESS CROSS-COUNTRY NUANCES

Why:

- Australia and India have different fiscal years, calendars, and regulatory requirements.
- Cultural differences in communication, institutional hierarchies, and decision-making affect project efficiency.

How:

- Plan project around fiscal years (India: Apr–Mar; Australia: Jul–Jun), holidays, and institutional cut-off periods.
- Account for mobility approvals, visas, and insurance requirements.
- Align project outputs with data-protection laws.
- Clarify communication channels, decision-making hierarchy, and escalation processes.
- Use technology platforms compatible with both countries' compliance requirements

7. BUILD A STRONG JOINT PROPOSAL

Why:

- Funders want to see the bilateral advantage – complementary expertise and cross-country impact.
- Clear demonstration of shared goals, mobility, and capacity-building aligned with the proposed budget strengthens chances of success.

How:

- Highlight complementary expertise and shared impact pathways, including capacity building for doctoral students, policy influence, and industry uptake for commercialisation.
- Ensure mobility plans are realistic and consider visa and travel constraints.
- Build a robust budget that complies with the funding scheme requirements and clearly outlines all line-item expenses associated with proposed project activities.
- Prepare a comprehensive Budget Justification document for all line items, including accounting for exchange rates, fund-transfer costs, and local administrative and related cost structures. *Most assessors of grant applications will closely examine whether the project activities and budget are realistic and properly justified for collaborations across both country contexts.*
- Share the draft application early with mentors and research administration advisors to receive feedback on the project proposal and budget. *Do not leave this to the last minute before the submission deadline.*

8. BEFORE SUBMISSION

Why:

- Misalignment between partners or incomplete documentation can result in rejection of the application.
- Ensuring compliance with funding-body requirements, and other Indian and Australian institutional and government regulatory requirements, prevents last-minute delays.

How:

- Conduct a joint compliance check against all funding requirements.
- Ensure documents, CVs, and budgets are properly aligned across partners.
- Validate the feasibility of timelines, travel, and fieldwork.
- Secure institutional sign-offs early.

9. AFTER SUBMISSION

Why:

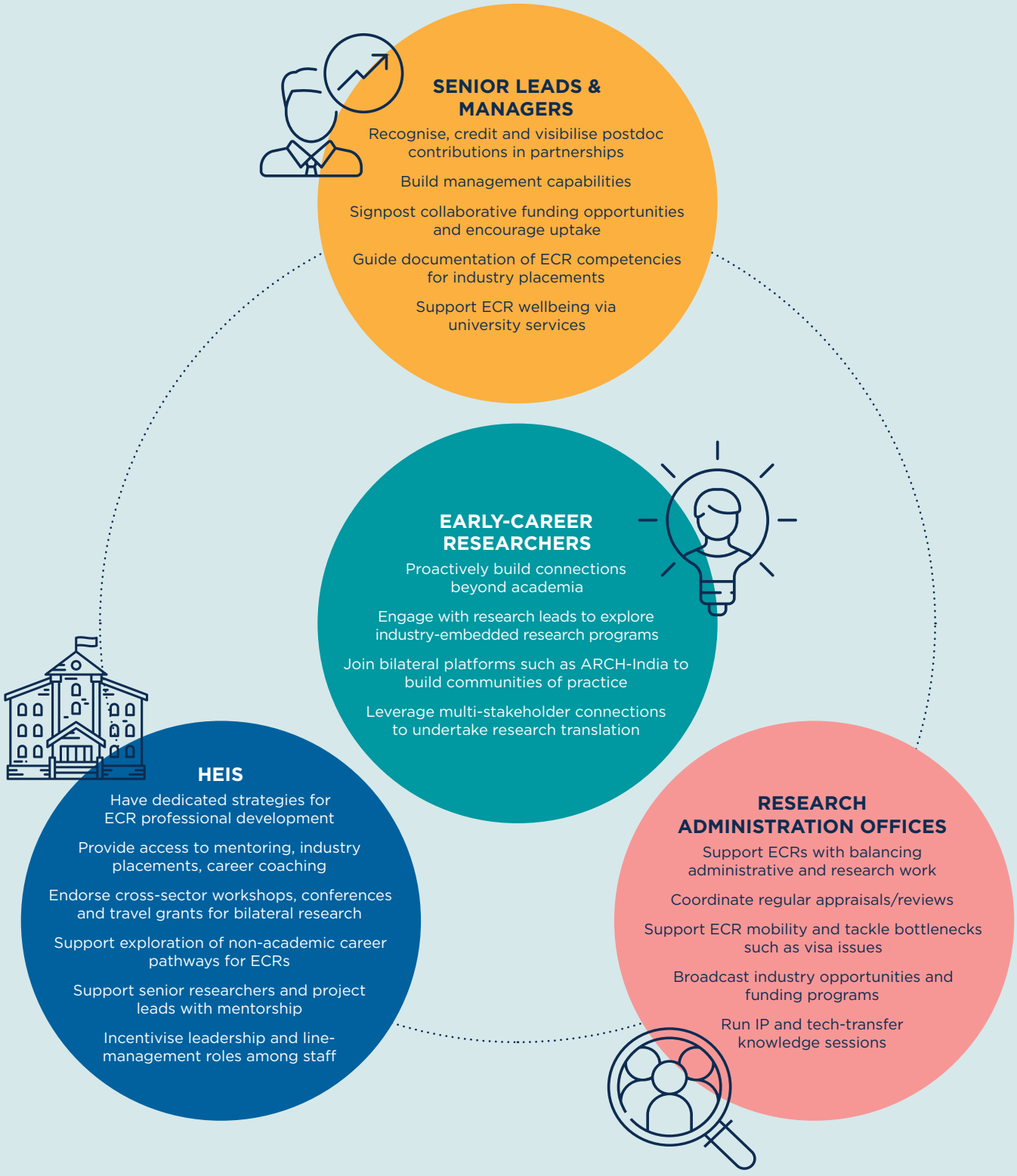
- Effective post-submission management maintains momentum and partner engagement and addresses cross-country contracting differences.

How:

- Track updates from funding agencies and prepare for clarification requests or interviews.
- Keep all collaborators and respective university research administrations updated with the status of the grant application.
- Examine and prepare for contracting procedures across institutions, including banking, ethics approvals, and partner agreements.
- If the application is unsuccessful, seek and assess the feedback provided by the funding agency. Identify areas that need to be strengthened and revised for submission in the next funding cycle. Explore other grant schemes that may support particular aspects of your project ideas. *Don't give up!*
- If the application is successful, congratulations! *Your collaborative research project is off to a great start!*

ECR PROFESSIONAL DEVELOPMENT ECOSYSTEM

Australian and Indian early-career researchers (ECRs) are part of a complex ecosystem that needs to actively support their growth, visibility and career momentum. This framework identifies critical roles for the stakeholders in this network to spark action, align responsibilities and build a vibrant environment where ECRs can confidently build collaborative relationships.



RESEARCHER MOBILITY CHECKLIST

Physical mobility between Australia and India, particularly in the early stages of projects, is strongly linked to the success of research partnerships and generating future opportunities. This checklist outlines key considerations to help researchers prepare for visits to Australia or India. Your home institution may have its own version of a researcher mobility checklist.

BEFORE YOU APPLY OR COMMIT

- ☐ Confirm institutional support and approvals (e.g. academic leave arrangements, MoU scope or provisions, ethics clearance).
- ☐ Clarify the purpose and expected outcomes of your visit (e.g. research exchange, joint publication, data collection).
- ☐ Consult your university's research or international office to obtain information regarding institutional support mechanisms that facilitate researcher mobility.
- ☐ Check visa requirements and processing times for your destination country.
- ☐ Ensure alignment with your collaborator's timeline, availability, and institutional processes.
- ☐ Do your research. If you work overseas, you become a quasi-ambassador of your country. Take the time to learn about the country, its culture and local etiquette.

DOCUMENTATION AND LOGISTICS

- ☐ Obtain a formal invitation letter or collaboration agreement (if required).
- ☐ Ensure your passport is valid for the entire duration of travel, plus any buffer required by the destination country.
- ☐ Have additional passport photos on hand, which may be required for official documentation upon your arrival.
- ☐ Acquire the appropriate visa – check the visa type and eligibility.
- ☐ Book travel and accommodation in line with your institution's policies and/or the conditions of your grant conditions.
  - ☐ Explore accommodation options such as university guest houses, on-campus lodging (common at Indian higher education institutions), short-term rentals, or hotels. Ask your host institution for recommendations.
  - ☐ Arrange all necessary insurances, for example health and travel insurances.
  - ☐ Confirm access to facilities, workspace, and digital tools at host institution.
  - ☐ Prepare any required documentation for customs (e.g. research equipment, samples).

ON ARRIVAL

- ☐ Purchase an eSIM or SIM card.
- ☐ Attend orientation or onboarding sessions (if offered).
- ☐ Clarify institutional processes for safety, data access, and research conduct.
- ☐ Register at the India at the Foreign Regional Registration Office (FRRO) (for Australians visiting India for more than 6 months).
- ☐ Schedule key meetings and milestones for your visit.
- ☐ Meet with key contacts beyond your direct collaborators, including heads of departments, research support staff, and postgraduate researchers.
- ☐ Attend campus events or seminars.
- ☐ Take time for local sightseeing and learning about local communities and culture.

FOR RESEARCHERS VISITING INDIA	FOR RESEARCHERS VISITING AUSTRALIA
• Australian High Commission in India • Authorised Portal for Visa Application to India • Incredible India • Checklist for FRRO registration formalities • Language learning resources • Strengthening Australia-India Research Collaboration and Engagement: Case Studies and Good Practices	• High Commission of India in Australia • Visa information • Tourism Australia

SHARE YOUR STORY

After completing your visit, consider sharing your mobility experience with the ARCH-India team. Your reflections can help highlight successful collaborations and guide other researchers.

To share your story: Submit the 'case studies' form on the ARCH-India website.

CASE STUDY

MAPPING WATER FROM SPACE: AN EARLY-CAREER RESEARCHER'S EXPERIENCE IN INDIA

Dr Paula Cartwright, from James Cook University, undertook a short research exchange in India through the Australia India Women Researchers' Exchange Program. Partnering with the Indian Institute of Technology Bhubaneswar, she used high-resolution satellite imagery and on-the-ground water sampling to monitor water quality in coastal ports, providing government and industry with a cost-effective way to track marine health across large areas. As an early-career researcher, Dr Cartwright was looking for opportunities to gain international experience. James Cook University already had an existing connection with IIT Bhubaneswar, which helped her secure a host institution – often one of the most challenging steps when applying for a fellowship of this kind.

The partnership was also a strong fit, as IIT Bhubanewar is recognised as one of India's leading institutions in remote sensing research. During her time in India, Dr Cartwright lived on the 1,000-acre IIT Bhubaneswar campus, describing the experience as an invaluable introduction to India's academic environment and the rhythms of daily campus life.

> *"In Australia, I often work with diverse Indigenous groups, and a common principle across these collaborations is the importance of spending extended time "on Country" to build trust. You cannot simply drop in for a few hours and expect meaningful engagement – relationships develop through shared time, respect, and presence. I found this Fellowship to be a very similar experience. By immersing myself in the daily life of the host institution – sharing office space, fieldwork, and informal conversations – I was able to build genuine relationships founded on mutual understanding and respect."*

Dr Paula Cartwright during a field trip to Chilika Lagoon as part of her research exchange.
Image: Provided by Dr Cartwright

HIGHER EDUCATION INSTITUTIONS (HEIS)

PROCESS GUIDE FOR ACADEMIC-INDUSTRY RESEARCH COLLABORATION

Building effective research partnerships with industry requires structured, deliberate action - this guide shows HEIs the steps to get it right.

Universities can drive high-impact collaborations through a targeted approach – from identifying partners to delivering and evaluating joint research outcomes.

Successful HEI-industry collaboration requires targeted interventions – use this roadmap to move from opportunity to implementation with clarity and purpose.

Initiate strong partnerships with strategic alignment – identify research synergies and engage potential industry partners with clear value propositions and accountability measures.

Implement collaborative projects with coordinated action – setting up research teams to maximise career opportunities and translate shared goals into measurable progress.

Evaluate collaboration outcomes – assess impact, consolidate evidence, and leverage results to expand research partnerships over time.

Indian Institute of Technology Hyderabad student poster session during the launch of the Advanced Manufacturing Research Innovation and Training (AMRIT) – a collaboration with Deakin University. Image: Deakin University

PROCESS GUIDE FOR ACADEMIC–INDUSTRY RESEARCH COLLABORATION

INITIATE

Australian university
P2P
Research centres

Indian HEI
P2P
Research centres

IDENTIFY

Complementarities in research strengths

ESTABLISH

Research partnership
MoU + university level
IP agreement

EXPLORE

Facilitation platforms
providing information on:
- Industry partnerships
- Research schemes

INTRODUCTION | **SEEK PARTNERS**

State government ↔ Industry clusters

APPLY

R&D funding schemes

SET UP

Joint governance & administration unit

Funding
Partner contributions
& Investments

Industry research partnership
- IP patents, technology transfer agreement
- Co-design research program:
  - » Nominate research leads
  - » Timeframe for program
  - » ToR for project & translation
  - » Research objectives & methods
  - » Monitoring & Evaluation plan, including qualitative and quantitative indicators

IMPLEMENT

Research Leads from both HEIs

SET UP

Joint research teams with MCRs, ECRs to conduct research supervise PhD students

RECRUIT

PhD students from both HEIs

EXECUTE

Research project embedding:
- Researcher training & industry placements
- Build testbeds & evidence base for research activities
- Host annual workshops
- Enable researcher mobility between HEIs & industry
- Host ‘proof of concept’ demos on facilitation platforms for commercial research applications

REVIEW BY JOINT GOVERNANCE UNIT

Biannual meetings with stakeholders to review:
- Regulatory bottlenecks for commercialisation
- Opportunities for skilling partnerships
- Supply chains & management practices
- Integration with global value chains

EVALUATE

Ongoing monitoring of research project & student progress with milestones

COMPILE

Database of qualitative & quantitative indicators for measuring research impact

PUBLISH

Impact report for stakeholders cataloguing commercialisation

SHOWCASE & PROMOTE

Case studies on facilitating platforms, government & partner websites

Expand research collaboration on new projects

GOOD PRACTICE GUIDE FOR SCOPING COMMERCIAL RESEARCH PARTNERS

An adaptable guide for Australian and Indian higher education institutions (HEIs) to establish research partnerships with industry and commercial partners.

A. IF YOU HAVE A MEMORANDUM OF UNDERSTANDING (MOU) WITH THE PARTNER UNIVERSITY

STEP 1: COORDINATE INTERNALLY

Before approaching commercial partners:

- Discuss with colleagues involved in the MoU (faculty heads, research leads).
- Learn about the industry you want to engage with:
  - Maturity and size
  - Current or long-term challenges
  - Growth potential and specific areas of value-add
  - Any existing solutions in market.

STEP 2: MAP JOINT CAPABILITIES

Create a combined capability profile mapping:

- Shared research infrastructure and R&D strengths.
- Complementary disciplines, people-to-people links and department synergies.
- Joint PhD or student mobility programs.
- Capacity for co-supervision of projects or implementation of testbeds.
- Involve your university's Research, Innovation, or R&D Commercialisation Offices/Technology Transfer Offices early.
- Seek their advice on:
  - IP ownership/management
  - Background IP disclosures
  - Contracting pathways for tripartite agreements
  - Requirement for amendments to the existing MoU.

STEP 3: IDENTIFY RELEVANT INDUSTRIES AND COMPANIES

1. **India**

- Confederation of Indian Industry (CII) to identify industrial and commercial priorities of select Indian regions/states, local R&D strengths, and regional industry associations and key contacts.
- Federation of Indian Chambers of Commerce & Industry (FICCI) for industry sector insights, technology commercialisation initiatives, innovation programs, and networks linking universities with industry. FICCI also convenes major knowledge-industry events such as the FICCI Bharat R&D Summit which showcases emerging research priorities, industry needs, and opportunities for university-industry collaboration.
- National Association of Software and Service Companies (NASSCOM) Market and Industry for insights on India's SME Landscape, Global Capability Centers, Engineering R&D and BPM Industry.
- Department of Scientific and Industrial Research (DSIR) for information on industry-driven research initiatives, funding opportunities and dashboard of India's R&D and innovation ecosystem.
- Office of the Principal Scientific Adviser to the Government of India for information on India's government-industry collaboration schemes, including Science and Technology (S&T) Clusters, International Technology Engagement Strategy (ITES), Manthan platform and Anusandhan National Research Foundation (ANRF).
- Indian Centres of Excellence for research specialisations.
- State of Industry R&D in India Dashboard for information on sector-level industry data on R&D intensity, PhD employees, patents and publications.

2. **Australia**

- The Department of Industry Science and Resources for up-to-date information on Australian projects across priority sectors such as manufacturing, science, technology and innovation, and trade.
- The Australian Trade and Investment Commission for information on programs, services and grants such as the Australia-India Business Exchange and Landing Pads and Dealroom for tech exporters.
- State government industry directories for sector, capability and industry profiles to identify regional R&D strengths and potential industry partners.
- Commonwealth Scientific and Industrial Research Organisation (CSIRO) industry domain pages for national research capabilities, priority sectors, infrastructure, and pathways for industry–research collaboration through CSIRO programs and missions.
- Cooperative Research Centres (CRCs) for information on long-term, industry-focused research consortia that reveal active R&D themes and potential partners across priority technology and industry domains.

STEP 4: CREATE A RESEARCH PROPOSAL INCLUDING:

- **Proposal Summary:** Short narrative that outlines the proposed project, including project objectives and anticipated impact.
- **Introduction to the Organisation(s):** A description of past and present operations, showing ability to carry out the program.
- **Problem Statement:** Clear, concise and well-supported statement of the problem to be addressed and why the proposed program is needed.
- **Program Methods, Design, Activities, and Deliverables:** The "goals" describe what the program is intended to achieve. The "objectives" refer to the intermediate accomplishments on the way to the goals. These should be achievable and measurable. Describe the program activities and how they will help achieve the objectives.
- **Proposed Project Schedule and Timeline:** The proposed timeline for the program activities. Include the dates, times, and locations of planned activities and events.
- **Key Personnel:** Names, titles, roles and experience/qualifications of key personnel involved in the program. What proportion of their time will be used in support of this program?
- **Project Partners:** List the names and type of involvement of key partner organisations.
- **Future Funding:** Continuing the program beyond the grant period, or the availability of other resources, if applicable.
- **Monitoring & Evaluation Plan:** Proposals must include a draft Monitoring and Evaluation (M&E) Performance Monitoring Plan (PMP). The M&E PMP should show how applicants intend to measure and demonstrate progress towards the project's objectives and goals.

STEP 5: APPROACH INDUSTRY JOINTLY

When contacting industry, highlight:

- Access to two markets, two regulatory environments, and two research ecosystems.
- Opportunity for joint testbeds, pilots, and innovation pathways.

Tip: Leverage informal people-to-people links and Indian diaspora expert networks for introductions.

Send prospective industry partners:

- Joint capability one-pager.
- Short introductory communication.
- Invitation for a scoping discussion.

STEP 6: DEVELOP A TRIPARTITE COLLABORATION FRAMEWORK

Once interest is confirmed:

- Draft a tripartite Statement of Intent or annex under the existing MoU.
- Involve both universities' TTOs early.
- Align contracting models in Australia and India (IP, data privacy, compliance).
- Define the industry partner's contribution (cash, equipment, data access, pilot sites).

B. IF YOU DON'T HAVE AN MOU WITH THE PARTNER UNIVERSITY

STEP 1: IDENTIFY POTENTIAL ACADEMIC COLLABORATORS (ALSO SEE ABOVE ADVICE ON RESEARCH COLLABORATIONS FOR ECRS)

Start by mapping complementary expertise:

- Review university research centres, Centres of Excellence, labs.
- Identify Indian/Australian institutions aligned with your domain expertise:
  - Leverage people-to-people links and departmental connections
  - Access platforms such as ARCH-India, Association of Indian Universities (AIU) and Universities Australia's biennial MoU database to identify key institutions and contacts in relevant research fields.
- Reach out to faculty leads or international research offices and propose a preliminary virtual meeting.
- Establish research agreement.

STEP 2: CONSULT INTERNAL STAKEHOLDERS EARLY

Before engaging externally:

- Speak with your Research & Commercialisation Office/Technology Transfer Offices (TTO).
- Notify International Engagement or Global Partnerships offices.
- Find out how they can help with:
  - Drafting an MoU
  - Validating partnership risks
  - Recommending appropriate models for tripartite collaborations.

STEP 3: USE INDUSTRY-MAPPING TOOLS TO FIND POTENTIAL PARTNERS (SEE P.55)

This is particularly useful if you are starting without an MoU – use it to identify industry clusters relevant to your research theme.

STEP 4: DEVELOP PARALLEL CONVERSATIONS WITH HEI AND INDUSTRY PARTNERS

Institutional partnerships can sometimes be driven by industry buy-in as they signal strong potential for translation and commercial outcomes.

- Commence partnership discussions with potential partner university.
- Simultaneously engage industry to gauge interest.
- Share:
  - Capability statements
  - Use cases
  - Possible pilot project concepts.

STEP 5: FORMALISE TRIPARTITE COLLABORATION

Once interest aligns:

- Draft a three-way collaboration agreement, covering:
  - Scope for collaborative R&D
  - Sharing facilities
  - Student mobility/embedded researchers
  - Principles for IP and data sharing.
- Use university TTOs to align:
  - IP ownership or cross-licensing
  - Commercialisation pathways
  - Export controls and ethical clearance
  - Funding contributions
  - Set up a joint governance unit for managing technology transfer process.

USEFUL RESOURCES

- For negotiating multi-stakeholder interests in technology commercialisation:
  - » The Marketing to Industry Toolkit Checklist
  - » Understanding and Balancing Stakeholder Interests in Commercialising Academic Technologies
- For setting up research commercialisation partnership agreements:
  - » AUTM Model Inter-Institutional Agreement (Model IIA)
  - » Higher Education Research Commercialisation Intellectual Property Framework
- For information on opportunity sectors for bilateral R&D: India Australia Economic Cooperation report, CII
- For models and case studies of successful research translation:
  - » The Translational Research Playbook, FAST India
  - » FICCI Compendium of Research Work/Technologies for Commercialisation
  - » Outline of the Technology Transfer Process, FAST India (p. 44)

CHECKLIST OF PRINCIPLES FOR IP SHARING AND TECHNOLOGY TRANSFER IN UNIVERSITY-INDUSTRY COLLABORATION

This checklist provides practical guidance for Australian and Indian universities and industry partners to manage intellectual property (IP) sharing and technology transfer in collaborative research and innovation.

1. SHARED PRINCIPLES

- ☐ Transparency – Clearly identify what knowledge, technologies, or materials each partner brings (Background IP) and how new outcomes (Project IP) will be shared.
- ☐ Fairness – Ensure that *all* members of the joint research team, including doctoral students and early-career researchers (ECRs) on both sides, benefit from shared research outcomes in proportion to their contributions.
- ☐ Respect for innovation – Protect intellectual contributions through appropriate recognition, confidentiality, and attribution.
- ☐ Mutual benefit – Design agreements and processes that promote benefits for both research advancement and industry application.
- ☐ Capacity building – Strengthen skills, knowledge exchange, and innovation ecosystems in both countries.
- ☐ Sustainability – Create lasting partnerships that continue beyond a single project through trust and shared goals.

2. BEFORE THE COLLABORATION

- ☐ Discuss shared goals early – Identify what the collaboration aims to achieve, such as joint research, product development, or training.
- ☐ Establish a Joint Technology Transfer Unit that makes patenting decisions and provides information on licensing practices.
- ☐ Administration of IP policy – Develop basic guidelines for the administration of IP Policy. Decide what data or materials can be shared and how they should be protected and define rules of benefit sharing if the commercialisation of IP generates income.
- ☐ Clarify ownership and recognition – Jointly work out ownership of new ideas, patents, or prototypes and how contributors will be acknowledged.
- ☐ Agree on how results will be used – Define how research outcomes, reports, and technologies will be applied or commercialised.
- ☐ Establish an IP and Technology Transfer Agreement – A clear Memorandum of Understanding (MoU) or collaboration agreement that defines the rights, responsibilities and obligations of all stakeholders. Refer to the Department of Education's HERC IP Framework (p.21) and WIPO's Technology Transfer Agreements.
- ☐ Ensure understanding of national laws – Both parties should be aware of and in compliance with IP laws and university policies in Australia and India.
- ☐ Address jurisdictional differences – Explicitly discuss how Australian and Indian IP filing processes, patent timelines, revenuesharing norms and compliance requirements will be managed across both systems.

3. DURING THE COLLABORATION

- Share information responsibly – Exchange knowledge while maintaining confidentiality for sensitive data.
- Encourage open communication – Hold regular meetings to review progress, identify potential innovations, and resolve concerns.
- Document new ideas and results – Keep clear records of contributions to support shared ownership and fair recognition.
- Support researcher and student mobility – Encourage exchange visits and joint supervision to strengthen collaboration.
- Promote inclusive participation – Ensure ECRs and PhD students have opportunities to engage in joint innovation.

4. AFTER THE COLLABORATION

- Disseminate research contributions – Publish jointly where possible and acknowledge all contributors in outputs and IP filings.
- Initiate technology transfer – prototype development at contract manufacturing facilities, market testing for commercial production or community benefit.
- Maintain relationships and manage conflicts of interest – Continue collaboration through new projects, shared infrastructure, or alumni networks.
- Share success stories – Highlight outcomes in both countries to inspire more university-industry cooperation.

GUIDING FRAMEWORKS AND GOOD PRACTICES

- Existing national policy frameworks – Australia's HERC IP Framework and IP Australia resources, and India's National IPR Policy and IP India resources for basic templates and awareness-building about mutual IP, patents and technology transfer legislation.
- WIPO Strategy on Standard Essential Patents 2024-2026
- Term Sheet Template: Speeding the Way for Startups: For higher education institutions and investors to effectively commercialise research
- AUTM's Sample License Agreement for Technology Transfer
- AUTM's Guiding Principles of Technology Transfer
- University of Maryland's Borderless Research Administration Knowledge Exchange (BREAK)

CASE STUDY

MONASH AND APOLLO DRIVE AI HEALTH INNOVATION

In 2024, Monash University's Faculty of Information Technology signed a Memorandum of Understanding with Apollo Hospitals, one of India's largest healthcare providers, to advance digital health research and innovation in both countries. A central component of the partnership is the testing and cross-validation of Apollo's clinical AI systems. Through secure access to de-identified health data drawn from more than 200 million patient records across Apollo's hospital network, Monash researchers will gain an exceptional breadth of clinical insights. This work will support the training of AI models aimed at detecting and diagnosing major diseases such as cancer, heart disease and diabetes. Alongside research and knowledge exchange, the partnership extends to educational initiatives and a planned multinational Health AI event, providing a platform to share results and address common challenges.

Monash University and Apollo sign an MOU. Image: Monash University Media Release, 2024

AUSTRALIA-INDIA RESEARCH COLLABORATION SCHEMES

This table serves as a quick-reference guide to relevant funding opportunities, summarising each program's purpose, objectives, and the groups it is designed to support. Please note that funding programs evolve regularly; for the most up-to-date information, refer to the ARCH-India platform.

SCHEME NAME	KEY DETAILS
BILATERAL FUNDING OPPORTUNITIES	
Australia-India Strategic Research Fund (AISRF)	• Australia's largest bilateral science collaboration initiative with India, supporting science, technology, and innovation research between both countries. • Grants of up to A$1 million available. • Eligible activities include joint scientific research projects, application and commercialisation of research outcomes, and conferences and workshops. • Early- and Mid-Career Researcher Fellowships are also available under AISRF, with funding up to A$17,500.
Australia-India Cyber and Critical Technology Partnership (AICCTP)	• Grants to support Australia-India research projects to advance shared understanding of ethical frameworks, best practices and technical standards for cyber and critical technologies. • Examples include developing governance frameworks and best practices for emerging quantum technologies and operationalising ethical frameworks in the critical technology supply chains of global companies.
Maitri Program	• Maitri Grants: » Support collaboration between Australian and Indian cultural, education, research and business communities. • Maitri Scholarships: » Supports Indian students to study at Australian universities » Prioritises students undertaking PhD studies in STEM-related fields. • Maitri Fellowships: » Supports policy researchers to undertake secondments with Australian and Indian organisations » Fellowships include inward (Indian researchers to Australia, up to 12 months), outward (Australian researchers to India, up to 12 months), and two-way exchanges (paired collaboration for up to 2 years).
India Australia Rapid Innovation and Startup Expansion (RISE) Accelerator	• Provides support to startups and small- to medium-sized enterprises (SMEs) who are working on innovative technology and are considering overseas expansion. • Focused on environment and climate technologies. • Discovery phase with e-learning and funded travel, followed by a pilot phase to test or demonstrate technology in the target market.

SCHEME NAME	KEY DETAILS
AUSTRALIAN FUNDING OPPORTUNITIES	
Australia's Economic Accelerator (AEA)	• Funding opportunities to universities, encouraging collaboration with industry partners. • Eligible university researchers can apply for grants up to $500,000 to confirm proof-of-concept on research ideas pursuing a commercial outcome, with the full tranche representing $12 million in funding. • Offers pathways for project outcomes, including avenues for venture capital investment, underscoring commitment to translating research outcomes into tangible economic impact. • Guided by an expert commercialisation board comprising representatives from government, industry, and research sectors.
Cooperative Research Centres (CRC) Grants	• Links researchers with industry and government with a focus on research application. • CRC grants support medium- to long-term, industry-led collaborations of up to 10 years, while CRC-P grants support shorter industry-led collaborative research of up to 3 years. • International partners can be included in both CRC and CRC-P grant projects, as long as eligibility requirements of Australian industry entities and research organisations have been met.

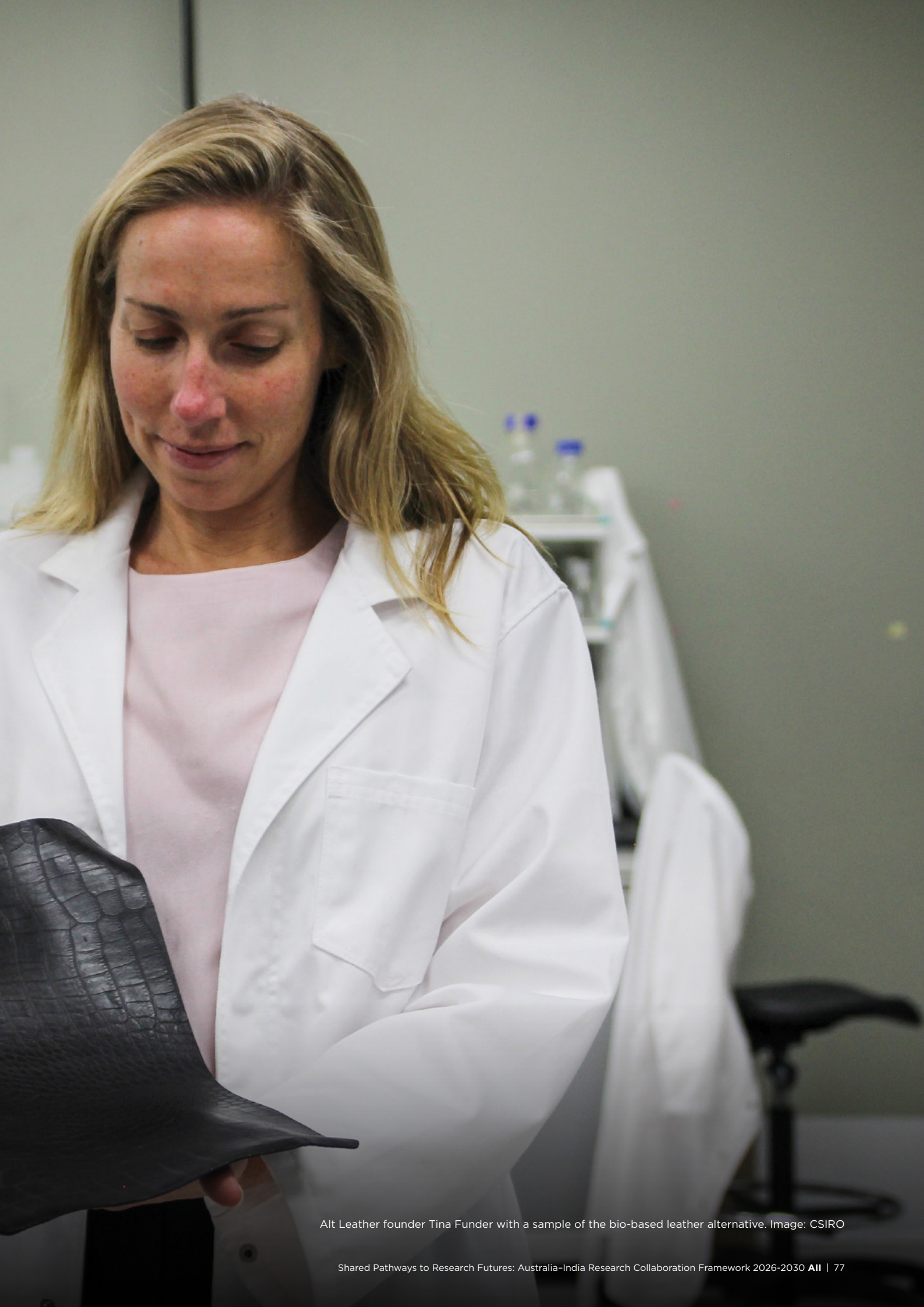
SCHEME NAME	KEY DETAILS
INDIAN FUNDING OPPORTUNITIES	
Scheme for Promotion of Academic and Research Collaboration (SPARC)	• Enhances India's higher education research capacity through international collaborations with institutions from 28 countries, including Australia, on nationally and globally relevant problems. • Promotes academic cooperation in areas such as joint research projects, exchange of faculty and students, and joint degree programs.
Global Initiative of Academic Networks (GIAN)	• Enables Indian higher education institutions to invite and host international academics and researchers, including those from Australia. • Facilitates the co-teaching of advanced courses to Indian students. • Offers international experts the opportunity to familiarise themselves with India's academic environment.
Visiting Advanced Joint Research Faculty Scheme (VAJRA)	• Designed for overseas scientists and academics, especially Non-Resident Indians (NRIs), Persons of Indian Origin (PIOs), and Overseas Citizens of India (OCIs), to serve as adjunct or visiting faculty in publicly funded Indian research and academic institutions. • Enables research engagements that bring together diverse perspectives to address shared scientific challenges.
Impacting Research Innovation and Technology (IMPRINT-II)	• Tackles key national engineering challenges by translating knowledge into viable technologies (products and processes).
Science & Technology (S&T) Clusters	• Operate through a consortium model for innovation, interdisciplinary collaboration, and technology translation. There are currently eight active clusters across India. • Brings together academic institutions, R&D organisations, industries, startups, and local governments to address regional challenges through demand-driven, technology-led solutions. • International opportunities include the International Science & Technology Clusters Conference: Making Lives Easier Through S&T, a platform for global collaboration and partnership building.

CASE STUDY

ALT. LEATHER: FROM LAB TRIALS TO SCALABLE PRODUCTION SCALABLE PRODUCTION

Alt. Leather is pioneering a 100% bio-based leather alternative made from agricultural waste and natural fibres, delivering a high-performance, plastic-free solution for industries seeking to reduce their environmental footprint. Traditional leather production is resource-intensive, involving significant water use, chemical treatments, and greenhouse gas emissions. Synthetic alternatives often rely on petrochemicals and are non-biodegradable. Alt. Leather's material applies principles of green chemistry to create ecologically compatible products that can re-enter the biological cycle at end-of-life. Over three years, founder Tina Funder and a team of material scientists led by Dr Tuan Nguyen have worked at the molecular level to transform agricultural biomass into a durable, scalable material.

With support from CSIRO's Kick-Start program, the team accessed specialised equipment at the Food Innovation Centre in Werribee to test and refine their production processes, starting with small-scale extruders and progressing to larger machines to assess scale-up feasibility. Thousands of prototypes later – including early samples that "looked like scrambled eggs" – the team achieved a breakthrough: a material that looked and felt like leather. Through CSIRO's India Australia RISE Accelerator, Alt. Leather was also able to collaborate with manufacturers in Noida and Chennai to produce handbags and footwear, gaining firsthand experience in high-volume production and refining their methods for industrial scale. The result is a commercially viable, sustainable alternative now being explored by global brands for application across fashion, accessories, footwear and beyond.



Alt Leather founder Tina Funder with a sample of the bio-based leather alternative. Image: CSIRO

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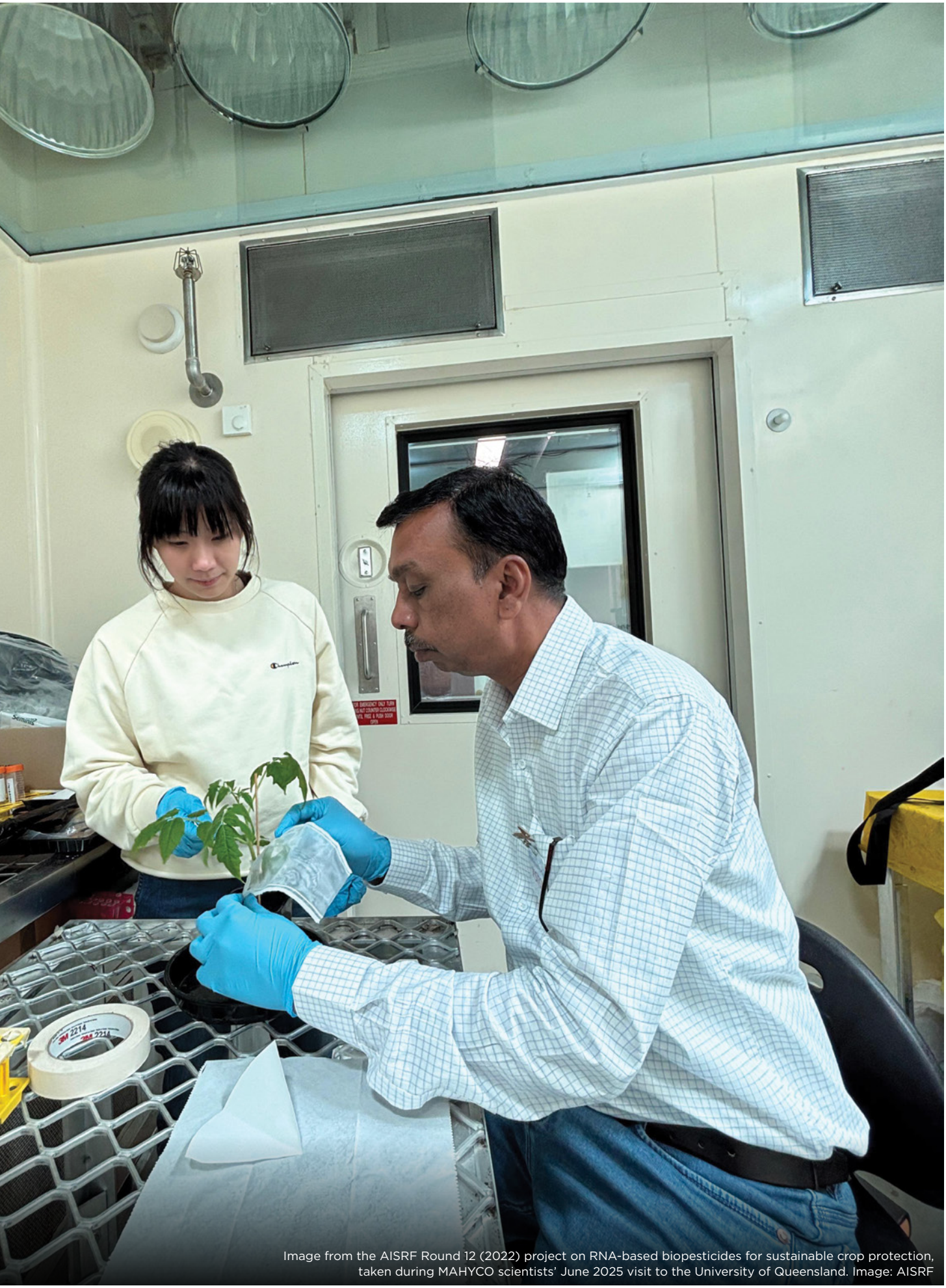

Image from the AISRF Round 12 (2022) project on RNA-based biopesticides for sustainable crop protection, taken during MAHYCO scientists' June 2025 visit to the University of Queensland. Image: AISRF

APPENDIX

STEERING COMMITTEE MEMBERS

Mr Paul Harris, Executive Director, Innovative Research Universities (Chair)

Professor Meenakshi Arora, Associate Dean (Graduate Research), Faculty of Engineering and IT, University of Melbourne; Director, Melbourne India Postgraduate Academy

Professor B.S. Murty, Director, Indian Institute of Technology, Hyderabad

Professor Sambit Datta, Dean (International), Faculty of Science and Engineering, Curtin University; International Visiting Professor, IIT, Kharagpur

Professor Chennupati Jagadish, Distinguished Professor and Head of Semiconductor Optoelectronics and Nanotechnology Group, Australian National University; President, Australian Academy of Science

Professor Atul Khosla, Vice Chancellor, Shoolini University

Dr. Angela Lehmann, Senior Director: Global Engagement and Policy, Universities Australia

Dr. Pankaj Mittal, Secretary General, Association of Indian Universities

Dr. John Morrison, Director, Australian National Fabrication Facility

A/Professor Haripriya Rangan, Principal Consultant, Government Projects, Australia India Institute

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Professor Sharath Sriram, Professor of Engineering, RMIT; President, Science & Technology Australia

Mr George Thiveos, Minister-Counsellor (Education and Research) for South Asia, Australian Government Department of Education

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THEMATIC AREA CO-LEADS

ENERGY TRANSITIONS AND CLIMATE CHANGE

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Mr Rajat Verma, Founder and CEO, LOHUM Cleantech, India

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Mr Deepak Gadhia, Chairman & Managing Director, Sunrise CSP India

Mr Alok Kumar, Director General, All India Discoms Association & Partner, The Lantau Group

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Dr. Keith Lovegrove, Managing Director, ITP Thermal

Distinguished Professor (Scientia) Deo Prasad AO, School of Built Environment, University of New South Wales

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Dr. Joanne Loh, Group Leader – Critical Minerals, CSIRO

Professor Sapna A. Narula, Director, National Institute of Agricultural Marketing, Ministry of Agriculture, Government of India

Shri Anshoo Pandey, Director, National Critical Mineral Mission, Ministry of Mines

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Dr. Harish Ramani, Chief Executive & Technology Officer, Tevel Cyber Cops

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Dr. Shridhar Murlidhar Rao Kadam, Director of the Indian Institute of Public Health, Bhubaneswar

A/Prof Tamara Mackean, Associate Professor of Aboriginal and Torres Strait Islander Public Health Research, College of Medicine and Public Health, Flinders University

Dr. Shreelata Rao Seshadri, Professor and Director, Ramalingaswami Centre for Equity and Social Determinants, Public Health Foundation of India, Bengaluru

WORKSHOP RECORDINGS & PROGRAMS

Available here: www.aii.unimelb.edu.au/australia-india-research-collaboration-framework

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