SCHOOL OF APPLIED SCIENCE

BIENNIAL REPORT 2024 25 26

01 MAY 2024 TO 30 APR 2026



Celebrating 25 Years of Excellence

Temasek POLYTECHNIC

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CREATING TOMORROW WWW.TP.EDU.SG/ASC

SCHOOL OF APPLIED SCIENCE

Celebrating 25 Years

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SCHOOL OF APPLIED SCIENCE



Celebrating 25 Years

CREATING TOMORROW

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SCHOOL OF APPLIED SCIENCE



SCHOOL OF APPLIED SCIENCE (ASC)



Through authentic industry projects, students work alongside scientists, gain exposure to real-world challenges and strengthen their practical capabilities through **Learning Enterprises (LE)**.

This immersive and industry-connected approach equips students with the knowledge, skills and confidence to grow as future scientists.



Our **mission** is to prepare school-leavers and working adults for a future of dynamic change, with relevant knowledge, life-long skills, character, and a thirst for continuous improvement. We **envision** being a world-class institution in the global education network, reputed for our programmes, applied research, managerial excellence and innovative corporate culture.

The **School of Applied Science (ASC)** at Temasek Polytechnic (TP) empowers the next generation of scientists through education and research in food, chemical, healthcare and life sciences.

Home to **5 diploma courses** and **a Common Science Programme (CSP)**, ASC offers an applied learning environment where education extends beyond the classroom and laboratory.



Our exclusive **ASPIRE** Programme is designed to nurture and challenge our high-achieving students, offering them opportunities for advanced learning, leadership development, overseas trips, mentorship and scholarship opportunities.



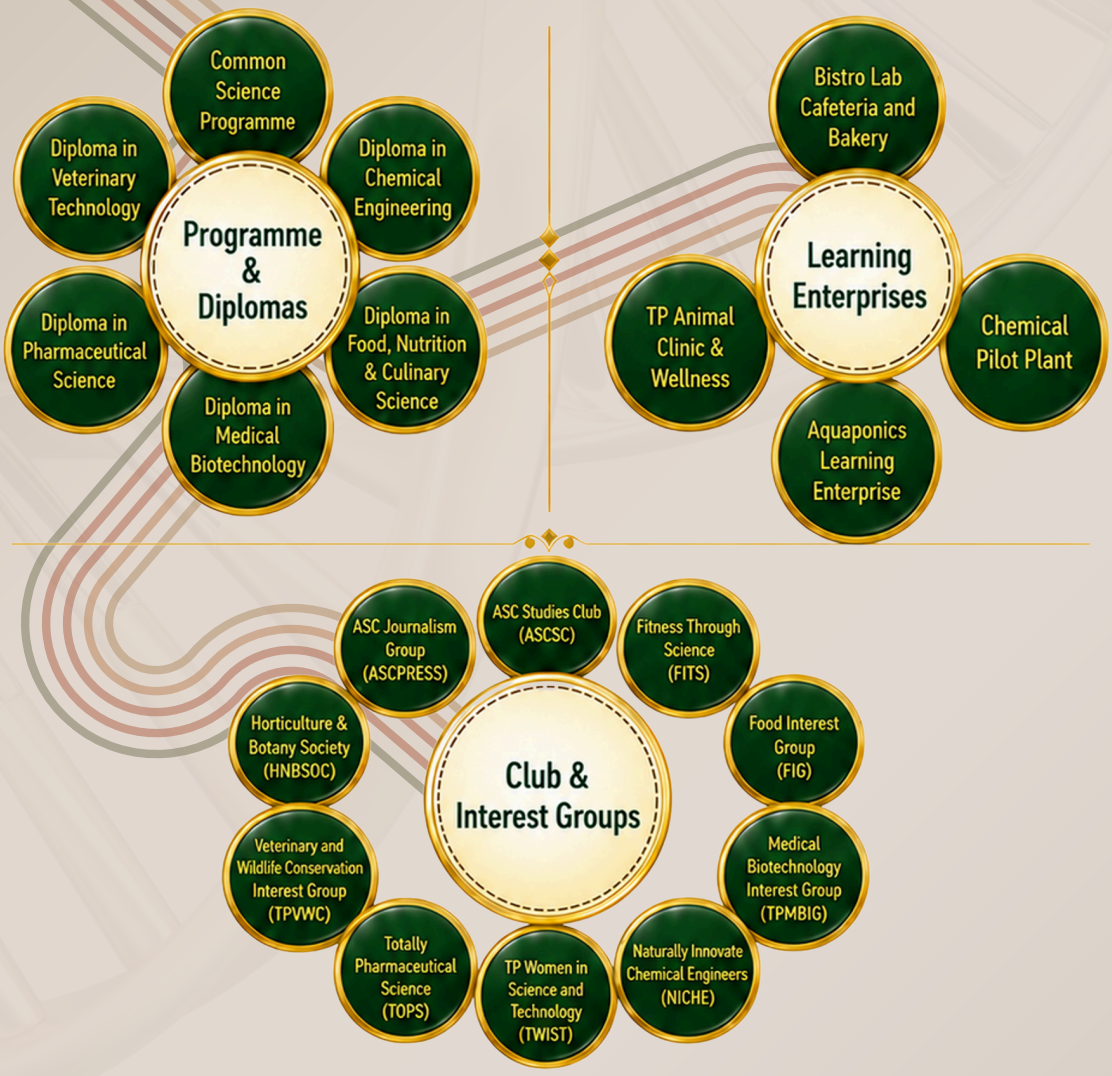
SCHOOL OF APPLIED SCIENCE

Nurturing Tomorrow's Scientists. Temasek Polytechnic (TP)'s School of Applied Science (ASC) focuses on food, chemical, healthcare and life sciences. ASC offers a spectrum of opportunities for hands-on learning.



● *APEC Centre for Sustainable Development in Agriculture & Fishery Sectors*

\# *Centres are part of the national ecosystem e.g. Centres of Innovation (COIs)*



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WHY TP SCHOOL OF APPLIED SCIENCE?

In this conversation, 2 leaders - Temasek Polytechnic (TP)'s Principal & CEO, Mr Patrice Choong and School of Applied Science (ASC)'s Director, Dr Goh Lay Beng - explore the strategic shifts over the past 2 years.

KEY STRATEGIC SHIFTS IN THIS BIENNIUM

What differentiates TP's approach to applied science education in a crowded global landscape? What are the key strategic shifts the school has made in this biennium to stay ahead of industry needs?



"There is a natural tension in applied science education. When professionals move from industry into teaching, their industry relevance begins to decline. As scientists hang up their lab coats to take on the mantle of an educator, it is almost inevitable that a gap opens between what they teach and what industry actually needs.

At ASC, our **domain structure** is specifically designed to counter this. We place deliberate emphasis on maintaining a balance between applied research, industry projects, and teaching. Our faculty doesn't just teach applied science. We continue to practise it, **staying connected** to real problems and current methods through active research and direct industry engagement. This is not an easy balance to sustain. But it is precisely what sets ASC apart."

Mr Patrice Choong
Principal & CEO, Temasek Polytechnic



"Be it teaching, training or research, ASC prioritises **industry needs** - shaping what's next versus playing catch-up. With this in mind, one key strategic shift has been to go from looking "inside out" to **"outside in"**. "Inside out" means starting from our own capabilities, then finding where they fit in the world. "Outside in" means asking "What does the world need?" "What's shifting?" "How might we change?" These days, if the project is exciting and meaningful, we'd say "yes" first, then figure out the "how". This has given us amazing opportunities to learn new things and **develop new capabilities**.

One example was when colleagues embarked on the "Novel Protein Pet Food" innovation project, which crosses the domains of veterinary science, nutrition, and future foods at our school. This area of work is now gaining traction. Another key strategic shift was to go from "prospecting" to "gravitational" in growing **industry partnerships**. We've seen how doing the right things right helps build a reputation of reliability that attracts like-minded partners. Recently, our school was invited to partake in research grant applications with the National University of Singapore and the Nanyang Technological University. These have boosted our total research grants to more than **$7 million** in 2025."

Dr Goh Lay Beng
Director, School of Applied Science



If a project is exciting and meaningful, we say yes first, then figure out how. This has given us amazing opportunities to learn new things and develop new capabilities.

Dr Goh Lay Beng
Director,
School of Applied Science,
Temasek Polytechnic

SCHOOL OF APPLIED SCIENCE

CELEBRATING 25 YEARS OF EXCELLENCE



Celebrating 25 Years

CREATING TOMORROW

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SCHOOL OF APPLIED SCIENCE



National Record for School of Applied Science's 25th Anniversary

As part of ASC25 celebrations, ASC achieved a proud milestone by earning a **Singapore Book of Records** title for the **Largest Cake Mosaic Display**. Led by students from the Diploma in Food, Nutrition & Culinary Science (FNC), together with ASC's learning enterprise, Bistro Lab Cafeteria and Bakery, the team baked, decorated, and assembled 468 six-inch chocolate cakes into a spectacular 1.9 m × 5.5 m mosaic on 30th January 2026.







The cakes were specially developed to be **low-glycemic-index (GI)**, no-added-sugar, gluten-free, and higher in protein, demonstrating ASC's commitment to combining culinary innovation with healthier food solutions.



Mr Ong Eng Huat, Founder and President of the Singapore Book of Records, was present to conduct the official measurement and verification. After confirmation, the **National Record certificate** was issued and presented to Dr Goh Lay Beng.

The initiative also served a meaningful community purpose, with approximately 300 cakes sold and a final **donation** of $4,730 to Hao Ren Hao Shi Ltd. This charity makes a difference to the lives of low-income families, while promoting the spirit of volunteerism amongst youth and communities.

CELEBRATING 25 YEARS OF ASC
OUR PEOPLE, OUR LEGACY, OUR FUTURE

GROWTH

INNOVATION

TRANFORMATION

PARTNERSHIPS

2000 2005 1-5

Applied Science School (ASC) was established in 2000

- ASC spun off from the Information Technology and Applied Science School (ITAS)
- 5 diplomas (Diplomas in: Applied Food Science & Nutrition, Biotechnology, Biomedical Science, Chemical Engineering, and Consumer Science & Technology)
- TP Hydroponics Greenhouse established with Orchid Growth System
- Lab Animal Workstation expanded to Temasek Animal Facility
- Food Preparation Lab and Food Product Development Lab established
- Koolwerk Learning Enterprise (LE) established
- 1st Glycemic Index (GI) testing of fruits & vegetables conducted
- Capability development in Traditional Chinese Medicine (TCM) analysis
- Institutional Animal Care & Use Committee formed

Mrs Soon-Ong Meng Wan
Appointed as 1st Director (2000)

School Advisory Committee (SAC)
1st meeting (2001)

2006 2010 6-10

SAC-SINGLAS Accredited Labs

- 3 Diplomas in Baking and Culinary Science, Veterinary Technology, and Pharmaceutical Science launched
- Temasek Applied Science Research Centre (AS4) established
- Training unit established for mass production of tissue culture plantlets
- Singapore's 1st low glycemic index bread formulated
- Differential Research Programme (DRP) launched
- Bistro Walk Learning Enterprise (LE) established
- Asian, Bakery/Pastry and Western Kitchens established
- Glycemic Index Research Unit (GIRU) established
- Singapore Laboratory Accreditation Scheme (SINGLAS) accredited for Chemical, Biological & Functional Food Testing (GI Testing).

SAC-SINGLAS accredited Chemical, Biological & Functional Food Testing (GI Testing) - *(2008, 2009)*

Dr Lee Chee Wee
Appointed as Director (2010)

2011 2015 11-15

Rebranded to School of Applied Science (ASC)

- Temasek Applied Science School rebranded as Temasek Polytechnic's **School of Applied Science (ASC)**
- TP Animal Clinic Learning Enterprise (LE) established
- 1st Centre of Excellence, Centre for Applied Nutrition Services (CANS), was established
- 3 CET Diplomas in Applied Science (Chemical Technology), (Forensics), and (Aquaculture) launched
- 3 Specialist Diplomas in Environment & Water Technology, Biopharmaceutical Technology, and Laboratory Management & Instrumentation launched
- Deli Delite Training Food Kiosk (LE) established
- 1st Agilent Partner Laboratory in the South Asia Pacific and Korea region
- GI testing of 100 local foods for Singapore's 1st local Asian food GI database
- Toxicology lab at TP by InvitroCue established
- BOOST (Biologics Overseas Skills Training) programme (in conjunction with WDA and EDB) launched

2016 2020 16-20

The Centres of Innovation were established

- Village Cafe, Social Learning Enterprise (LE) established
- Diplomas redesigned (Food, Nutrition & Culinary Science, and Medical Biotechnology)
- Bistro Lab Training Cafeteria and Production Kitchen Facility (Learning Enterprise) established
- Centre of Innovation for Complementary Health Products (COI-CHP) established
- Centre for Research and Opportunities in Plant Science (CROPS) established
- Centre for Aquaculture & Veterinary Science (CAVS) established
- Centre for Traditional Medicine (CTM) established
- Centre for Molecular Diagnostics (CMD) established
- Centre for Urban Sustainability (CUS) established
- Aquaculture Innovation Centre (AIC) established
- East Wing Teaching Laboratories established

Dr Goh Lay Beng
Appointed as Director (2019)

President's Award for Teachers
Ms Tan Lay Khee (2018)

2021 2025 21-25

National & Global Recognition

- Many new CET courses launched in partnership with industry
- Centre of Innovation - Food Manufacturing (FM-COI) established
- Centre of Innovation for Built Environment-Advanced Materials (COI-BEAM) established
- Urban Agriculture Centre of Innovation (UA-COI) established
- Experiential Learning as new pedagogy launched
- Aquaponics Learning Enterprise (LE) established
- Chemical Pilot Plant (CPP) established
- TP-LLR Pilot Biorefinery Facility (Industry on Campus) established
- Industry & Course Advisory Panel (ICAP) formed
- Partners Appreciation Night (PAN2025) launched

ASPIIRE Programme
Launched (2025)

World Skills Gold Award
Mr Teo Jun Yang Jonathan (2024)

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SCHOOL OF APPLIED SCIENCE

III. LEADERSHIP & GOVERNANCE



Celebrating 25 Years

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SCHOOL OF APPLIED SCIENCE

MEET OUR LEADERS

Comprising distinguished industry leaders and experts, ASC's School Advisory Committee (SAC) helps shape the School's strategic direction, strengthen industry partnerships, and ensure its programmes remain relevant, future-ready, and aligned with evolving sector needs.

SCHOOL ADVISORY COMMITTEE (SAC) MEMBERS

Appointed between 01 May 2026 and 30 April 2029

Ms Farhana Mansoor Nakhooda	GM/Senior Vice President - Health Catalyst Asia Pacific	Chairperson
Dr Goh Lay Beng	Director - School of Applied Science, Temasek Polytechnic	Deputy Chairperson
Ms Magdeline Hor	Senior Manager - School of Applied Science, Temasek Polytechnic	Secretary
Mr Allan Choo	Operations Director - Kwong Cheong Thye Pte Ltd	Member
Dr Chang Siow Foong	Director-General - Animal & Veterinary Service, National Parks Board	Member *(reappointed)*
A/Prof Chew Fook Tim	Associate Professor - National University of Singapore	Member
Mr Darren Tan Min Heng	Deputy Director - Hospital and Operations Planning, Eastern General Hospital, SingHealth	Member
Ms Jessica Cheam	Founder and CEO - Eco-Business	Member
Ms Lee Hee Hoon	Director - Allied Health, Ng Teng Fong General Hospital	Member *(reappointed)*
Mr Lu Jin Ping	Chairman - Asia Laboratories Pte Ltd, Singapore	Member *(reappointed)*
Mr Marcus Lim	CEO - Nexus Ecosystems Pte Ltd	Member
Mr Mashhad Dohadwala	Projects & Tech Director - Aster Chemicals & Energy Pte Ltd	Member
Mr Melvin Chow	Senior Director - Agrifood Technology Division, Singapore Food Agency	Member *(reappointed)*
Ms Poh Hwee Tee	Country President - Novartis (Sg) Pte Ltd	Member
Dr Shawn Ng	Founder & Managing Partner - NSQ Capital	Member *(reappointed)*
A/Prof Wong Shin Yee	Associate Professor - Singapore Institute of Technology	Member
Dr Xie Shangzhe	Vice President, Veterinary Healthcare and Scientific Programmes, Mandai Wildlife Group	Member

SCHOOL ADVISORY COMMITTEE (SAC) MEMBERS

Appointed between 01 May 2023 and 30 April 2026

Ms Farhana Mansoor Nakhooda	Senior Vice President - Health Catalyst Asia Pacific	Chairperson
Dr Goh Lay Beng	Director - School of Applied Science, Temasek Polytechnic	Deputy Chairperson
Ms Magdeline Hor	Senior Manager - School of Applied Science, Temasek Polytechnic	Secretary
Dr Chang Siow Foong	Director-General - Animal & Veterinary Service, National Parks Board	Member
Dr Cheng Wen Haur	Deputy CEO - Chief Life Sciences & Operations, Mandai Wildlife Group	Member
Ms Jessica Cheam	Founder and CEO - Eco-Business	Member
Mr Jeffrey Tan Choong Cher	Director - DISHTHEFISH Pte Ltd	Member
Mr John Cheng	Founder - Innovate 360 Pte Ltd	Member
Ms Lee Hee Hoon	Director - Allied Health, Ng Teng Fong General Hospital	Member
Assoc. Prof Lita Chew	Director, Allied Health and Pharmacy, National Cancer Centre Singapore	Member
Ms Lisa Liaw	Founder & CEO - Biological Gamechangers Pte Ltd	Member
Er Lucas Ng Hong Kiang	Consultant - LUKE Operations Excellence & Sustainability Consultancy	Member
Mr Lu Jin Ping	Chairman - Asia Laboratories Pte Ltd, Singapore	Member
Mr Melvin Chow	Senior Director - Agrifood Technology Division, Singapore Food Agency	Member
Mr Mock Siew Fai	Site Leader - INEOS Phenol Singapore Pte Ltd	Member
Dr Ong Siew Kim	Senior Principal Medical Laboratory Scientist - Pathology, Sengkang General Hospital	Member
Prof Paul Teng	Managing Director & Dean - National Institute of Education International Pte Ltd	Member
Dr Shawn Ng	Founder & Managing Partner - NSQ Capital	Member

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MEET OUR LEADERS

We prepare our learners for Experiential Learning and Industry-relevant Training that go beyond textbooks. With guidance from industry practitioners and our expert faculty members, our learners will grow with us professionally.

SCHOOL OF APPLIED SCIENCE (ASC) MANAGEMENT STAFF - *AS OF APRIL 2026*

Dr Goh Lay Beng	Director
Dr Kalpana Bhaskaran	Deputy Director / Industry Partnership (IP)
Dr Loh Gin Hin	Deputy Director / Quality Development & Planning (QDP)
Dr Maisha Foo	Deputy Director / Academic Development (AD)
Mr Tan Keng Beng	Deputy Director / Student Development (SD)
Dr Wuang Shy Chyi	Deputy Director / Technology Development (TD)
Dr Diana Chan	Head / Aquaculture Innovation Centre (AIC)
Dr Edmund Tian Feng	Head / Centre for Complementary Health Products (CCHP) *[rebranding of centre]*
Dr Jiang Fengli	Head / Centre for Aquaculture & Veterinary Science (CAVS)
Dr Miao Huang	Head / Centre for Urban Sustainability (CUS)
Dr Patel Kadamb Haribhai	Head / Centre for Research & Opportunities in Plant Science (CROPS)
Mr Bong Chee Keong	Domain Chair / Water Technology (WT)
Dr Kalpana Bhaskaran	Domain Chair / Glycemic Index Research Unit (GIRU)
Dr Rufaihah Abdul Jalil	Domain Chair / Future Foods (FF)
Dr Saravanan Padmanabhan	Domain Chair / Health and Disease Management (HDM) *[new appointment]*
Dr Zhang Pengchi	Domain Chair / Education R&D (ED) *[new appointment]*
Dr Clara Teo	Course Chair / Common Science Programme (CSP)
Ms Johanna Tan	Course Chair / Food, Nutrition & Culinary Science (FNC)
Dr Lee Yun Hwa	Course Chair / Medical Biotechnology (MBT) *[new appointment]*
Dr Low Ji Zhen	Course Chair / Veterinary Technology (VET) *[new appointment]*
Ms Shahedah Md Ali	Course Chair / Pharmaceutical Science (PHS)
Mr Zacchaeus Siew Yong Pau	Course Chair / Chemical Engineering (CHE)
Dr Jiang Li	Senior Manager / Technical & Infrastructure Support (TI)
Ms Magdeline Hor	Senior Manager / Academic Development (AD)
Mr Wong Weng Wai	Senior Manager / Centre for Applied Nutrition Services (CANS) *[new appointment]*

PREVIOUS APPOINTMENTS - *AS OF MAY 2024*

Dr Edmund Tian Feng	Head / Centre of Innovation for Complementary Health Products (CCHP)
Ms Loh Win Nie	Acting Head / Centre for Applied Nutrition Services (CANS)
Dr Loh Gin Hin	Domain Chair / Education R&D (ED)
Dr Chan Giek Far	Course Chair / Medical Biotechnology (MBT)
Ms Valerie Koh	Course Chair / Veterinary Technology (VET)

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LEADERSHIP DIALOGUE

In this strategic conversation, our three leaders explore what "relevance" means today and what it will demand tomorrow.

DEFINING RELEVANCE IN AN EVOLVING WORLD

Applied science is evolving rapidly, from cross-disciplinary innovation to systems transformation. What does 'relevance' mean for a school like ours today?

"**Relevance** is not a fixed idea. Its notion changes as the world evolves. But I think it helps to think to recognise that relevance has two dimensions: one that **endures**, and one that **shifts**.

What endures are the attributes, life skills, and mindsets we cultivate in our students: **Resilience**, resourcefulness, critical thinking, teamwork, a growth mindset, an entrepreneurial spirit. These don't expire. They are what allow our graduates to navigate uncertainty and create value no matter what the landscape looks like.

What shifts are the technical skills, tools, techniques, and technologies we teach. These must keep pace with **industry** and **society**. For a school like ASC, relevance means being intentional about building both dimensions into our curriculum.



We anchor students in enduring human capabilities while continuously updating the technical competencies they graduate with. That combination is what makes our graduates not just employable today, but **adaptable** for whatever comes next."

Mr Patrice Choong
Principal & CEO,
Temasek Polytechnic

"I would add that relevance also means **responsiveness**. In the past two years, we have deliberately shifted towards areas such as speciality chemicals, synthetic biology, alternative proteins, novel food product development with new ingredients, and bio-factories. This is not about following academic trends but to address industry imperatives."



Dr Goh Lay Beng
Director,
School of Applied Science

"From an industry perspective, the test of relevance is straightforward: can our graduates and our applied research **solve real problems** at the scale industry needs? ASC has made strong progress across healthcare, food, chemical, and life sciences; the harder next step is adoption, which today turns not just on cost and consumer acceptance but also on clinical evidence, regulatory readiness, and how well a solution fits into existing systems and workflows. For a school like ours, relevance therefore means producing graduates and innovations that don't just work in the lab, but travel into the real world and stick."



Ms Farhana Nakhooda
Chairperson,
School Advisory Committee

Relevance means producing graduates and innovations that don't just work in the lab, but travel into the real world and stick.

Ms Farhana Nakhooda

Chairperson, School Advisory Committee,
School of Applied Science,
Temasek Polytechnic

Senior Vice President
Health Catalyst, Asia Pacific



SCHOOL OF APPLIED SCIENCE

IV. RESEARCH & INNOVATION



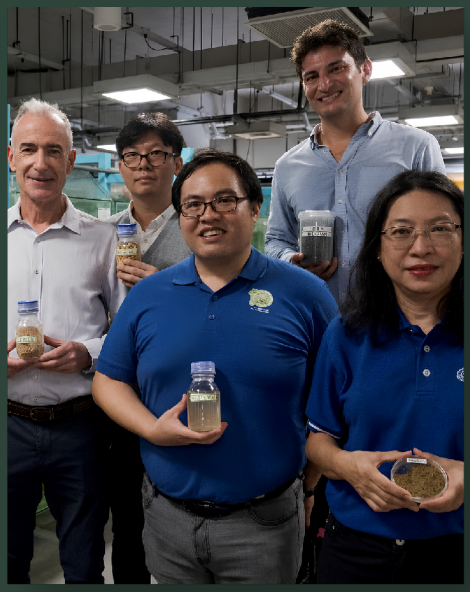
CENTRE OF INNOVATION

AIC

AQUACULTURE INNOVATION CENTRE

AIC strongly supports the aquaculture industry in its productivity needs and aquabusiness objectives through project consultancies, extension services, technology licensing, applied research and technology development.

MICROBIAL PROTEIN FROM WASTEWATER



"The use of a cultivated protein is new to aquaculture production", say the scientists from the Singapore Centre for Environmental Life Sciences Engineering (**SCELSE**), leading Nanyang Technological University (**NTU**)'s and AIC's efforts in the study.

Farmed aquaculture species rely heavily on feed made from wild-caught fish, known as fishmeal, which is unsustainable and contributes to **overfishing**.

Single-cell protein, a **sustainable alternative**, can be cultivated from food-processing wastewater. The wastewater contains **probiotic organisms** with potential for healthy fish growth.

NATIONAL BROODSTOCK SUPPORT



AIC strengthened Singapore's aquaculture capability as Operating Partner with Singapore Agro-Food Enterprises Federation (**SAFEF**) for the National Broodstock and Hatchery (Marine Tilapia).

Through gap analysis, responsible care and husbandry guidance, quarantine support and prophylactic treatment for incoming brooders, AIC helps ensure **pathogen-free brooders** before breeding.

AIC and SAFEF have also co-organised practitioner training for coastal and land-based farms, deepening industry capability in **fish and shrimp care**, health and husbandry.

MUD CRAB TECHNOLOGY TRANSFER



AIC has been working with **AQUAST Pte Ltd** to support its transformation from wholesale seafood trading to sustainable mud crab farming in **Brunei** Darussalam.

The company licenses TP's mud crab **hatchery technology** through AIC and will sign a land lease for about 7 hectares in the mangrove zone with the Bruneian authority later this year.

By tapping into the natural ecosystem, the integrated mangrove **mud crab farming model** extends TP's applied aquaculture impact across the region.

CENTRE OF EXCELLENCE

CROPS

CROPS' mission is to accelerate the translation of plant science through partnerships with stakeholders in the Agrotech ecosystem and to support urban farming industries.

CENTRE FOR RESEARCH & OPPORTUNITIES IN PLANT SCIENCE

SUSTAINABLE AGRI-FOOD SOLUTIONS



CROPS showcased TP's agri-food expertise at **Agri-Food Tech Asia Expo** in 2024 and 2025. At the Sandbox sessions in 2024, Dr Kadamb Patel shared sustainable urban agriculture solutions and key agri-tech pain points in Singapore.

Dr Ganapathy Rajaseger shared about seed priming, current practices and the need for **better seeds** amid unpredictable regional weather and abiotic stressors.

SINGAPORE-SHIZUOKA COLLABORATION



The Singapore-Shizuoka Agri-Food Forum, initiated by TP in 2020, held its sessions at Republic Polytechnic in November 2024 and December 2025, bringing together Institutes of Higher Learning (IHLs) RP, TP, NP, ITE, and the Shizuoka Prefecture Government to advance **urban agriculture research**, support for agri-tech SMEs, staff exchanges, and student exchanges.

The forum, themed "Climate-Smart Agriculture - Emerging Technologies for Sustainable Agriculture," was attended by the Vice Governor of Shizuoka and the CEO of the Singapore Food Agency. TP, RP, ITE, and Shizuoka Prefecture also signed an MOU (w.e.f. Apr 2025 - Mar 2030) to deepen R&D collaboration.

SEED INNOVATION HUB



Singapore's seed innovation capabilities will be strengthened through the **Seed Innovation Hub**, following the National University of Singapore (**NUS**)'s approved proposal under the **Singapore Food Story R&D 2.0 Programme**.

With an approved S$22 million budget, including indirect costs, for the period from 1 October 2025 to 30 September 2030, the initiative signals a national push for seed security and future food resilience. As a consortium partner, CROPS contributed to the project's design and experimental work over the past two years and will continue to partner with NUS as the programme advances.

SPECIAL FEATURE

AIC & CROPS

Food resilience and food security are essential to ensuring safe, nutritious and sustainable food access, while strengthening our readiness for future disruptions.

STRENGTHENING FOOD SECURITY FOR TOMORROW

WITH *AQUACULTURE INNOVATION CENTRE (AIC) AND CENTRE FOR RESEARCH & OPPORTUNITIES IN PLANT SCIENCE (CROPS)*

WELCOMING A ROYAL VISITOR TO CAMPUS ON 12 SEPTEMBER 2024



ASC had the honour of hosting **His Royal Highness Prince Haji Al-Muhtadee Billah Ibni Sultan Haji Hassanal Bolkiah Mu'izzaddin Waddaulah**, Crown Prince and Senior Minister at the Prime Minister's Office of Brunei Darussalam. The visit was led by **Ms Grace Fu Hai Yien**, Minister for Sustainability and the Environment, and **Mr Tuan Kee Aw**, Deputy Principal, Temasek Polytechnic.

The visit commenced with a tour of AIC, which showcased TP's contributions to the aquaculture industry, including innovations such as a d**isease pathogen detection kit** and a **feed-making laboratory**. The delegation then visited CROPS, where medicinal herbs and **plants cultivated in-house** were presented. The final stop was Temasek Gallery, located within TP's Library, where TP shared its work in **cellular agriculture**, focusing on sustainable food production through fish cell line development, 3D food scaffold printing, and bioreactor optimisation.

The visit also strengthened institutional ties between Singapore and Brunei Darussalam through the signing of three Memoranda of Understanding (MOU).

These includes partnerships with **Politeknik Brunei** to facilitate student and staff exchanges and expertise sharing; with the **International Association for Agricultural Sustainability** and the **Brunei Economic Development Board** to support the development of Brunei's aquaculture and agriculture sectors through an ASEAN Smart Aquaculture Hub; and with **Universiti Brunei Darussalam** to enhance cooperation in research, education, training, and industrial engagement, including the establishment of a Joint Laboratory Facility. Since the visit, ASC's support for Singapore companies' research activities in Brunei has intensified.



CENTRE OF EXCELLENCE

CAVS

CAVS is a purpose-built, innovative and technology-driven centre established to meet the needs of the aquaculture, pet, biomedical and veterinary industries.

CENTRE FOR AQUACULTURE & VETERINARY SCIENCE

AQUACULTURE BIOSECURITY



Securing MOE-TIF Funding for **Rapid Aquaculture Pathogen Detection** - The research proposal by Dr Amaladoss Anburaj, Dr Syed Musthaq Syed Khader, Dr Yu Yi (TP School of Engineering), and Ms Yushu Zheng has been awarded $527,280 in funding for a two-year project.

The project is titled “Development of a LAMP-CRISPR-Based eDNA Detection System for Rapid and On-site Diagnosis, Surveillance and Biosecurity of Aquaculture Pathogens”.

PARTNERSHIP WITH YANGZHOU UNIVERSITY



ASC hosted a delegation from **Yangzhou University**, led by Prof. Chang Guo Bin, Dean of the College of Animal Science & Technology. As part of the visit, a Memorandum of Understanding (MOU) was signed.

MOU marks the commencement of a strategic partnership to create new opportunities for overseas student exposure, staff exchange, research collaboration, and internships. The discussions were productive and reaffirmed both institutions’ shared commitment to innovation.

PURPLE PHOTOTROPHIC BACTERIA AS A FEED



ASC and **Nanyang Technological University** explored Purple Phototrophic Bacteria as a feed supplement for tilapia, linking aquaculture innovation with wastewater management.

In an 8-week feeding trial comparing 0%, 1% and 5% PPB concentrations, 1% PPB improved growth rate and feed conversion ratio, while 5% PPB increased immune markers including IgM, TNF-alpha and IL-8 but reduced growth and feed efficiency. The consultancy project highlights PPB’s potential as a **functional aquaculture feed additive** for fish growth and health.

CENTRE OF EXCELLENCE

CANS

CENTRE FOR APPLIED NUTRITION SERVICES

CANS provides real-world opportunities and a gateway to the industry for students from the Diploma in Food, Nutrition & Culinary Science. The Centre has been at the forefront of low Glycemic Index (GI) food product development, as well as in vivo and in vitro GI testing and research, for over two decades.

PERSONALISED NUTRITION FOR HEALTHY AGEING



Food Manufacturing Centre of Innovation (FM COI) Day convened 150 participants on 11 September 2025 at TP, positioning personalised nutrition as a key frontier for healthy ageing and gut health.

Supported by **Roquette Asia Pacific Pte Ltd**, the programme featured science led presentations, a panel discussion, technical solution pitches, showcase booths and the hands-on "From Ideas to Shelf" Product Ideation Workshop. The event strengthened CANS' role in connecting consumer insight, **nutrition science** and industry collaboration.

HEALTHIER EATING THAT IS CULTURALLY RELEVANT



On 21 September 2025, NHG Health and Tanoto Foundation launched "I Can't Believe It Tastes So Good", a cookbook featuring **100 healthy recipes** inspired by Singapore's Chinese, Malay, Indian, Western and other cuisines in celebration of SG60.

Graced by **Minister Ong Ye Kung**, the launch included an NHG Polyclinics cooking demonstration where residents and patients learnt healthier cooking tips from dietitians and patient advocates. Jointly funded under the **NHG Health Diabetes Reversal Programme**, the cookbook was curated by NHG Polyclinics clinicians and dietitians, in collaboration with CANS.

CANS AT THE SME CENTRE CONFERENCE 2025



The conference provided a valuable platform for CANS to showcase its solutions to SMEs and industry leaders, gain insights from talks and panel discussions on innovation, digitalisation and business growth, and engage with entrepreneurs and professionals within the SME ecosystem.

The event also provided opportunities to exchange ideas and explore potential collaborations with industry stakeholders. CANS extends its appreciation to the organisers and participants who visited the booth, contributing to meaningful discussions and strengthening connections within the **SME community**.

ASC DOMAIN

GIRU

GLYCEMIC INDEX RESEARCH UNIT (GIRU)

The GIRU has trail-blazed into the foray of assessing the quality of carbohydrates in local Asian foods - a first in Asia. This is the first and only facility accredited by Singapore Accreditation Council (SAC) to conduct GI testing and research using Singaporeans as human subjects to develop a local GI database.

33 COMPANIES (28 NEW) — **60** NEW FOODS

LOW GI, SUGAR-FREE, PLANT-BASED CAKES & WHIPPED CREAM



In collaboration with Delcies Desserts & Cakes, CANS & GIRU has developed gluten-free, Zero-sugar, Zero-Cholesterol, plant-based pound cakes and whipped-cream premixes.

The product has been tested to be **Low in Glycemic Index (GI)** and also nutritionally wholesome. Drawing on the GIRU team's expertise in low-GI ingredients and the CANS team's expertise in product development, we successfully developed this innovative product, the first of its kind in Singapore.

SUPPORTING THE LAUNCH OF A SUCCESSFUL "STEADY ENERGY" RELEASE FOREMOST INNERGY DRINK



Working in close collaboration with **Friesland Campina**, the GIRU team provided support with the product concept and formulation and designed and conducted the *in vivo* study to validate the RTD yoghurt's slow, sustained energy release. The product was subsequently **launched in all 7-Eleven outlets across Thailand**. This successful partnership demonstrates GIRU's strong capabilities in supporting industry through scientific research, product innovation, and evidence-based validation.



Diabetes, ageing and food security aren't single-discipline problems; they sit at the intersection of biology, behaviour, technology and systems. Applied science contributes most when those disciplines are pointed at the same problem together: nutrition, biotech and AI combining to prevent and manage diabetes; gerontech and clinical science improving how we age; aquaculture and food innovation strengthening food security across the region.



Ms Farhana Nakhooda

Chairperson, School Advisory Committee,
School of Applied Science,
Temasek Polytechnic

Senior Vice President
Health Catalyst, Asia Pacific

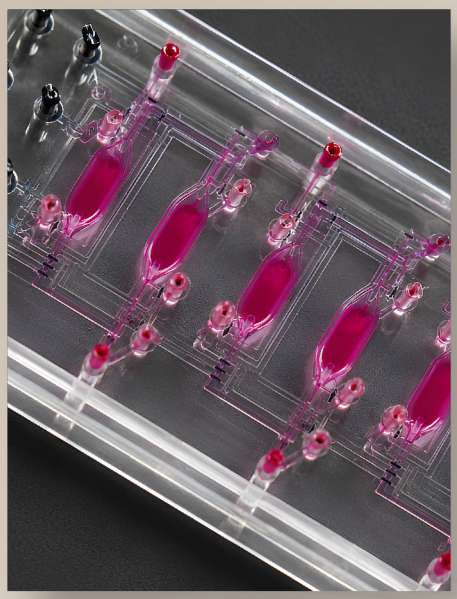
ASC DOMAIN

FFoods

FUTURE FOODS DOMAIN

FF domain provide innovative solutions to challenges in enhancing the nutritional quality, safety, and sustainability of food production. Our research areas include alternative proteins and synthetic biology.

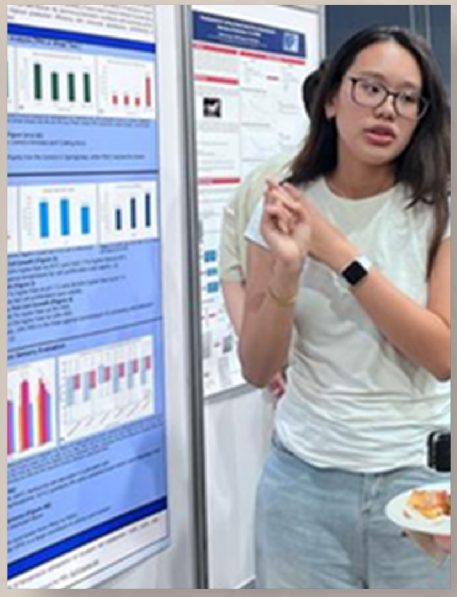
SINGAPORE FOOD STORY (SFS) R&D PROGRAMME



The **Singapore Food Story (SFS) R&D Programme** aims to accelerate food innovation in urban agriculture, aquaculture, future foods and food safety. ASC, Queensland University of Technology, Asia-Pacific Society for Cellular Agriculture, Meatiply Pte Ltd, Winovus Pte Ltd, and A*STAR successfully secured a **$965,874 grant** from this R&D Programme.

Led by Dr Louis Ong, the project will develop a modular liver-gut platform for advanced risk detection (Li-GuARD) liver-gut organ-on-chip (OoC) platform to **assess food safety**.

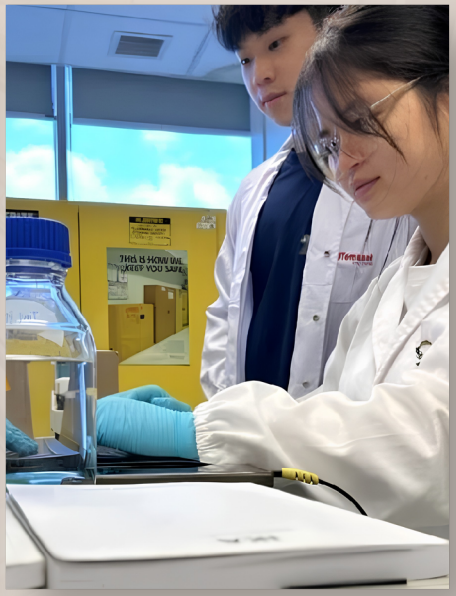
AWARD-WINNING STUDENT RESEARCH



ASC students Ms Ng Yi Xuan Chloe, Ms Lim Rui Xuan Lecia and Mr Caven Loo Jyn Xuan were involved in a project titled "Development of **Hybrid Plant-based Fishball** with Cultivated Fish Cells for Flavour Enhancement", which explores the innovative fusion of plant-based meat with our local delight, fishballs.

The project was presented at the Young Scientist Symposium (YSS), where the team received a **Certificate of Merit**.

STUDENT LEADERSHIP IN FUTURE FOODS



Co-founded by FF and APAC-SCA in mid-2024, the Student Chapter is a “by students, for students” platform for youth engagement in cellular agriculture.

Its activities include the inaugural symposium on 14 October 2024, an industry-level research poster showcase at **SGInnovate** on 23 January 2025, overseas learning journeys and the Cellular Agriculture Talent Development Programme 2025, supported by **Good Food Institute APAC** and four cellular agritech professionals and leaders as mentors.

ASC DOMAIN

FFoods

FUTURE FOODS DOMAIN

FF provides advisory and consulting services on cellular bioprocessing technologies, culinary applications, synthetic biology, and alternative protein nutrition in research and commercial industries.

ADVANCING CELLULAR AGRICULTURE



At Singapore International Agri-Food Week 2025 on 4 November 2025, TP signed a **tripartite MOU** with Republic Polytechnic and the Asia-Pacific Society for Cellular Agriculture at Sandbox 2, Marina Bay Sands.

The partnership advances education, applied research and outreach for **cultivated food**.

AFFORDABLE & SUSTAINABLE PROTEINS



On 23 October 2024, ASC students Ms Clarice Chua, Ms Natasha Nyan and Ms Lecia Lim were featured in **The Straits Times** for their work in future food innovation. Ms Chua and Ms Nyan were optimising **mammalian stem cell growth** in benchtop bioreactors, while Ms Lim was developing a hybrid product combining plant based ingredients with cultivated fish cells.

Their projects supported the development of more affordable, sustainable and **slaughter-free protein alternatives**, with the potential to reduce reliance on traditional meat sources and improve future food security.

FUTURE FOOD LEARNING BEYOND SINGAPORE



FFD launched the **Japan-TP Cultivated Meat Workshop** for 20 students from Kokusai High School in Japan and initiated a strategic dialogue with **Universiti Putra Malaysia** on Halal-certified cultivated and insect-based foods.

Together with invitations for ASC staff to speak at international future-food platforms, these engagements strengthened TP's regional and global visibility in emerging food science, safety and innovation.

CENTRE OF EXCELLENCE

CCHP

CENTRE FOR COMPLEMENTARY HEALTH PRODUCTS

Established in 2016 through a strategic partnership with Enterprise Singapore (ESG), CCHP has supported Singapore-based Complementary Health Product enterprises in addressing evolving industry needs. Following six years of ESG funding and support, CCHP transitioned in January 2026 to operate as Centre of Excellence, sustained through its own funding and projects.

NATURAL ANTIOXIDANT TECHNOLOGY



CCHP's technology, "Forecasting Edible Oil Shelf Life using Properties of Natural Antioxidants (**NATO**)," was showcased at TechInnovation 2024, IPI's Asia technology-matching platform.

Using a **machine-learning-powered model**, the technology predicts the peroxide value of peanut oil during storage. Project PI Dr Xuejia Xue and team member Ms Yuan Ting Chen showcased the work following publication of the study outcomes in a peer-reviewed international journal in June 2024.

HEALTH SUPPLEMENT RESEARCH



The Centre for Healthy Longevity, Yong Loo Lin School of Medicine, National University of Singapore (**NUS**), engaged CCHP as a project Co-PI for a study on **NMN health supplement products**.

The study found considerable disparities in the quality of geroprotective supplements, offering important insight into the health supplement landscape. The findings were accepted for publication in GeroScience as an original article in June 2024.

HSIAS WORKSHOP 2024



The Health Supplements Industry Association of Singapore organised the **HSIAS Workshop 2024** in May 2024, themed "ASEAN Health Supplement GMP Guidelines Workshop."

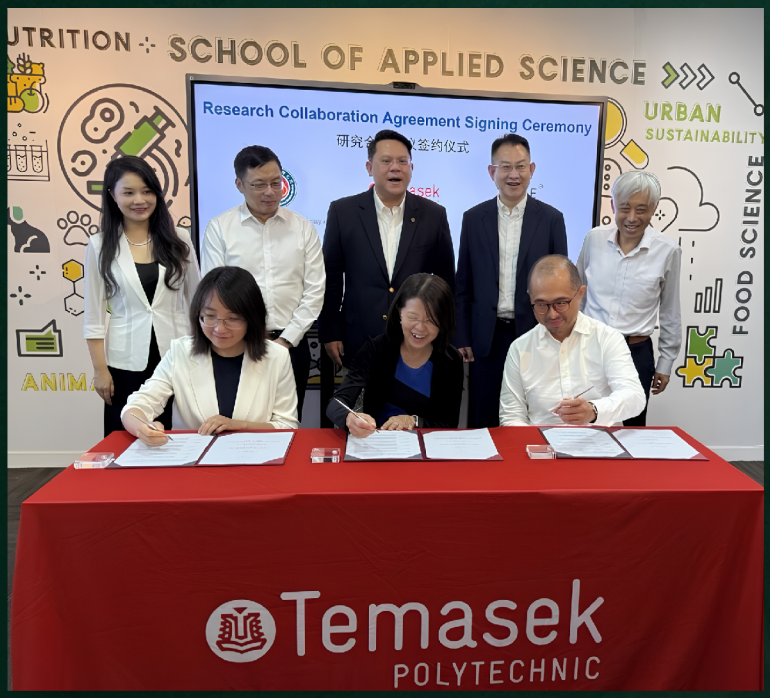
The workshop addressed industry challenges in complying with ASEAN GMP requirements and developing test methods for active compounds in health supplements. Dr Edmund Tian was invited to speak on novel test methods for health supplement products, reinforcing CCHP's contribution to regulatory science and industry capability-building.

SPECIAL FEATURE

CCHP

CCHP support enterprises in the provision of innovative and customised solutions to enhance the safety, efficacy and quality standards of complementary health products.

CHONGQING MUNICIPAL ACADEMY OF CHINESE MATERIA MEDICA



ASC marked the official signing of the **Tripartite Research Collaboration Agreement** between TP, the Chongqing Municipal Academy of Chinese Materia Medica, and Natura Biotechnologies Pte Ltd. The strategic partnership aims to co-develop an anti-dengue herbal formulation through in vitro and pre-clinical in vivo studies.

The signing was accompanied by insightful exchanges and strong support from all parties, reflecting a shared commitment to advancing innovation in Traditional Chinese Medicine (TCM). In his opening remarks, Mr Tuan Kee Aw (Deputy Principal, TP) highlighted Chongqing's rich history and longstanding heritage in TCM, including its **2023–2027 strategic pillars**, which offer areas for reflection, review and learning.

The **Chongqing delegation** was led by Mr Zhao Yong (Deputy Director of the Chongqing Municipal Health Commission and Director of the Chongqing Administration of Traditional Chinese Medicine); Mr Sun Xi Yong (Deputy Director of the Chongqing Municipal Commerce Commission and Deputy Director of the China-Singapore [Chongqing] Demonstration Initiative on Strategic Connectivity Administration Bureau); and Mr Zhang Qi (Deputy Director of the Traditional Chinese Medicine Development Division, Chongqing Municipal Health Commission).

The delegation provided valuable insights into the development and opportunities within **Chongqing's TCM sector**.



CENTRE OF EXCELLENCE

CUS

CENTRE FOR URBAN SUSTAINABILITY

CUS focuses on two R&D thrusts of Solid Waste Management and Recycling for Strategic Building Materials, and Food Waste Reduction and Recycling.

ANTI-SLIP INNOVATION



Dr Xu Wenyu received the **TP Safety & Security Award 2025** in October 2025 for leading the study and implementation of an anti-slip solution on high-risk smooth surfaces at TP.

Building on COI BE-AM's consultancy with **B-Team Construction Supplies Pte Ltd**, the team conducted a proof-of-concept at TP Plaza on 3 October 2024, supported by TP's Estates & Facility Management Department and independently assessed by Setsco Services Pte Ltd using the Wet Pendulum Test (SS485:2022). The solution achieved a British Pendulum Number of 63 and P5 classification.

TP-LIFE LAB BIO-REFINERY PILOT FACILITY



TP deepened circular economy innovation through its collaboration with **Life Lab Resources Pte Ltd** to launch the TP-Life Lab Bio-refinery Pilot Facility in April 2025.

Focused on converting **food waste** into valuable products such as feed ingredients, the facility provides a practical platform for applied research, industry collaboration and sustainable resource recovery.

LIVING LAB FOR SUSTAINABLE MATERIALS



COI BE-AM advanced sustainable building materials across TP through campus-based applications, including benches incorporating plastic waste and **3D-printed sculptures** made with sustainable materials.

These visible innovations show how applied research can move from the lab into everyday spaces, shaping greener and more sustainable built environments. In 2025, the CUS successfully licensed its Intellectual Disclosure Form technology, led by PI Dr Sook Fun Wong, for application in **eco park benches**.

ASC DOMAIN

WTech

WTD focuses on innovative, sustainable solutions for global water and wastewater challenges. Specialising in advanced treatment technologies, aquaculture systems, and chemical waste management.

WATER TECHNOLOGY DOMAIN

ADVANCING GREEN ENERGY THROUGH WASTE



From February 2024 to February 2027, TP is collaborating with **Alpha Biofuels (S) Pte. Ltd.** to convert waste cooking oil into biodiesel. Leveraging the Chemical Pilot Plant, the project advances industry-scale sustainable energy production while providing authentic hands-on training for Chemical Engineering students.

At the **National Day Parade 2024**, ASC's biodiesel powered the event generators, with Alpha Biofuels facilitating the effort. This meaningful application highlights the real-world relevance of ASC's sustainability efforts and its role in supporting lower-carbon solutions for major national events.

ADVANCING TP-RSN COLLABORATION



The TP-RSN (**Republic of Singapore Navy**) collaboration on the design and development of training aids using Water Technology and Additive Manufacturing Technology was initiated in 2026.

The project has a total budget of $198,800, comprising an ASC budget of $168,800. Our WT staff team comprises Mr Chee Keong Bong, Dr Zhi Huang and Dr Guimin Shi.

SMART WATER MONITORING



From November 2024 to July 2025, TP collaborated with **Airowater Pte Ltd**, with support from a **Mentorship Support Grant**, to develop a cost-effective, real-time water-quality monitoring system for its Atmospheric Water Generators.

Supporting sustainable drinking water under a **Water-As-Service model**, the system tracks pH, TDS, conductivity, turbidity, dissolved oxygen, total suspended solids, oxidation-reduction potential, and temperature, enabling automated quality control and remote mobile monitoring.

ACADEMIA & INDUSTRY

PARTNERSHIPS THAT MATTER & ARE TRULY VALUABLE

ASC's different Centres of Excellence collaborate with local and overseas industry partners to innovate marketable solutions and technologies through research and projects.

ASC's Centres of Excellence/Innovation

What makes a partnership truly valuable, beyond funding or projects? Where do you see the strongest opportunities for co-creation between academia and industry in the next phase?



"**Co-creation.** The best partnerships are not transactional; they are collaborative. Industry brings real-world constraints; academia brings depth and innovation. When both sides align early, outcomes are far more impactful.

The strongest opportunities are in applied AI for healthcare, sustainable food and manufacturing, and translational biotech — areas where industry has live problems and academia can bring talent and research depth. Co-creation must now move beyond sponsored projects towards joint problem-setting, co-designed curriculum, shared infrastructure and capstone work tied to **real industry roadmaps**."

Ms Farhana Nakhooda
Chairman, School Advisory Committee



"I would say: **Access, Advocacy,** and **Amplification**. We are ever grateful when a partnership opens access to new networks, endorses our capabilities, and together achieves greater heights. Such partners are invaluable! Continue to position TP as a **Living Lab**.

It would facilitate greater co-creation between academia and industry by demonstrating the effectiveness of our proprietary innovations on campus, making TP a **natural magnet** for innovation partnerships. Such opportunities are not limited to any vertical. Our walkways are paved with non-slip advanced and sustainable cementitious concrete, 3D-printed concrete signage reinforced with waste plastics, food innovations for preventive healthcare, and many more, where our imagination takes us."

Dr Goh Lay Beng
Director, School of Applied Science

SCHOOL OF APPLIED SCIENCE

V.

OUR ACADEMIC PROGRAMMES



Celebrating 25 Years

CREATING TOMORROW

WWW.TP.EDU.SG/ASC

SCHOOL OF APPLIED SCIENCE

OUR ACADEMIC PROGRAMMES

Full-time students and adult learners gain more exposure through our industry-aligned curriculum, which prepares them for various industry sectors such as food, nutrition, healthcare, pharmaceutical, aquaculture, and chemical industries.

PRE-EMPLOYMENT TRAINING (PET) & CONTINUING EDUCATION & TRAINING (CET)

ASC's Diplomas & Programme

As ASC celebrates its 25th Anniversary in 2026, our commitment to innovation extends beyond traditional diploma education to include executive-level programmes that address global challenges. Over the past biennium, ASC has introduced and enhanced a range of Continuing Education & Training (**CET**) short courses and part-time programmes for adult learners across subject areas such as food security, nutrition, sustainability, and workplace safety, demonstrating ASC's growing role as an international thought leader in applied science education.

Our full-time diploma programmes continue to deliver strong impact through healthcare partnerships, technology-enabled learning and purposeful community engagement. Our Pre-Employment Training (**PET**) courses for full-time students, focused on Common Science Programme (**CSP**), Diploma in Chemical Engineering (**CHE**), Diploma in Food, Nutrition & Culinary Science (**FNC**), Diploma in Medical Biotechnology (**MBT**), Diploma in Pharmaceutical Science (**PHS**), and Diploma in Veterinary Technology (**VET**), have advanced tertiary education by integrating digital innovation, artificial intelligence and authentic workplace learning to prepare industry-ready working professionals.





Pre-Employment Training (PET) enrolment and Continuing Education & Training (CET) hours

Total No. of Training Hrs for Adult Learners (CET)

AY2023/2024	114,326 hours
AY2024/2025	114,703 hours
AY2025/2026	137,866 hours

Total No. of Full-Time Students (PET) Enrolled

AY2023/2024	1407
AY2024/2025	1399
AY2025/2026	1374

OUR CET ACADEMIC PROGRAMMES

CET at TP supports adult learners, working professionals and mid-career individuals through part-time, upskilling and reskilling programmes such Part-Time Diploma/Post-Diploma, SkillsFuture Career Transition Programme, Work-Study Programmes and Short Courses.

NEW CET PROGRAMMES, COURSES & SPECIALISATIONS

(IN COLLABORATION WITH TEMASEK SKILLSFUTURE ACADEMY)



Advancing Sustainability - ASC now offers a 12-month **Specialist Diploma in Environmental Technology & Energy Sustainability** to support the continued growth of Singapore's new sustainable economy, particularly in energy management and sustainability. This programme aims to enable participants to achieve ASCEM accreditation upon completion.

This course aligns with another CET programme, the **Specialist Diploma in Environmental & Water Technology**, allowing for the expedited acquisition of dual specialist diplomas in environmental management, achievable in three semesters instead of four.

Strengthening Nutrition Training - ASC has delivered four customised runs of Basic Nutrition, Health & Wellness short courses for **Nu Skin**, one of the World's leading beauty and wellness device system companies. Conducted by our nutrition specialists, Dr Kalpana Bhaskaran, Ms Win Nie Loh and Ms Siti Saifa Hussain, the course has trained more than 100 Nu Skin Brand Ambassadors, totalling more than 1500 training hours.





Equipping STEM Educators for Safer Laboratories - ASC strengthened Science, Technology, Engineering, and Mathematics (STEM) teaching capability through the Laboratory Management and Safety Workshop, jointly conducted with the **Academy of Singapore Teachers** and the TP School of Engineering. The two-day programme trained 17 STEM instructors in March 2024, followed by 26 instructors in November 2025.

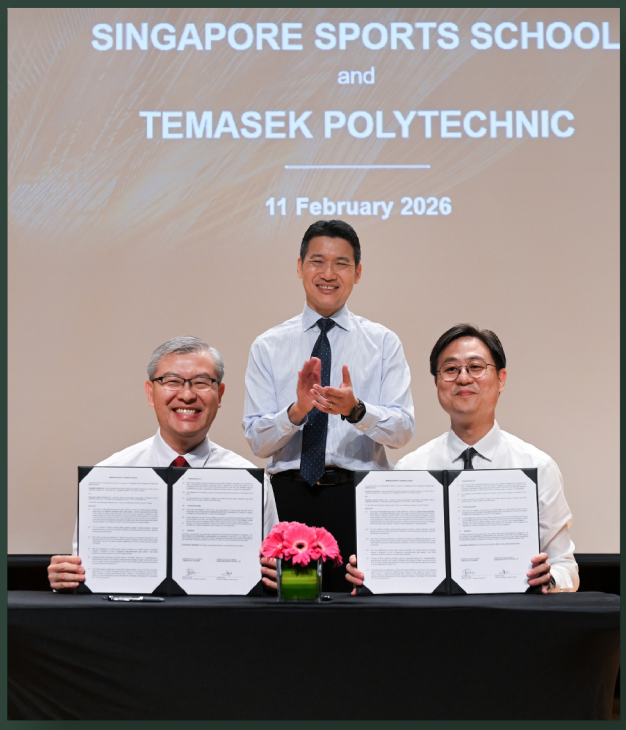
Sprout to Plate: Sustainable Growing and Cooking with Microgreens - This hands-on blended short course teaches learners how to grow and cook with **microgreens**. Learners will discover the benefits of these nutrient-packed greens and their role in sustainable living. Learners will plant their microgreens and explore how to harvest and incorporate them into simple, delicious dishes. Learners will be equipped to continue their journey of growing microgreens at home or in workplaces.



OUR PET ACADEMIC PROGRAMMES

Pre-Employment Training (PET) at ASC comprises of full-time programmes including 5 diploma courses and a Common Science Programme.

RECENT INITIATIVES & DEVELOPMENTS



On 11 February 2026, **Singapore Sports School** signed an MOU with TP to offer five diploma programmes from its ASC. The MOU was formally signed by **Mr Ong Kim Soon**, Principal of Singapore Sports School and **Mr Patrice Choong**, Principal of TP. The signing was witnessed by **Mr David Neo**, Acting Minister for Culture, Community and Youth & Senior Minister of State for Education, as the standing witness, at Sports School's 22nd Awards Night, where he graced the event.

From 2027, Sports School student-athletes can enrol in Chemical Engineering (CHE), Food, Nutrition & Culinary Science (FNC), Medical Biotechnology (MBT), Pharmaceutical Science (PHS), and Veterinary Technology (VET) diplomas under ASC. The joint diploma programmes will be athlete-friendly by design, supporting the holistic development of national athletes in both sport and academics. Classes will be customised and clustered in the afternoons to accommodate **national athletes** with very intensive training schedules.

FutureX: Advancing Futures Thinking in STEAM-H - In 2026, ASC is proud to be among the first institutes in Singapore to integrate **futures thinking**, evidence-based design thinking, venture creation, entrepreneurial mindset, pitching and AI prompt engineering into Science, Technology, Engineering, Art, Mathematics and Health (**STEAM-H**) learning.

Students from Serangoon Garden Secondary School, Tanjong Katong Girls' School, St Joseph's Institution, Institute of Technical Education, Nanyang Polytechnic, Republic Polytechnic, Singapore Polytechnic, and Temasek Polytechnic took part in immersive learning experiences that encouraged them to translate scientific knowledge into meaningful solutions and compelling pitches. Through the programme, students strengthened their ability to ask deeper questions, imagine new possibilities and design solutions with **real-world impact**.



OUR PET ACADEMIC PROGRAMMES

ASC Year 3 learners may also take on year-long internships and explore university pathways to further their academic and professional growth.

NEW STRUCTURED WORK-BASED LEARNING ELECTIVE CLUSTER



First introduced in 2013, **Elective Clusters (ECs)** allow students to deepen their knowledge and skills in their chosen specialisation, after which they will further apply and strengthen their competencies in their area of interest through a Student Internship Programme (SIP) and Major Project (MP) aligned with their chosen EC. In an effort to align with industry needs, ASC, alongside other schools, now offers up to 20 ECs, including **4 university pathways** and programmes, providing students with multiple academic and career pathways.

A significant enhancement to ASC's experiential learning is the **Structured Work-based Learning EC** established in April 2025. This EC is designed for students seeking deeper immersion in professional practice, to accumulate substantial hands-on experience, develop critical workplace soft skills, and build stronger industry relationships, thereby enhancing their employment prospects.





Ms Safiyyah Binte Salim, a Diploma in Pharmaceutical Science student, joined ASC through the Early Admission Exercise with a clear aspiration to pursue a career in the pharmaceutical and healthcare sector. In 2025, she was among four students selected for the pilot run of the Structured Work-based Learning EC. Following a rigorous selection process, Safiyyah was attached to **Procter & Gamble (P&G)** as an Associate Researcher Intern, where she completed a year-long internship.

Throughout the internship, she demonstrated strong technical competence, adaptability and professional maturity. The extended internship period allowed Ms Safiyyah to engage in continuous, hands-on research work and develop job-ready skills beyond what traditional short-term internships offer. Exposure to diverse research areas provided her with clarity and **confidence to pursue a future** in research-focused roles.





The year-long internship better prepared me for the workplace by allowing me to develop job-ready skills through continuous, hands-on research work and gave me clarity about my future career path.

- Safiyyah Binte Salim
Year 3 Student,
Diploma in Pharmaceutical Science

OUR PET ACADEMIC CSP

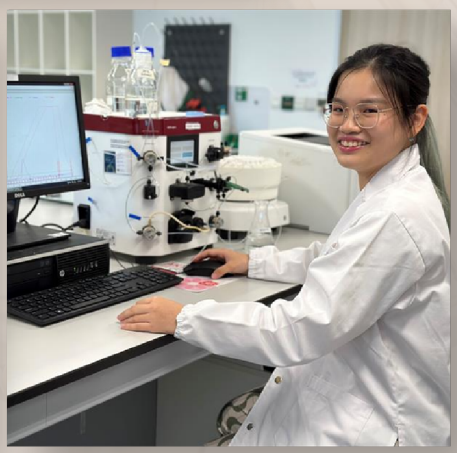
CSP is a learner's perfect launchpad to an ASC diploma. Designed for curious minds, this one-semester programme gives learners the time and space to explore different science disciplines and discover how they connect to their aspirations and real-world careers before choosing a diploma course.

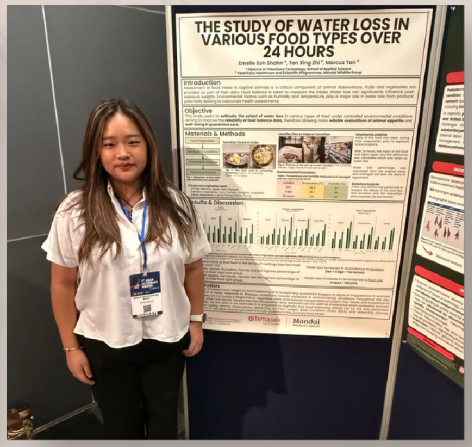
COMMON SCIENCE PROGRAMME'S HIGHLIGHTS



Approximately 140 students from the inaugural 2023 intake of the Common Science Programme (CSP) graduated in March 2026. This marks the first cohort of students who benefited from the ASC diploma courses through **Education and Career Guidance (ECG)** activities offered during the programme, before making their diploma course choice at the end of their first year. Through a broad-based curriculum, students uncover their strengths and interests in key areas of applied science.







"CSP students get to stretch out their tentacles to the different aspects of science and learn more about them while gaining insights and inspiration through modules and ECG activities. Being in CSP in my first year enabled me to be more informed and confident, helping me make optimal decisions for my future." - **Ms Alicia Hon**, CSP Student (graduated in 2026, with a Diploma in Pharmaceutical Science)

"CSP has allowed me to diversify my understanding of the individual courses before selecting the most appropriate diploma. It provided different experiential opportunities such as cooking pastries from the culinary lab prepared by the FNC course and other practicals offered by the other courses. Through these experiences, I was able to choose the course that best suited me." - **Ms Ng Qiao Yue Pearl**, CSP Student (graduated in 2026, with a Diploma in Chemical Engineering)

"The programme has provided me with a strong foundation for my course and has given me many opportunities to learn about the different courses I could choose from. The ECG activities ignited my interest in Veterinary Technology, and with guidance from my lecturers, I was able to make the right choice regarding my course selection." - **Ms Emelie Soh Shahn**, CSP Student (graduated in 2026, with a Diploma in Veterinary Technology)

PET ACADEMIC ARCHITECTURE

PROGRAMMES

ASC strengthened workplace readiness through bizSAFE Level 2 certification and interdisciplinary innovation, inculcating a strong safety-first culture and equipping students to apply science innovatively and uphold safe practices.

YEAR 1 COMMON SCIENCE CURRICULUM HIGHLIGHTS



Strengthening Workplace Safety Competencies - **Workplace safety** is a core professional competency across all science-related industries. Since the introduction of the Laboratory and Workplace Safety subject in April 2022, ASC has embedded industry-recognised standards into its curriculum. To date, more than 1,800 ASC students have attained the national **bizSAFE Level 2 certification**. bizSAFE helps students build practical workplace safety and health capabilities.

Through the programme, students learn the legal requirements under the **WSH (Risk Management**) Regulations, including how to develop a Risk Management Plan for a company and conduct Risk Assessments for workplace activities. This helps them foster safe, compliant, and responsible workplaces during internships and in future employment.

Interdisciplinary Learning (IDL) Showcase between ASC and Temasek Launchpad (TP Innovation & Entrepreneurship Department), bringing the **Nutrition & Health (NuH)** and **Innovation & Entrepreneurship (Innova)** subjects together. On 6 February 2026, the annual NuH & Innova's IDL Roadshow returned, transforming the ASC Concourse into a living and enterprising laboratory.

More than **430 first-year ASC students** showcased 79 prototype booths addressing pressing nutrition and health challenges in Singapore, from elderly nutrition and sodium reduction in hawker fare to alternative proteins. This was more than a showcase. TP students pitched, defended, refined, and responded in real time. They learned to translate science into enterprising solutions and to pitch ideas clearly under pressure. 6 teams were recognised for Best Overall Project and Best Booth Design, receiving badges from the ASC Director, Dr Goh Lay Beng.



ASC PET - DIPLOMA IN CHE

In this multidisciplinary field of mathematics, chemistry, physics, biology and engineering, learners will discover how raw materials are processed to create the products used in our daily lives. These include fuels, paints, biodegradable plastics, medicines, cosmetics, personal care products, food, and water.

DIPLOMA IN CHEMICAL ENGINEERING - HIGHLIGHTS



Strengthening University Pathways - To further support academic progression, the course team introduced **Pre-University Pathway Programmes (PPP)** in collaboration with the National University of Singapore (NUS). These programmes provide diploma students with early exposure to university-level learning and enable them to transfer credits upon enrolment after graduation.

To this end, two PPPs have been launched—Chemical and Biomolecular Engineering (CBE) and Environmental & Sustainability Engineering (ESE). In the pilot run, four students were offered enrolment under the National University of Singapore (NUS)'s Chemical and Biomolecular Engineering Programme. This reflects the programme's growing academic recognition in institutes of higher learning.

WorldSkills Singapore 2025 - ChE graduate Mr Choy Kian Ming, Gold Medallist in Water Technology at **WorldSkills Singapore 2025** and winner of the **TP Skills Mastery Award**, sponsored by Procter & Gamble International Operations SA Singapore Branch. Mr Choy delivered an outstanding performance at the **Water Skills Professional Competition** organised by DWA at IFAT, Munich, Germany, on 8 May 2026.

Competing alongside his teammate, Mr Elias from Germany, Mr Choy achieved 1st Place in Category 3, covering Measurement, Control, Regulation and Operational Monitoring, and 2nd Place in Category 4, focusing on Process Control. Most impressively, the duo clinched the **Overall Gold Medal** for the Wastewater Treatment Plant challenge, based on the combined results across Categories 3, 4 and 5. This achievement reflects Mr Choy's strong technical skills, international competitiveness and continued excellence in the field of water technology.



SPECIAL FEATURE

CPP

TP's new integrated Chemical Pilot Plant (CPP), housed within TP's School of Applied Science places an emphasis on applied learning and aims to equip our learners with skills for the future economy.

NEW CHEMICAL PILOT PLANT (LEARNING ENTERPRISE)



In May 2024, TP's new integrated Chemical Pilot Plant (CPP), housed within the School of Applied Science, was officially opened. This facility emphasises applied learning and aims to equip our learners with skills for the future economy. The new CPP was constructed to meet industry standards and provides relevant training for the Diploma in Chemical Engineering students.

ASC had the honour of welcoming the Minister for Education, **Mr Chan Chun Sing**, and the Senior Parliamentary Secretary for Education, Mr Shawn Wei Zhong Huang, to our CPP. At our CPP, students and staff from the Diploma in Chemical Engineering showcased how we're converting waste cooking oil into biodiesel, demonstrating our leadership in sustainable solutions.





The CPP offers a comprehensive view of the processes within a chemical plant. It is organised into **four sectors**: Biodiesel Production, Wastewater Treatment, Safety Training Sector, and Distributed Control Room. The plant features Augmented Reality for enhanced visualisation, immersive training, and interactive learning experiences. The CPP demonstrates TP's commitment to contributing to our nation's vision of achieving net-zero carbon emissions.

The CPP is the first industry-standard plant in an institute of higher learning in Singapore to convert waste cooking oil into biodiesel. An official service agreement has been signed between TP and **Alpha Biofuels** to collaborate in producing this biodiesel. This sector includes reactors and separation units such as liquid-liquid extraction, ion-exchange columns, gas absorption, and distillation columns.





Our faculty doesn't just teach applied science. They continue to practise it, staying connected to real problems and current methods through active research and direct industry engagement.

Mr Patrice Choong
Principal & CEO,
Temasek Polytechnic

SPECIAL FEATURE

CHE

AWARDS, EXCELLENCE & RECOGNITION

WorldSkills International (WSI) is a not-for-profit membership association whose mission is to promote the image of skills and skilled careers through competitions and exchanges for youths.

After clinching **Gold in Water Technology at WorldSkills Singapore 2023**, Mr Teo Jun Yang Jonathan from the Diploma in Chemical Engineering (CHE) underwent rigorous preparation under ASC's experts for the WorldSkills Competition 2024 in Lyon, France.



His preparation included overseas training at DWA in Stuttgart in May 2024 and participation in **Munich IFAT's World Water Skills Professional Competitions**, where he won.





Representing Singapore in September 2024, Mr Teo earned the **Silver Medal** in Water Technology and the **Silver Medal** in the Sustainability Practice Award, showcasing technical excellence on the global stage.

ASC PET - DIPLOMA IN FNC

FNC is the only course in Singapore that integrates three sectors – food science & technology, nutrition and culinary science, facilitating multidisciplinary learning.

DIPLOMA IN FOOD, NUTRITION & CULINARY SCIENCE - HIGHLIGHTS



Colorectal Cancer Awareness Bento Project - FNC students from the **Clinical Nutrition & Food Service Management Elective Cluster (EC)** brought learning to life through a collaborative project with the **Singapore Cancer Society**. Students created, produced, and sold bento sets designed to support gut health and prevent colorectal cancer.

Close to 280 Terri Yummy and Gut Fu bento sets were sold at the Bistro Lab learning enterprise. $1,179 was generated through student-led sales, and another $1,113 was raised through donations. A total of $2,292 was donated to the Singapore Cancer Society. Through this project, the students translated nutrition into practical, marketable meals, managed costing, production, and operations under real-world conditions, and delivered purpose-driven food innovation.

From textbooks to true immersion - FNC students deepened their understanding of renal nutrition through a meaningful learning experience that connected classroom theory with real patient care. **Renal dietitian Ms Grace Liew** delivered an insightful guest lecture on chronic kidney disease, renal nutrition management and the realities of renal replacement therapies. At the same time, Ms Daron Na led students on an immersive visit to **NKF Singapore's Kidney Discovery Centre**, where interactive exhibits brought complex kidney concepts to life.





Championing Dialysis-Friendly Nutrition - Organised and hosted by FNC, with support from **NKF Singapore**, the **Dialysis-Friendly Kitchen: Student Challenge Edition 2025** brought together 31 teams from Temasek Polytechnic, Nanyang Polytechnic and Singapore Polytechnic to create nutritious, affordable and practical dialysis-friendly meals. Held on 12 September 2025, the finals saw 8 teams apply renal nutrition knowledge and culinary skills beyond the classroom, with TP emerging as **Overall Champion** and winning Best Single Course Lunch and Best Snack.



SPECIAL FEATURE

FNC JOINT POL-ITE FOOD INDUSTRY FAIR 2026



On 29 April 2026, POL-ITE students, staff, and hackathon finalists from the Institute of Technical Education, Nanyang Polytechnic, Republic Polytechnic, Singapore Polytechnic, and Temasek Polytechnic came together for the **Joint POL-ITE Food Industry Fair 2026**, hosted by ASC.

This high-impact platform brought learning closer to the real world, connecting over **250 students with 15 leading companies** and organisations across food science, nutrition, agri/aquaculture, postharvest technology, nutraceuticals and culinary innovation.

15 participating companies, partners and organisations, including Cacao Social, Cargill, Centre Testing International Group (CTI), Dona Manis Cake Shop, FairPrice Group, FrieslandCampina Singapore, Lim Kee Food Manufacturing Pte Ltd, McDonald's Singapore, Mr Bean International, Nestlé Wyeth Nutritionals Inc., SATS Ltd, Seo Eng Joo Frozen Food, Sodexo Singapore, Tee Yih Jia Food Manufacturing and NKF Singapore, shared valuable industry insights with POL-ITE students and broadened their perspectives on the diverse career possibilities in the food and nutrition sector.





17 teams participated in the Food Hackathon: Designing Your Future and Food for the Year 2067, which brought together students from various polytechnics and ITE. Through workshops on evidence-based futures thinking, design thinking, and pitching, students gained valuable skills in imagining future food possibilities and translating ideas into innovative solutions.

5 teams received awards for their outstanding pitches and creative concepts. Sharkwave, one of the TP's teams, clinched the **Gold Achievement Award (3rd Prize)** for its bold, future-thinking concept: an advanced smart utensil set designed to enhance the perception of salty and sweet flavours.

ASC PET - DIPLOMA IN FNC

Learners get hands-on experience in our on-campus central kitchen and learning enterprise, they will learn to prepare healthy, delicious, market-ready and safe meals.

CELEBRATING OUR CULINARY SCIENCE EXCELLENCE



At the **Battle of the Chefs 2024 (Penang)**, a culinary competition organised by the Penang Chefs Association, Diploma in Food, Nutrition & Culinary Science (FNC) students Ms Seck Hui En Victoria and Mr Lin Junhong Adrian impressed the judges with their finesse and flair for the culinary arts. Mr Lin earned Gold in the duck category and Silver for seafood, while Ms Seck clinched Gold for seafood and Silver in the chicken category.

At the **Singapore Chefs' Association Culinary Excellence Awards** in July 2025, Singapore's top culinary talents were celebrated for pushing standards in the local dining scene. Among them was Mr Lin Junhong Adrian, who earned the title of Best Young **Chef of the Year** in the Male category, a proud recognition of his skill, creativity, and promising culinary potential.





Students and staff from FNC shone at the **Food & Hospitality Asia (FHA) 2025 Culinary Challenge**, one of the region's most prestigious culinary competitions, bringing home an outstanding 5 Gold and 2 Silver medals. Their achievements reflected strong technical mastery, scientific knowledge, passion for culinary innovation, and continuous refinement in the pursuit of excellence.

Students and graduates from FNC made their mark again at the **FHA 2026 Culinary Challenge**, held in April 2026, bringing home an outstanding 4 Gold and 2 Silver medals. Competing on a prestigious regional platform, the team excelled in the Young Chefs Pasta Challenge and Plated Dessert Challenge.



SPECIAL FEATURE

FHA

Bistro Lab is our learning enterprise is a training venue for students from the Diploma in Food, Nutrition & Culinary Science to undergo work-based learning of the daily operations at Bistro Lab to enrich and better relate their learning experience.

TRANSLATING OUR FOOD & HOSPITALITY ASIA (FHA) WINS AT OUR LEARNING ENTERPRISE - BISTRO LAB CAFETERIA & BAKERY

Celebrating 25 Years of Excellence

Awarded Gold @ Food & Hospitality Asia 2025 & On Sale Now At Bistro Lab



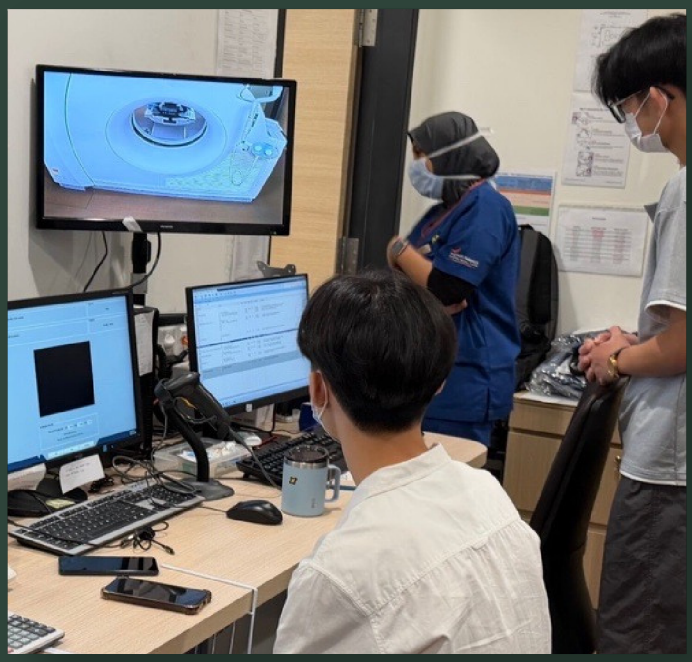
Won By:
Ms En Yu Low
Diploma in Food, Nutrition & Culinary Science

Chocolate Mousse Creation paired with Kumquat Jelly

ASC PET - DIPLOMA IN MBT

This unique programme stands as Singapore's only diploma that equips you with the knowledge and skills for careers in biotechnology, biomedical science, and healthcare industries.

DIPLOMA IN MEDICAL BIOTECHNOLOGY - HIGHLIGHTS



Job Shadowing under **MOHH Huddle+ Programme** - 4 MBT students participated in the Huddle+ Programme. **MOH Holdings** (Singapore)'s Huddle+ embarked on an immersive five-day learning journey to gain first-hand experience in various disciplines within the public healthcare sector. Organised by MOHH's Healthcare Scholarships and Talent (HST) team, this annual flagship programme has evolved from a purely attachment-based programme to include a two-day workshop segment. MBT's Mr Yap Yong Kang was attached to Radiation Therapy at the National Cancer Centre Singapore / SingHealth, Ms Ye Rouyu was assigned to Respiratory Therapy at Woodlands Health, Ms Giselle Goh Zi Jun was attached to the Respiratory Therapy Services at Khoo Teck Puat Hospital and Yishun Community Hospital (NHG), and Ms Chit Su Han was assigned to the Nursing / Specialised Nursing Track at Montfort Care GoodLife.

MBT sustains strong industry partnerships to keep its curriculum relevant and provide authentic workplace exposure. Through **structured learning journeys** to healthcare institutions and diagnostic laboratories, students gain first-hand insight into biomedical practice beyond the classroom.

At Alexandra Hospital, students explored the Laboratory Medicine departments of Clinical Chemistry, Blood Banking, Haematology and Sample Reception, participating in hands-on activities that deepened their understanding of the **medical technologist's role**.

At the Clinical Measurement Centre, live demonstrations in neurodiagnostics, gastromotility, pulmonary function, cardiac diagnostics and vascular diagnostics gave students insight into specialised clinical workflows. Visits to the Health Sciences Authority Blood Bank and Innoquest Diagnostics' main laboratory further exposed them to high-throughput diagnostics, automation technologies and rigorous quality systems.





ASC PET - DIPLOMA IN MBT

This course also combines theory with hands-on experience to equip learners with the skills to become a versatile professional in clinical laboratory and cardiac diagnosis.

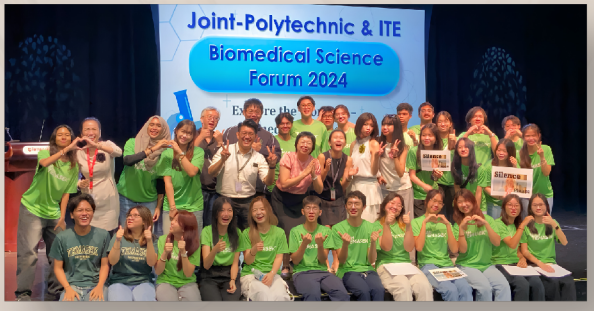
DIPLOMA IN MEDICAL BIOTECHNOLOGY - HIGHLIGHTS



LKC Anatomy Challenge 2026 - an **annual inter-school Anatomical Science competition** organised by Nanyang Technological University (NTU)'s Lee Kong Chian School of Medicine, bringing together students from junior colleges, polytechnics, and international high schools. The competition tests students' knowledge of the human body through both an individual quiz and an inter-school team round. For the first time, Team MBT achieved a Top 5 finish out of more than 20 Junior Colleges and 5 Polytechnics nationwide. The ASC team, comprising Mr Edward Renhuijiro, Ms Ye Rouyu, Ms Charlotte Sim, and Ms Lim Rui En Raeann, successfully advanced to the final round and placed among the Top 5 in the team challenge. In addition, in the individual segment, Mr Renhuijiro received a **Distinction Award**, while Ms Ye received a **Merit Award**.

Harvard Prize Book 2026 - Mr Nathan See Yi Yew from MBT was awarded the **Harvard Prize Book** (Singapore) 2026, a prestigious international award recognising academic excellence, character, leadership and community impact. A Bronze Medallist for the MBT course class of 2026, Mr See has also championed inclusion through TP's SENvocates Interest Group, which is dedicated to **advocating for disabilities** and Special Educational Needs (SEN). His achievement reflects TP's commitment to nurturing graduates who excel academically and contribute meaningfully to society.





Strengthening Cross-Institution Collaboration – MBT actively strengthened collaboration across the biomedical education ecosystem. In 2024, it hosted the **Joint Polytechnic & ITE Biomedical Science Forum**, attracting more than 250 participants. In 2025, MBT co-organised the BMS–SCT Learning Journey with Republic Polytechnic, engaging 79 educators and showcasing AI applications in biomedical education and diagnostic laboratories.

ASC PET - DIPLOMA IN PHS

With Singapore emerging as a global manufacturing hub for pharmaceutical giants, exciting career opportunities await our graduates in the healthcare industry.

DIPLOMA IN PHARMACEUTICAL SCIENCE - HIGHLIGHTS



CNA938 Feature: Ms Dai Jia Mei Shares Her TP Journey

Ms Dai Jia Mei, an ASC/PHS alumna, was featured on **CNA938's Your Singapore Weekend** on 7 February 2026. She shared how TP's applied pharmaceutical training prepared her for the biopharmaceutical industry and led to her current role at WuXi-XDC, a leading Contract Research, Development and Manufacturing Organisation (CRDMO) specialising in antibody-drug conjugates (ADCs) and other bioconjugates.

Her reflections on Good Manufacturing Practice, language and cultural adaptability, and the **Pharmaceuticals and Biologics Manufacturing Elective Cluster** showcased the value of applied pharmaceutical training in developing industry-ready graduates.

The Straits Times Feature: Mr Goo Yi Hao's Career Journey, From Curiosity to Compliance

Featured in **The Straits Times** on 8 June 2025, PHS alumnus Mr Goo Yi Hao has built a purposeful pathway from early curiosity about medicine regulation to a career in pharmaceutical science and public health. Through PHS's module on pharmaceutical regulations and quality systems, he deepened his understanding of standards, documentation and compliance beyond the laboratory.

His TP internship, involving a laboratory relocation and cleanroom setup, put regulatory principles into practice. Now a **Quality Assurance and Regulatory Affairs Analyst**, Mr Goo's journey shows how passion, applied learning and the Early Admissions Exercise can lead to specialised science careers.



ASC PET - DIPLOMA IN PHS

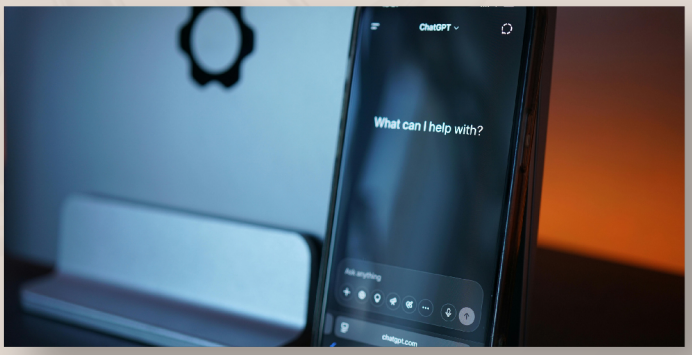
Learners will master the complexity of medicines, their effects in the body, and their interactions, and become experts in patient counselling to unlock exciting career paths as pharmacy technicians in pharmacies.

DIPLOMA IN PHARMACEUTICAL SCIENCE - HIGHLIGHTS



Shaping Digital HealthTech Learning Collaboration ASC and the **School of Informatics & IT (IIT)** partnered with **Changi General Hospital (CGH)** to secure the CGH-TP Digital HealthTech Innovation Grant 2024 for a personalised digital pharmacology learning tool. Designed to support nursing education and benefit PHS students, the platform strengthens conceptual understanding through engaging, adaptive learning. By leveraging digital technology to deepen motivation and student engagement, the project demonstrates how cross-sector collaboration can shape future-ready health sciences education.

Advancing Pharmacy Education with Artificial Intelligence - In partnership with the TP **Learning Academy (LA)**, PHS piloted the integration of Generative Artificial Intelligence (GenAI) into pharmacy education through chatbot-supported role-play scenarios. Students reported improved confidence and competence in patient assessment and counselling, with findings presented at the Singapore Pharmacy Congress 2025.





Mr Nguyen Canh Quan was awarded the **Changi General Hospital Course Silver Medal**, which is presented to the top graduating student from PHS. He also received the Young Scientist Symposium 2024: Poster Presentation Merit Award from the Singapore Society for Biochemistry and Molecular Biology (SSBMB) for his project, Understanding Mechanisms of Therapy Resistance in Glioblastoma Using Patient-Derived Gliomaspheres. He undertook his internship at #N1TxLab, The N.1 Institute for Health, where he consistently demonstrated excellence, diligence, productivity, and resourcefulness.

SPECIAL FEATURE

YSS

YOUNG SCIENTISTS SYMPOSIUM 2026

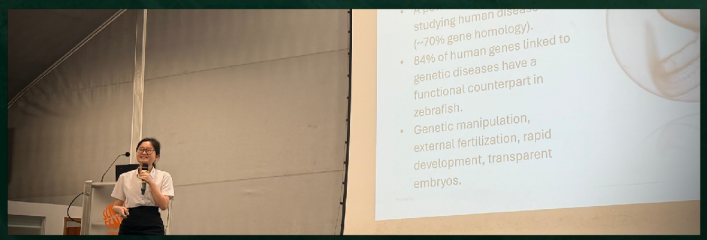
These achievements reflect not only student capability, but also the strength of applied science education, mentorship, and research culture within ASC.



The **Young Scientists Symposium (YSS) 2026** brought together 110 participants across various institutions. A strong delegation of 17 ASC students represented TP, demonstrating both scientific rigour and research excellence. Jointly organised by the Singapore Society for Biochemistry and Molecular Biology (**SSBMB**) and Science Centre Singapore, with sponsorship from the Department of Biochemistry, National University of Singapore (**NUS**) and the Singapore National Academy of Science (**SNAS**), YSS is an annual platform that celebrates the scientific knowledge, research skills, and independence developed by polytechnic students through a research symposium.

At the symposium, our ASC students showcased their Final Year major projects through poster and oral presentations alongside peers from other polytechnics. The projects were conducted under the mentorship of supervisors from TP and leading research and healthcare institutions, including **A*STAR**, the Experimental Drug Development Centre (**EDDC**), **NUS**, and the Asian Heart and Vascular Centre (**AHVC**).

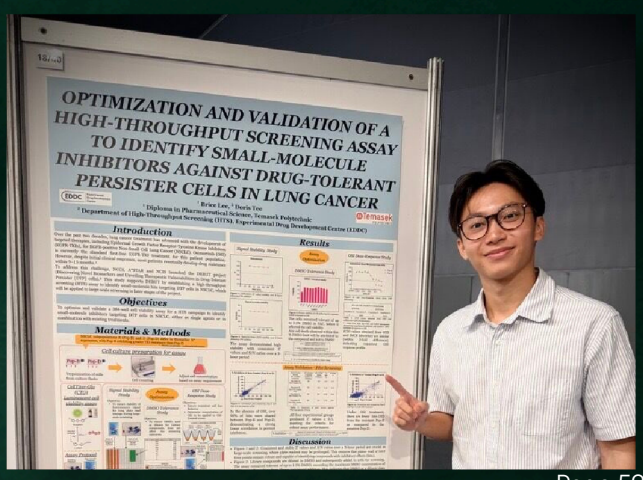




Four students received Merit Awards for Poster Presentation, and one received a **Merit Award** for Oral Presentation. The Merit Award was presented to Ms Hrih Tay Ching Hwee (MBT) for the project titled "The Role of the URP Signalling Pathway in Spine Axis Determination in Zebrafish".

Merit Awards for poster presentations were awarded:

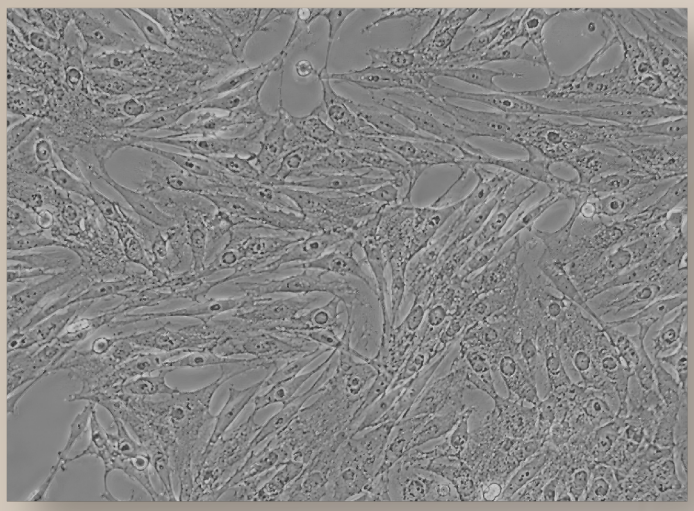
- **Mr Brice Lee (PHS):** Optimisation and Validation of a High-Throughput Screening Assay to Identify Small-Molecule Inhibitors Against Drug-Tolerant Persister (DTP) Cells in Lung Cancer.
- **Mr Joachim Mejia Laxa (MBT):** Effectiveness of Chitinolytic Bacteria from the Gut of John's Snapper in Reducing Chitin Content in Insect Meal.
- **Ms The Hui Ing Idelle Teddyatmaja (MBT):** Early Structural and Coronary Artery Changes Associated with Metabolic Burden and Obstructive Sleep Apnea.
- **Mr Shamsubahurudin Shamsuddin (MBT):** Prevalence and Risk Factors of Undiagnosed Neuropathy in People with Diabetes in Singapore.



ASC PET - DIPLOMA IN VET

ASC offers VET that is recognized as the only diploma in Singapore focusing on industry-oriented practical training in veterinary and aquaculture science.

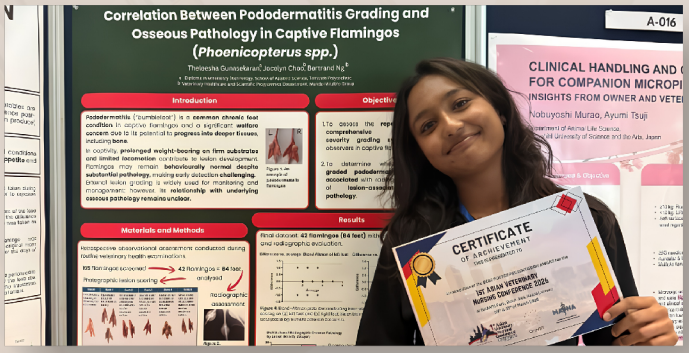
DIPLOMA IN VETERINARY TECHNOLOGY - HIGHLIGHTS



Advancing Fish Cell Research for Aquaculture Health - VET student Ms Gwen Ang Xuan Lin completed a 2024 / 2025 final-year project, supported by industry partner **Cellivate Technologies Pte Ltd**, to grow Asian seabass cells in the laboratory for aquaculture health research. The project successfully cultured the cells, confirmed their identity using Polymerase Chain Reaction and assessed their growth through a cell growth test. The cells were also used to study Infectious Spleen and Kidney Necrosis Virus, demonstrating how fish cell research can support faster, safer and more **ethical disease studies** without using live fish.

Strengthening Veterinary Practice Through the Animal and Veterinary Service (**AVS**), **NParks** Collaboration - VET and AVS continued to provide hands-on experience for staff and students through **OpsVax Lyssa**, Cat Microchipping and Pet Cat Sterilisation Scheme Spay Days. These initiatives support rabies vaccination, pet traceability and humane cat population management for low-income families under the new **Cat Management Framework**, while strengthening applied veterinary training and community animal welfare outcomes.





1st Asian Veterinary Nursing Conference (AVNC) 2026 Poster Competition - At the inaugural AVNC 2026, held in Kuala Lumpur from 30-31 March 2026, 4 graduating VET students presented their Major Project posters in the competition, which drew 28 regional submissions. Despite the stiff competition, Ms Theleesha Gunasekaran emerged as the overall winner and was awarded **First Prize** for Best Poster Presentation.



SPECIAL FEATURE

VET

NPARKS–PETER LIM SCHOLARSHIP AWARD



Mr Chee Hong Tat, Minister for National Development, awarded 18 VET students the NParks–Peter Lim Scholarship.

Established by **Mr Peter Lim** with the National Parks Board, the **$10 million scholarship** supports deserving youths and strengthens talent for Singapore's growing landscape and veterinary sectors.

As digitalisation and rising pet ownership reshape these fields, VET's applied training equips students with the technical rigour, resilience and industry exposure needed for workforce readiness

For VET student **Ms Mi'ra Mikkel Muhamad Hidayat**, this responsibility stems from her love for animals and resilience in caring for those affected by abuse and neglect. As a final-year VET student, her journey reflects the growing need for compassionate, practice-ready professionals in animal healthcare.

Through ASC's applied learning, she has developed the technical skills, ethical grounding and emotional strength to support vulnerable animals in real-world settings. In recognition of her commitment and potential, Ms Mi'ra was honoured as one of the first **27 recipients** of the inaugural NParks–Peter Lim Scholarship.



ASC DOMAIN

ED Domain

ED nurtures a culture of research at ASC by supporting staff in educational research and discussing contemporary higher education issues.

EDUCATION R&D DOMAIN - HIGHLIGHTS

(IN COLLABORATION WITH TP'S LEARNING ACADEMY)

REDESIGNING PEDAGOGY CONFERENCE 2026



Mr Guo Ren, Dr Miao Huang and Dr Loh Gin Hin attended the **Redesigning Pedagogy International Conference** from 2-4 June 2026 at Nanyang Technological University (NTU). ASC presented two ED projects, "Advancing Personalised and Collaborative Adult Learning: Adopting Microlearning, Gamification, and Chatbots in Polytechnic Continuing Education" and "Three-year Implementation of Personalised Digital Nudges to Foster Desirable Online Learning Behaviours". Their presentations helped showcase ED's ongoing efforts to use educational technology, learning analytics, and AI-supported approaches to enhance student learning.

POWERING PERSONALISED ADULT LEARNING



The MaGiC2PAL project brought together a collaborative core leadership team comprising Dr Miao Huang, Ms Theresa Yew, and Dr Loh Gin Hin, along with TP staff members Dr Pratima Majal and Ms Asha Kumaran. ASC shared key findings and reflections in TP Learning Academy's publication, **Tinkering with AI**, on 26 February 2026. Through its focus on microlearning, gamification and chatbots, the project reflected ASC's continued efforts to explore AI-enabled approaches that support personalised learning.

HOLISTIC EXPERIENTIAL LEARNING DESIGN



ASC and the TP Learning Academy collaborated with **Experiential Learning Design Institute (ELDI)** in Hong Kong to offer two new CET certification courses in experiential learning. The inaugural runs of both courses were successfully delivered from 18 to 20 March 2026. Dr Loh Gin Hin and Mr Zhang Pengchii worked closely to support Professor Colin Beard, Founder of ELDI, throughout the three-day programme, ensuring its smooth delivery. The first run generated 240 trainee training hours for Level 1 and 336 trainee training hours for Level 2, marking a strong start for both courses.

OUR STUDENTS' STORIES

At TP, learners' education extends beyond the classrooms. These students have studied, built, solved, and served. They took bold ideas, turned them into practical solutions, and worked alongside industry leaders to tackle real-world challenges.

STUDENT DEVELOPMENT & ACADEMIC AWARDS

[IN COLLABORATION WITH TP'S STUDENT DEVELOPMENT & ALUMNI AFFAIRS (SDAA), STUDENT SUPPORT & CAREER SERVICES (SSCS), AND ACADEMIC AFFAIRS (AA)]

ASC places equal emphasis on student development and academic success. The number of student awardees continues to grow year on year, underscoring the school's efforts and initiatives to mould our students in **leadership**, community involvement, teamwork, self-discipline, and self-reliance for service to the nation. Students are nurtured to become well-rounded individuals, equipped not only with technical expertise but also with a strong sense of responsibility and leadership.







Academic Awards (2024 to 2025)	Awardees
A*STAR Science Awards (Polytechnic)	3
Kwong Cheong Thye Scholarship	1
National Parks Board–Peter Lim Scholarships	15
Ng Teng Fong General Hospital Scholarship	1
Select Group Scholarships	2
Stanley-Fu Steadfast Associates Scholarship	1
Symrise Asia Pacific Scholarship	1
The Daisy Phay TP Foundation Scholarships	2
The Lee Foundation Scholarship	1
The Ngee Ann Kongsi Scholarship	1
The Tan Agnes Jiannee Scholarships	3
Temasek Foundation–G Muthukumarasamy Scholarship	1
TP Empowerment Scholarship	1
TP Scholarships	5
TP CCA Scholarships / Daisy Phay CCA Scholarships	5

CORRECT AT THE TIME OF PRINT.

SCHOOL OF APPLIED SCIENCE

VI.

PROFESSIONAL DEVELOPMENT





SPECIAL FEATURE

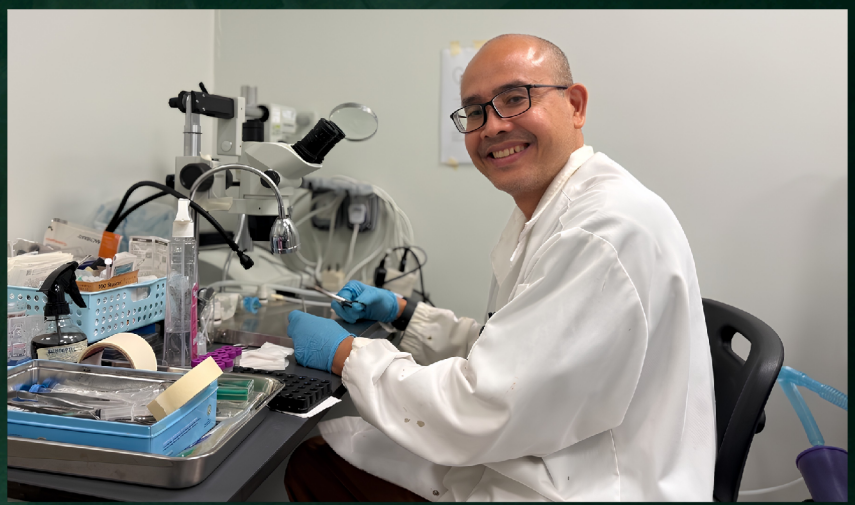
GOLD

NATIONAL HEALTH COMMISSION (NHC) & THE CENTRAL COMMITTEE OF THE COMMUNIST YOUTH LEAGUE OF CHINA (CYLC)'S 2ND NATIONAL HEALTH & WELLNESS INDUSTRY YOUTH INNOVATION COMPETITION



The **2nd China National Youth Innovation Competition** is one of the most prestigious, wide-reaching, and influential innovation events in China's healthcare sector. This event is organised biennially by China's National Health Commission and the Central Committee of the CYLC. A total of 3,632 projects were submitted nationwide, with only 6 projects in each track awarded **Gold**.

The groundbreaking collaboration under the tripartite research collaboration between ASC, Natura Biotechnologies Pte Ltd, and the **Chongqing Academy of Chinese Materia Medica (CACMM)** proudly presented their project: "NV01—An **Anti-Dengue** Solution Derived from Millennia of Herbal Wisdom" at the competition on 26 March 2026. Their visionary work triumphed over strong contenders and was honoured with the coveted **Gold Award**, marking a shining milestone in innovation and global recognition.



FACULTY & STAFF

ASC staff includes lecturers, scientists, technologists, engineers, researchers, healthcare professionals, and specialists who provide guidance in both academic and professional development.

PROFESSIONAL DEVELOPMENT & INDUSTRY ATTACHMENT



Bringing Global Workplace Learning Insights from Lausanne - From 28 April to 3 May 2024, NACE@TP organised an overseas experiential trip to **Lausanne, Switzerland**, with Dr Kalpana Bhaskaran, SME owners and other TP staff. The Nestlé Research Centre in Lausanne also invited Kalpana to share insights into **glycemic index research**, which led to engagement with the Nestlé YOUth Entrepreneurship programme.

Chemical Biology Award 2025 – Dr Amaladoss Anburaj has officially been selected as the recipient of the **AGATHIYAR Chemical Biology Award** by the Society of Chemical and Synthetic Biology, India, for the year 2025. This prestigious award recognises his impactful work in diagnostics development and his dedication to teaching and mentoring in synthetic biology. The award will be formally presented at the Society's annual event.





Mr Kevin Lee has received the **Singapore Concrete Institute Young Innovators Awards 2025 (Gold Award)**. His research, "Innovative Design of Spalling-Resistant Ultra-High Performance Concrete Using Regional Waste-Derived Materials", demonstrates how materials such as recycled plastics can be engineered into functional components of ultra-high performance concrete.

Deepening Cardiac Diagnostics Through Staff Industry Attachment - Ms Louisa Chew completed her Industry Attachment at the **Heart Centre, Raffles Hospital**, from 9 to 20 March 2026, gaining authentic exposure to cardiac diagnostics and interventions. Through structured observation of cardiology medical technologists and cardiologists, she observed procedures including blood pressure measurement, echocardiography, treadmill stress echocardiography, electrocardiography, Holter monitoring, angioplasty and pacemaker implantation.



MEET SOME OF OUR STAFF

LEADERS

BOARD & COMMITTEE MEMBERS

ASC staff members contribute beyond their school-based roles by taking on various appointments and responsibilities at institutional, sectoral, and external platforms.

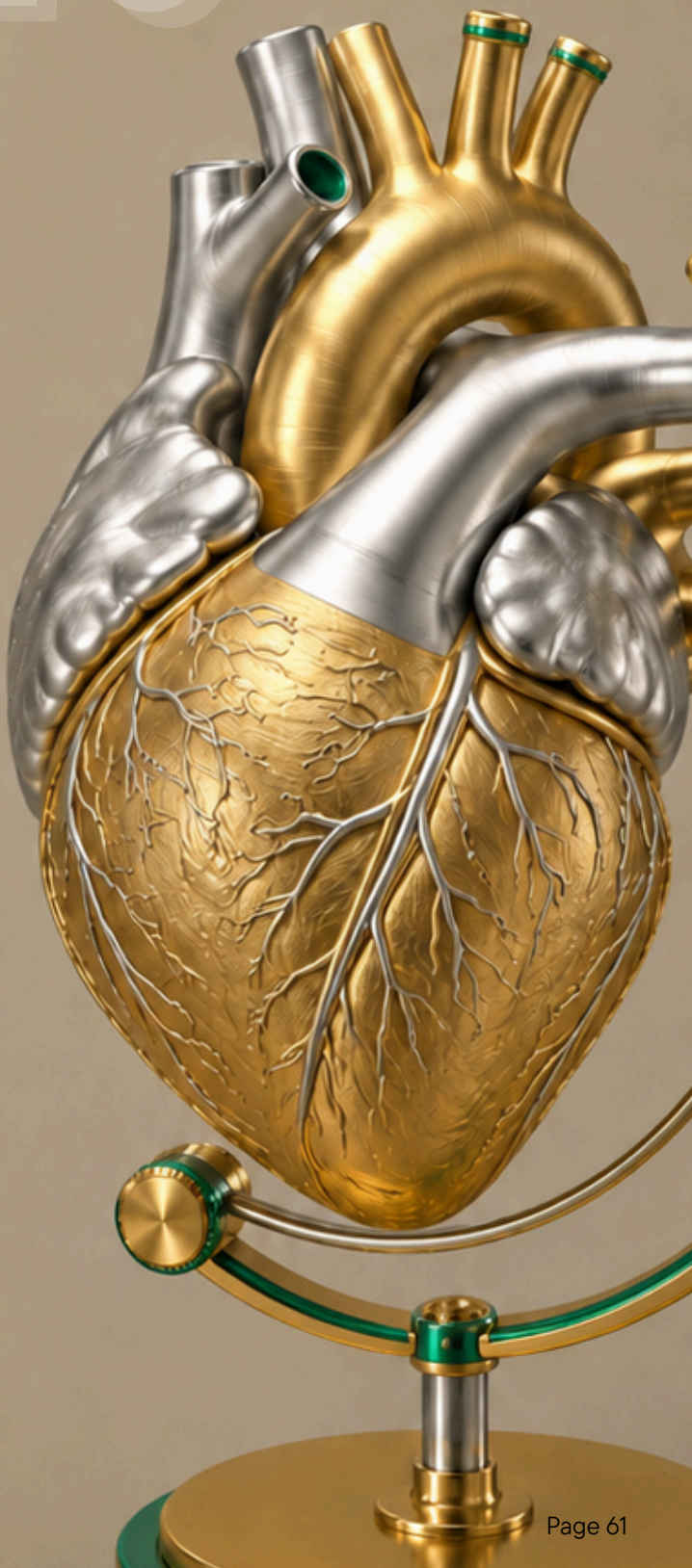
Dr Amaladoss Anburaj	Committee Member (School Advisory), Jurong West Secondary School
Dr Goh Lay Beng	Committee Member, ESG SAC Council - Good Lab Practice
Dr Goh Lay Beng	Committee Member, Feed9B
Dr Goh Lay Beng	Member, National Synthetic Biology Taskforce - National Centre for Engineering Biology
Dr James Lim Yong Kian	Co-Founding Partner, APAC Society for Cellular Agriculture (Student Chapter)
Dr Kalpana Bhaskaran	Board Director, Alliance of Patients Organisation Singapore
Dr Kalpana Bhaskaran	Advisor, Diabetes Singapore
Dr Kalpana Bhaskaran	Committee Member (Executive), Asian Nutrition Society for Sports and Health
Dr Kalpana Bhaskaran	Expert Advisor, MOH/HPB on Sugar & Sodium guidelines/Nutrigrade Label
Dr Kalpana Bhaskaran	Board Member (Academic), Society of Behavioural Health Singapore
Dr Lee Yun Hwa	Committee Member, Singapore Society for Biochemistry and Molecular Biology
Dr Loke Ju Wen Ian	Vice President, Association of Biomedical Laboratory Professionals (Singapore)
Dr Louis Ong	Committee Member, Sigma-Xi
Dr Louis Ong	Committee Member, TERMIS
Dr Low Ji Zhen	Committee Member (Standing), Singapore Veterinary Association
Dr Low Ji Zhen	Committee Member, AVS Veterinary Council Advisory Panel
Dr Maisha Foo	Committee Member (School Advisory), Bowen Secondary School
Dr Miao Huang	Committee Member, Food Standards Committee
Dr Rufaihah Abd Jalil	Committee Member (Advisory), Halal Research Institute, University Putra Malaysia
Dr Rufaihah Abd Jalil	Committee Member (Technical), Singapore Standardization Programme: Biotechnology & Laboratory Testing
Dr Sook Fun Wong	Director, American Concrete Institute - Singapore Chapter
Dr Sook Fun Wong	Board Member, International Congress on Polymers in Concrete
Dr Zhi Huang	Committee Member, 2025 IUVA Asian Pacific Regional Symposium
Mr Alden Toh	Committee Member, Singapore Veterinary Nurses and Technicians Chapter
Mr Alvin Poh	Board Member (Singapore Advisory), American Society for Clinical Pathology
Mr Gary Lim	President, Singapore Pastry Alliance
Mr Justin De Silva	Complaints Panel Member, Singapore Medical Council
Mr Justin De Silva	Council Member, Pharmaceutical Society of Singapore
Mr Justin De Silva	Advisor, Pharmacy Technician Community of Practice
Mr Ramesh Kumar	Board Director, *SCAPE SG (Ministry of Culture, Community & Youth)
Mr Ramesh Kumar	Advisor (v-Career), Workforce Singapore
Mr Ramesh Kumar	Mentor Partner, Heartland Innovation and Transformation Programme (HIT) - Enterprise Singapore
Mr Wong Weng Wai	Vice President, Singapore Institute of Food Science & Technology
Ms Johanna Tan	Committee Member, National Codex Committee
Ms Loh Win Nie	President, Singapore Nutrition and Dietetics Association
Ms Louisa Chew	Council Member, Singapore Association for Medical Laboratory Sciences
Ms Shahedah Md Ali	Committee Member, MOH Pharmacy Technicians Training Pathway Committee
Ms Wong Shaou Yi Ruth	Director, Women's Committee for Singapore Eng Teng Association

CORRECT AS OF APRIL 2026. THE LIST ABOVE PROVIDES A SELECTIVE OVERVIEW AND IS NOT INTENDED TO BE EXHAUSTIVE.

SCHOOL OF APPLIED SCIENCE

VII.

COMMUNITY & SUSTAINABILITY



COMMUNITY & SOCIETAL IMPACT

NATIONAL YOUTH ACHIEVEMENT AWARD

Launched in 1992, the NYAA is a self-development programme for people between the ages of 13 and 30. The gold award is given to those who are at least 16 years old and have chalked up at least 144 hours in service learning, outdoor appreciation and healthy living.



Ms Ayuni Nur Izyanti Mohamad Zuraimi, a Year 3 Medical Biotechnology student and **NYAA Gold Award recipient**, has shown strong commitment to community leadership and service.

As President of the school's community service initiatives, she spent the past two years mentoring less privileged students through the **SBL Vision Tuition Programme**, contributing over 80 hours in English, Mathematics and Malay while creating engaging activities to support their development.

She also helped plan volunteer training workshops with a family service centre and organised interactive activities, including an "Amazing Race" learning challenge to build students' confidence in language and numeracy skills.

As part of her **Community Leadership Initiative**, Ms Ayuni extended her commitment to service beyond Singapore by leading a team in Cambodia to develop educational content for more than 70 students. The materials were tailored to the students' learning needs, particularly their limited English proficiency, reflecting her ability to combine scientific knowledge, empathy and practical leadership to create meaningful impact.

Her NYAA journey reflects the values of compassionate leadership, sustained service and commitment to uplifting others, even while managing the demands of academic life.



SPECIAL FEATURE

IMPACT

TWIST grew from ASC and is now a community of TP students who have a strong passion to empower and guide young female students by providing accessible opportunities through experiential and awareness activities about STEM careers.

TP WOMEN IN SCIENCE & TECHNOLOGY (TWIST) INTEREST GROUP



The future of STEM is not shaped by ideas alone, but by the people, partnerships, and pathways that turn knowledge into impact. That was the spirit behind the **4th TP Women In Science & Technology (TWIST) Symposium** held on 23 January 2026. Bringing together institutional and international leaders such as **Dr Imola Szabó** (Chargé d'Affaires, Embassy of Hungary in Singapore), Mr Patrice Choong (P/CEO, TP), and Dr Goh Lay Beng (Director, ASC), the symposium created space for honest conversations about leadership, innovation, and career progression in STEM.

Insights from across academia, defence, and industry grounded these discussions in real-world relevance. Dr Orsolya Ungvári from the National University of Singapore shared perspectives on cardiovascular research; Ms Debbie Phua from the Singapore Army spoke on HD system development; and Ms Eunice Yeap, Principal Engineering Research Scientist at Pfizer, connected translational research to biomedical innovation in practice. Together, they amazingly demonstrated how applied learning and cross-sector collaboration prepare talent to address complex STEM challenges.





Anchored by TWIST, it continues to shape students' futures in STEM by equipping them with the skills and confidence to pursue STEM careers and to make a meaningful impact on the industry. TWIST collaborates with external organisations to offer opportunities for student innovation and **leadership development** in STEM.

SUSTAINABILITY & ENVIRONMENTAL IMPACT

TP advances aquaculture, conservation and veterinary care through applied science and community impact.

AQUACULTURE, CONSERVATION & VETERINARY CARE



Putting Climate-Ready Aquaculture on the COP30 Stage - TP brought its voice to the 30th UN Climate Change Conference (COP30), held in Belém, Brazil, from 10 to 21 November 2025, with the International Association for Agricultural Sustainability Chairman and TP Principal Scientist, **Dr Lee Chee Wee**, presenting at the Singapore Pavilion. Across two presentations, a Pavilion video featuring AIC, and a special interview, he positioned integrated aquaculture as a business-relevant climate solution.

World Wildlife Day Regional Youth Symposium - Organised by NParks in collaboration with **Eu Yan Sang**, the Symposium provided a meaningful platform to share how science can support conservation and the sustainable use of plant and animal sources in Traditional Chinese Medicine (TCM). As part of the programme, the ASC team from TP conducted a hands-on workshop for young participants from Singapore, Thailand, Laos, Mongolia and Indonesia on the authentication of Dendrobium using Thin Layer Chromatography (TLC) and microscopy. It was especially rewarding to see their curiosity, enthusiasm and engagement throughout the session.





Strengthening Animal Health Through Community Outreach – ASC students continued to support **Ops Vax Lyssa**, an annual rabies vaccination exercise led by the Animal and Veterinary Service (AVS) to safeguard animal health in higher-risk areas. Working alongside the AVS team, private veterinarians and veterinary nurses, ASC students contributed to community-based animal care efforts. Beyond the scheduled sessions, VET students Ms Alexandra Wight and Ms Lee Enning also participated in a special outreach trip on 1 October 2025 with **Minister of State Mr Alvin Tan**, reflecting ASC's commitment to applied learning, public service and community animal health.

SPECIAL FEATURE

IMPACT

WHERE FAIRY TALES MEET FUTURE SKILLS



Former President Mdm Halimah Yacob and Deputy Prime Minister Mr Gan Kim Yong highlighted the national significance of community-led sustainability efforts

Sustainability conversations often struggle to reach the very audience that matters most: young families and children. Temasek Polytechnic's **ASCares 2026** chose a different approach. Held on 31 January at Punggol Northshore Plaza, ASC's annual student community outreach transformed science education into an "Enchanted Adventure," using fairy-tale-inspired characters to teach sustainable habits through simple, engaging science-based activities. It was imaginative, yes. But it was also purposeful.

In partnership with the Housing & Development Board, Soap Cycling Singapore, and the People's Association, approximately 100 student volunteers stepped beyond the classroom to engage residents door-to-door under HDB's Friends of the Heartland initiative. The presence of Guest-of-Honour **Former President Mdm Halimah Yacob** (8th President of the Republic of Singapore) and **Deputy Prime Minister Mr Gan Kim Yong** underscored the national importance of community-grounded sustainability efforts.





ASCares initiative equips students not only with technical knowledge but with confidence, communication skills, and civic responsibility. It is through experiences like these that classroom learning translates into community impact. Amazing work to our students and advisors from ASC Studies Club and our ASC Interest Groups.

SCHOOL OF APPLIED SCIENCE

VIII.

OUR FUTURE FORWARD



Celebrating 25 Years

CREATING TOMORROW

WWW.TP.EDU.SG/ASC

SCHOOL OF APPLIED SCIENCE

LEADERSHIP DIALOGUE

A WORD FOR OUR NEXT DECADE

A reflection on the one word that best defines the School of Applied Science's journey, purpose, and ambition for the next decade.

If you have to define the School of Applied Science in "one word" for the next decade, what would it be and why?

"**Integrative**". AI is accelerating research across the sciences at an unprecedented pace. As a result, applied science will increasingly expand and converge with adjacent fields, and perhaps give rise to entirely new ones. To thrive in that landscape, our students will need more than technical depth. They will need to marry the scientist's pursuit of truth, the engineer's instinct for experimentation and tinkering, and the humanist's capacity for empathy and perspective-taking.

Mr Patrice Choong
Principal & CEO, Temasek Polytechnic





"**Essential**". ASC's job this decade is to equip graduates with the skills industry treats as essential: domain depth paired with AI fluency, applied to feeding a growing population, making healthcare more accessible, accelerating therapeutics and decarbonising industry, because that combination is precisely what keeps TP itself essential to the country and the region.

Ms Farhana Nakhooda
Chairperson, School Advisory Committee

"**Catalytic!**" – we want to further amplify the impact of our purposeful work through an ever-growing circle of influence.

Dr Goh Lay Beng
Director, School of Applied Science



LEADERSHIP DIALOGUE

In this concluding reflection, our three leaders share their perspectives on the capabilities the next generation of applied science graduates must possess to remain future-ready.

BUILDING FUTURE-READY GRADUATES

What capabilities must the next generation of applied science graduates possess to remain future-ready?



"The world you're stepping into is moving fast, reshaped by new technologies, shifting industries, and global challenges. You're ready for what lies ahead. What will set you apart is your **adaptability**, creativity, and the empathy you bring to every problem you solve."

Mr Patrice Choong
Principal & CEO, Temasek Polytechnic
Graduation 2026 PCEO's Message



"Our graduates must not hang on to what we've taught them. They need to be **agile** in connecting the dots, think system-level always, and develop social intelligence to become effective leaders."

Dr Goh Lay Beng
Director, School of Applied Science

"From an employer's standpoint, we value graduates who can **think critically** and communicate effectively. Technical knowledge is important, but the ability to translate that into actionable insights is what differentiates them."

Ms Farhana Nakhooda
Chairperson, School of Applied Science



Make every ASC graduate AI-native by 2030, not through an add-on module, but by redesigning the curriculum so students train alongside AI from day one across our clinical labs, food kitchens, pilot plants and animal clinics. The bold move isn't adding AI to applied science; it's making AI inseparable from how applied science is learned.



Ms Farhana Nakhooda

Chairperson, School Advisory Committee,
School of Applied Science,
Temasek Polytechnic

Senior Vice President
Health Catalyst, Asia Pacific

SCHOOL OF APPLIED SCIENCE

IX.

GRANTS & PUBLICATIONS



IP & PUBLICATIONS NUMBERS

ASC continues to strengthen its research impact through intellectual property creation and scholarly publications, translating scientific expertise into meaningful innovations, industry relevance and knowledge advancement.

JOURNALS & PUBLICATIONS

28

POSTERS & CONFERENCES

50

IP & INVENTIONS

16

STAFF AWARDS

9

MEDIA FEATURES

24

RESEARCH GRANTS

25

PERIOD OF:
1ST MAY 2024 – 30TH APRIL 2026

FUNDING NUMBERS

ASC continues to secure external research grants that strengthen applied scientific innovation, deepen industry collaboration and translate research expertise into impactful solutions for society and the economy.

BASED ON TP'S TECHNOLOGY CLUSTERS (FY2024 & FY2025)

GRANT FUNDING
BY TECHNOLOGY CLUSTERS

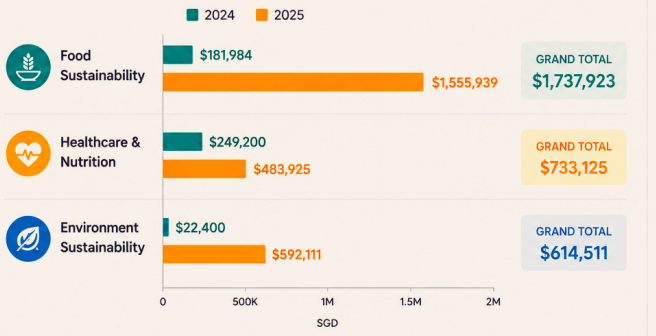
Driving innovation for a sustainable and healthier future

2024 TOTAL $465,984

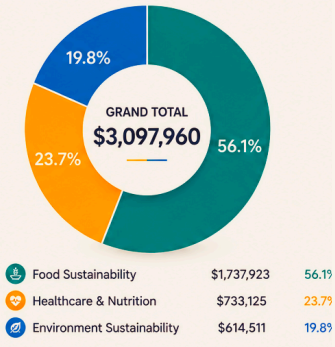
2025 TOTAL $2,631,976

GRAND TOTAL $3,097,960

GRANT FUNDING BY TECHNOLOGY CLUSTERS (SGD)



CONTRIBUTION TO GRAND TOTAL



STRONG GROWTH. GREATER IMPACT.

Grant funding grew 5.6x from 2024 to 2025, advancing solutions across key sustainability and health innovation domains.

5.6x GROWTH FROM 2024 TO 2025

$465,984 in 2024 → $2,631,976 in 2025

BY TECHNOLOGY CLUSTERS

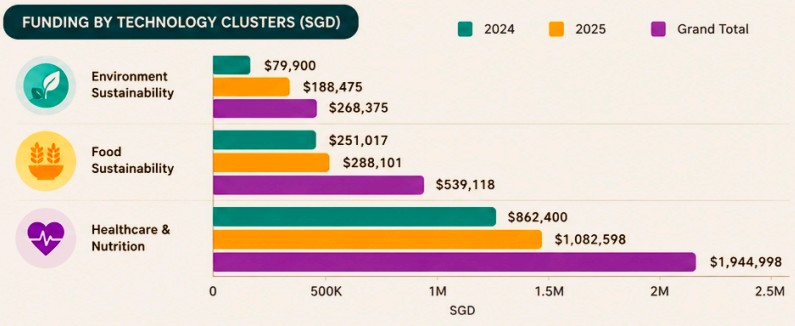
Driving innovation for a sustainable and healthier future

2024 TOTAL $1,193,317

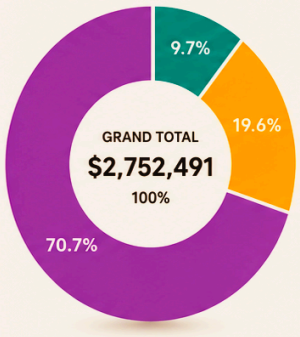
2025 TOTAL $1,559,174

GRAND TOTAL $2,752,491

FUNDING BY TECHNOLOGY CLUSTERS (SGD)



GRAND TOTAL BY TECHNOLOGY CLUSTER



Environment Sustainability $268,375 9.7%

Food Sustainability $539,118 19.6%

Healthcare & Nutrition $1,944,998 70.7%

25 YEARS OF IMPACT

Advancing research and innovation for a better tomorrow.

$1.19M 2024 Total Funding

$1.56M 2025 Total Funding

$2.75M Grand Total Funding (2024–2025)

FY: REFERS TO FINANCIAL YEAR
A PERIOD OF 01 APRIL 2024 TO 31 MARCH 2026

JOURNALS, BOOK CHAPTERS, BOOKS, REPORTS & PUBLISHED ARTICLES

1. Bhatt, B., Patel, K., Lee, C. N., & Moochhala, S. (2024). The microbial blueprint: The impact of your gut on your well-being. Partridge Publishing Singapore. https://www.partridgepublishing.com/en-sg/bookstore/bookdetails/851799-the-microbial-blueprint-the-impact-of-your-gut-on-your-well-being
2. Bhatt, B., Patel, K., Lee, C. N., & Moochhala, S. (2025). Microbiome & Ayurveda: A synergistic approach to human wellness. Partridge Publishing Singapore. https://www.partridgepublishing.com/en-sg/bookstore/bookdetails/851805-microbiome-ayurveda
3. Catano, J. A., Ong, L. J. Y., Yuan, M., Qu, Y., Benitez, J., Yarlagadda, P. K. D. V., Toh, Y. C., & Li, Z. (2026). A patient-specific 3D printed carotid artery model integrating vascular structure, flow, and endothelium responses. Advanced Healthcare Materials, 15(4), Article e02478. https://doi.org/10.1002/adhm.202502478
4. Chan, D. (2025). Status of mud crab aquaculture in Singapore. In A. Lovatelli, C. Shelley, E. Tobias-Quinitio, Khor, W., & D. Chan (Eds.), Status, technological innovations, and industry development needs of mud crab (Scylla spp.) aquaculture: FAO Expert Workshop, 27–30 November 2023, Singapore (FAO Fisheries and Aquaculture Proceedings No. 73, pp. 141–144). Food and Agriculture Organisation of the United Nations.
5. Chan, D., Padmanabhan, S., Huang, Z., Lau, G., Chua, D., Arefin, R., & Lee, C. W. (2025). Prophylactic treatment of mud crabs. In A. Lovatelli, C. Shelley, E. Tobias-Quinitio, Khor, W., & D. Chan (Eds.), Status, technological innovations, and industry development needs of mud crab (Scylla spp.) aquaculture: FAO Expert Workshop, 27–30 November 2023, Singapore (FAO Fisheries and Aquaculture Proceedings No. 73, pp. 253–259). Food and Agriculture Organisation of the United Nations.
6. Chan, D., Yasumaru, F., Arefin, R., Chua, D., Padmanabhan, S., & Lee, C. W. (2025). Mud crab feeds and feeding management. In A. Lovatelli, C. Shelley, E. Tobias-Quinitio, Khor, W., & D. Chan (Eds.), Status, technological innovations, and industry development needs of mud crab (Scylla spp.) aquaculture: FAO Expert Workshop, 27–30 November 2023, Singapore (FAO Fisheries and Aquaculture Proceedings No. 73, pp. 243–252). Food and Agriculture Organisation of the United Nations.
7. Chen, Y. T., Ling, M. H. T., Yang, H., Cai, M. H., Koh, R. W., Tan, R. Y. H., & Xue, X. J. (2024). Predicting peroxide value of peanut oil using machine learning models. Acta Scientific Nutritional Health, 8(7), 116–122. https://doi.org/10.31080/ASNH.2024.08.1403
8. Hamdan, M. N., Abdul Jalil, R., Ramli, M. A., Ramli, N., Ibrahim, M. N. A., Ab Rahman, M. F., Thaidi, H. A. A., & Abd Rahman, N. N. H. (2024). A review of the discussions on cultivated meat from the Islamic perspective. Heliyon, 10(7), Article e28491. https://doi.org/10.1016/j.heliyon.2024.e28491
9. Lim, J. Y. K., & Lim, C. (2024). An experience of cultivated chicken: Analysis report on future consumers 2024 [White paper]. APAC Society for Cellular Agriculture.
10. Lee, K. J. L., Kevinly, C., & Tan, K. H. (2026). Effect of hybrid fibre on flexural behaviour and spalling resistance of ultra-high performance fibre-reinforced concrete at ambient and elevated temperatures. Construction and Building Materials, 517, Article 145670. https://doi.org/10.1016/j.conbuildmat.2026.145670
11. Lee, K. J. L., & Tan, K. H. (2025a). Effects of hybrid recycled polypropylene and natural kenaf fibres on spalling prevention of ultra-high performance concrete at elevated temperatures. Cement and Concrete Composites, 164, Article 106304. https://doi.org/10.1016/j.cemconcomp.2025.106304
12. Lee, K. J. L., & Tan, K. H. (2025b). Effects of recycled heterogeneous carbonaceous aggregate on fire performance of high strength concrete. Cement and Concrete Composites, 157, Article 105913. https://doi.org/10.1016/j.cemconcomp.2024.105913
13. Lee, K. J. L., Zhang, Z., & Tan, K. H. (2025). Multiscale investigation of sustainable spalling-resistant ultra-high performance concrete containing sludge-derived slag derivatives and recycled polypropylene fibre. Cement and Concrete Composites, 164, Article 106289. https://doi.org/10.1016/j.cemconcomp.2025.106289
14. Loh, G. H., Boey, C. K., Guo, R., & Goh, M. K. (2025, February 24). Piloting HyFlex learning space (laboratory) at Temasek Polytechnic. Cyber-Physical Learning Journal. Singapore University of Technology and Design. https://www.sutd.edu.sg/education/cyber-physical-learning-alliance/cpl-journal/publication/piloting-hyflex-learning-space-at-tp/

PERIOD OF:
1ST MAY 2024 – 30TH APRIL 2026
THE LIST ABOVE PROVIDES A SELECTIVE OVERVIEW AND IS NOT INTENDED TO BE COMPREHENSIVE.

JOURNALS, BOOK CHAPTERS, BOOKS, REPORTS & PUBLISHED ARTICLES

15. Lovatelli, A., Shelley, C., Tobias-Quinitio, E., Khor, W., & Chan, D. (Eds.). (2025). Status, technological innovations, and industry development needs of mud crab (Scylla spp.) aquaculture: FAO Expert Workshop, 27–30 November 2023, Singapore (FAO Fisheries and Aquaculture Proceedings No. 73). Food and Agriculture Organization of the United Nations. https://doi.org/10.4060/cd3976en
16. Low, K. K. M., & Ling, M. H. T. (2024). ODE versus Petri net implementation of identical SEIRS model. Acta Scientific Medical Sciences, 8(6), 100–104. https://doi.org/10.31080/ASMS.2024.08.1832
17. Low, K. K. M., & Ling, M. H. T. (2025). Cell modelling and simulation. In S. Ranganathan, M. Cannataro, & A. M. Khan (Eds.), Encyclopedia of bioinformatics and computational biology (2nd ed., pp. 445–455). Elsevier. https://doi.org/10.1016/B978-0-323-95502-7.00105-6
18. Ng, P. J. M., Chong, S. K., Guo, R., Majal, P., Cai, S., Ng, Y. N. A., Lee, K. S., Lee, K. G., Lee, T. L., Wan, M., Abelanes, M. T., & Liow, Z. (2025). Flipped learning in action: Seven cases from Singapore's polytechnics. Journal of Applied Learning and Teaching, 8(Special Issue 2), 8–19. https://doi.org/10.37074/jalt.2025.8.S2.7
19. Ong, L. J. Y., Kasetsirikul, S., Milton, L. A., Nie, X., Eiken, A. W., Chirnside, J., Young, L. M. G., Nordin, G. P., & Toh, Y. C. (2025). 3D-printed unibody microfluidic devices for organ-on-chip applications. Advanced Materials Technologies, 10(22), Article e01056. https://doi.org/10.1002/admt.202501056
20. Patel, B. K., Patel, K. H., Lee, C. N., & Moochhala, S. (2024). Intestinal microbiota interventions to enhance athletic performance: A review. International Journal of Molecular Sciences, 25(18), Article 10076. https://doi.org/10.3390/ijms251810076
21. Sandalova, E., Li, H., Guan, L., Raj, S. D., Lim, T. G., Tian, E., Kennedy, B. K., & Maier, A. B. (2024). Testing the amount of nicotinamide mononucleotide and urolithin A as compared to the label claim. GeroScience, 46, 5075–5083. https://doi.org/10.1007/s11357-024-01257-2
22. Shi, A., Lee, K. L., Bo, S., Koh, W. K., Poh, D. W. J., Wong, S. F., Chen, H., & Lin, A. (2025). Dimensional effects on shear behaviour of 3D-printed concrete shear keys. In J. Yang, J. Fu, A. Liu, & C. T. Ng (Eds.), Proceedings of the First International Conference on Engineering Structures (Lecture Notes in Civil Engineering, Vol. 599, pp. 557–566). Springer. https://doi.org/10.1007/978-981-96-4698-2_54
23. Sim, B. J. H., Tan, N. T. F., & Ling, M. H. T. (2025). Multilevel metabolic modelling using ordinary differential equations. In S. Ranganathan, M. Cannataro, & A. M. Khan (Eds.), Encyclopedia of bioinformatics and computational biology (2nd ed., pp. 491–498). Elsevier. https://doi.org/10.1016/B978-0-323-95502-7.00056-7
24. Wang, X., Ong, L. J. Y., Karperien, M., & Wen, C. (2026). Tailoring human joint-on-a-chip: From biological principles, materials, to disease modeling. Materials Today Bio, 36, Article 102549. https://doi.org/10.1016/j.mtbio.2025.102549
25. Wuang, S. C. (2024). Microalgae-based recirculating aquaculture system. In K. Al-Kodmany, A. K. Ng, A. Tablada, & C. Kole (Eds.), The vertical farm: Scientific advances and technological developments. CRC Press. https://doi.org/10.1201/b23309-9
26. Wuang, S. C. (2025). Applied microcredentials for opportune upskilling in aquaculture. Education Technology Insights APAC. https://school-management-system-apac.educationtechnologyinsightsapac.com/leadership-perspective/applied-microcredentials-for-opportune-upskilling-in-aquaculture-nid-3352.html
27. Xie, S., & Low, J. Z. (2024). Dungeons and dragons: Culture differences in attitudes toward exotic animals. Veterinary Clinics of North America: Exotic Animal Practice, 27(3), 593–600. https://doi.org/10.1016/j.cvex.2024.03.002
28. Zhao, C., Suyamud, B., Yuan, Y., Ghosh, S., Xu, X., & Hu, J. (2025). Effect of non-antibiotic factors on conjugative transfer of antibiotic resistance genes in aquaculture water. Journal of Hazardous Materials, 483, Article 136701. https://doi.org/10.1016/j.jhazmat.2024.136701

PERIOD OF:
1ST MAY 2024 – 30TH APRIL 2026
THE LIST ABOVE PROVIDES A SELECTIVE OVERVIEW AND IS NOT INTENDED TO BE COMPREHENSIVE.

POSTER PRESENTATIONS, WORKSHOPS, CONFERENCES & EXHIBITIONS

1. Amaladoss, A. (2024a, May 29–31). CRISPR-based rapid onsite pathogen test kit for shrimp [Project showcase]. InnovFest 2024, Singapore Expo, Singapore.
2. Amaladoss, A. (2024b, June 14). Tri-Sea Fisheries Summit 2024 [Invited speaker presentation]. Devasahayam Institute Fishery Science and Technology, Nagercoil, India.
3. Amaladoss, A. (2024c, July 2–5). Asian-Pacific Aquaculture 2024 [Oral presentation]. Surabaya, Indonesia.
4. Amaladoss, A. (2024d, September 3). International guest lecture series [Invited speaker presentation]. Raja College of Arts and Science, Ramanathapuram, India.
5. Amaladoss, A. (2024e, December–2025, January). Real-time PCR for aquaculture diagnostics [Training workshop]. Balai Perikanan Budidaya Laut Batam, Batam Marine Aquaculture Development Centre, Batam, Indonesia.
6. Amaladoss, A. (2025a, February). Innovation in aquaculture health management [Invited lecture]. University of Santo Tomas, Manila, Philippines.
7. Amaladoss, A. (2025b, March). Central University of Tamil Nadu invited lecture [Invited lecture]. Central University of Tamil Nadu, Thiruvarur, India.
8. Amaladoss, A. (2025c, August 15). Detecting the invisible: The role of molecular diagnostics during the pandemic [Invited keynote]. China-ASEAN Technical Education Cooperation Platform, International Perspectives Webinar Series.
9. Amaladoss, A. (2025d, September 4). Recent advances in aquaculture technologies [Invited speaker presentation]. International Seminar on Recent Advances in Aquaculture Technologies, VOC College, Thoothukudi, India.
10. Amaladoss, A. (2025e, September 24–25). 11th Fisheries Scientific Conference [Plenary lecture]. National Fisheries Research and Development Institute, Manila, Philippines.
11. Amaladoss, A. (2025f, October). BioConverge 2025: The International BioE^3 Conference [Plenary lecture]. Manav Rachna International Institute of Research and Studies and Society of Chemical and Synthetic Biology, Faridabad, India.
12. Amaladoss, A. (2025g, October 29–31). Porcine detection system [Poster and product exhibition]. Singapore Week of Innovation and Technology 2025, Marina Bay Sands Expo & Convention Centre, Singapore.
13. Amaladoss, A. (2025h, December 7–11). Asian Synthetic Biology Association Conference 2025 [Conference presentation]. Jeju Parnas Hotel, Jeju, Republic of Korea.
14. Amaladoss, A. (2026a, March). International Conference on Sustainable Ornamental Fisheries [Invited lecture]. Cochin University of Science and Technology, India.
15. Amaladoss, A. (2026b, March). Jain University invited lecture [Invited lecture]. Jain University, Bengaluru, India.
16. Amaladoss, A. (2026c, June 28–July 2). 20th International Biotechnology Symposium and Exhibition [Invited lecture]. Kobe International Conference Center, Kobe, Japan.
17. Amaladoss, A., & Yushu. (2025, November 10–11). Project presentation [Conference presentation]. 13th International Symposium on Applied Engineering and Sciences, Universiti Putra Malaysia, Malaysia.
18. Anand, K. I. (2024, November 22). Developing plug-and-play innovative devices coupled with sensors to reduce energy cost for indoor urban farm [Poster presentation]. SSAFF, Republic Polytechnic, Singapore.
19. Ayden, C., Tay, M. J., & Lim, J. Y. K. (2024). Herbal solutions for sustainable post-harvest shrimp preservation [Poster presentation]. Young Scientist Symposium 2024, Science Centre Singapore, Singapore.
20. Bhaskaran, K. (2024a, September 28–29). Drug nutrient interactions [Conference presentation]. 16th Apollo International Clinical Nutrition Update, India.
21. Bhaskaran, K. (2024b, November 19). Empowering citizens through patient-centric chronic disease management [Conference presentation]. Future of Health Asia.
22. Bhaskaran, K. (2024c, October 9–11). Evolving landscapes in glycemic index testing and research: Advances, challenges, and future directions [Conference presentation]. 6th China GI International Conference, Beijing, China.
23. Bhaskaran, K. (2024d, October 16). Your diet and lifestyle matters: A blueprint to diabetes prevention and management [Conference presentation]. 4th Annual Symposium on Health Management, Taiwan.
24. Chan, K. L. (2024, November 22). Development of value-added food products through upcycling of unused leafy vegetables [Poster presentation]. SSAFF, Republic Polytechnic, Singapore.

PERIOD OF:
1ST MAY 2024 – 30TH APRIL 2026
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POSTER PRESENTATIONS, WORKSHOPS, CONFERENCES & EXHIBITIONS

25. Cho, K. M. (2024, November 22). Effect of growth and nutrient content of soil-less microgreens growing under different lighting periods [Poster presentation]. SSAFF, Republic Polytechnic, Singapore.
26. Cho, K. M., & Chan, C. W. (2026, March 26–28). Nutrient profile comparison of leafy vegetables grown in soil, hydroponics, and organic systems [Oral presentation]. 10th Global Congress on Plant Biology and Biotechnology, Singapore.
27. Cho, K. M., Patel, K. H., Wuang, S. C., & Goh, L. B. (2025, March 27–29). Rooftop vertical aquaponics systems for sustainable urban farming [Poster presentation]. 9th Global Congress on Plant Biology and Biotechnology, Singapore.
28. Ganapathy, R. (2024, November 22). Development of a novel microbial cocktail to enhance seed germination and seedling establishment in leafy vegetables [Poster presentation]. SSAFF, Republic Polytechnic, Singapore.
29. Glendon. (2025, November 5–6). Microbiome changes of a recirculating aquaculture system for white leg shrimp Litopenaeus vannamei [Poster presentation]. Singapore International Agri-Food Week 2025, Marina Bay Sands Expo & Convention Centre, Singapore.
30. Guo, R., Loh, G. H., & Boey, C. K. (2026, June 4). Three-year implementation of personalised digital nudges to foster desirable online learning behaviours [Conference presentation]. Redesigning Pedagogy International Conference 2026, National Institute of Education, Nanyang Technological University, Singapore.
31. Huang, M., Yeo, T., Loh, G. H., Majal, P., Kumaran, A., Zhang, H., Yeo, A., & Pang, K. W. (2026, June 4). Advancing personalised and collaborative adult learning: Adopting microlearning, gamification, and chatbots in polytechnic continuing education [Conference presentation]. Redesigning Pedagogy International Conference 2026, National Institute of Education, Nanyang Technological University, Singapore.
32. Justin, D. S. (2024, September 11). Singapore regulatory requirements, challenges and best practices [Conference presentation]. Unilab International Regulatory Conference, PSR Lounge, Unilab Corporate Center, Manila, Philippines.
33. Koo, J. L. E., & Lim, J. Y. K. (2024). Enhancing post-harvest shrimp preservation with herb-infused spray technology [Poster presentation]. Temasek Polytechnic, Singapore.
34. Lee K.J.L. and Tan K.H. (2025, November 14-16). Hybridising recycled polypropylene and natural kenaf fibres for explosive spalling prevention in ultra-high performance concrete [Conference Paper]. 5th Asian Concrete Federation (ACF) Symposium: Advancing Sustainable solutions from Concept to Concrete, Singapore.
35. Li, H. (2024, July 5). Overview of registration and management of medicine and food homology in ASEAN [Conference presentation]. 6th International Scientific Conference of Probiotics and Prebiotics, Nanchang, Jiangxi Province, China.
36. Li, H. (2025, 17 January). Discussion on TCM. [Workshop Presentation]. Feiyue Community Service Sharing with Caregivers, Singapore
37. Li, H. (2026, 29 March). Traditional Chinese Medicine at the wildlife interface- from forest to laboratory, from rarity to sustainability. [Conference Presentation]. World Wildlife Day, Regional Youth Symposium 2026, National Park & Eu Yan Sang, Singapore.
38. Lim, J. Y. K., Ong, L. J. Y., Yu, P., Lim, C., & Abdul Jalil, R. (2025, May). Understanding youth perceptions of cultivated chicken in Singapore: A consumer experience study [Conference presentation]. Consumer Acceptance of Future Foods in Asia-Pacific: Utilizing Interventions to Promote Acceptance.
39. Loh, G. H., & Goh, L. B. (2024, October 15–16). A school improvement journey: Optimizing domain organization structure [Conference presentation]. International Conference on Leadership and Management in Higher Education: Innovations and Strategies in a Global Context, SEAMEO RETRAC with BCCIE, CBIE and CICan, Ho Chi Minh City, Vietnam.
40. Ng, C. Y. X., Lim, L. R. X., Loo, C. J. X., Chua, A., & Lim, J. Y. K. (2025). Development of hybrid plant-based fishball with cultivated fish cells for flavour enhancement [Poster presentation]. Young Scientist Symposium 2025, Science Centre Singapore, Singapore. Merit Award.
41. Ng, M., Marcus, C. T. E., Abdul Jalil, R., & Lim, J. Y. K. (2024, April). Optimization of bench-top bioreactor parameters for upscaling of stem cell culture and incorporation of stem cells into fish feed for nutritive value enhancement [Poster presentation]. Young Scientist Symposium, Science Centre Singapore, Singapore.

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POSTER PRESENTATIONS, WORKSHOPS, CONFERENCES & EXHIBITIONS

42. Ong, L. J. Y., & Toh, Y.-C. (2025, June 16–19). Microfluidic patterning of chondrocytes and osteoblasts with localised oxygen control: Culture and screening of anti-osteoarthritic drugs [Invited keynote]. AO Orthopaedic Research Summit 2025, Davos, Switzerland.
43. Ong, L. J. Y., Lim, Y. K., & Abdul Jalil, R. (2025, October 8–9). Poster presentation and third-place poster award [Poster presentation and award]. Singapore Food Toxicology Conference & Workshop 2025, Four Points by Sheraton Singapore, Riverview, Singapore.
44. Ong, Z. J., & Cho, K. M. (2025, March 13). Efficacy study on Asian leafy vegetables using fish wastewater in aquaponics systems [Poster presentation]. Young Scientist Symposium, Science Centre Singapore, Singapore.
45. Rahmatullah Khan, E. M. B., Farhana, F., Goh, S. Y., & Abdul Jalil, R. (2025). Investigating key parameters influencing the growth rate of fish fibroblast cells [Poster presentation]. Young Scientist Symposium 2025, Science Centre Singapore, Singapore.
46. Abdul Jalil, R. (2025a). Halal cultivated meat as a future alternative meat: The challenges [Invited speaker presentation]. Virtual Halal Mobility 2025, Halal Products Research Institute, Universiti Putra Malaysia.
47. Abdul Jalil, R. (2025b, April 21). Halal cultivated meat: Navigating technical and social challenges for the future of alternative protein [Invited speaker presentation]. International Seminar on Cultured Meat, Universiti Sains Malaysia and The University of Osaka ASEAN Campus, Penang, Malaysia.
48. Tan, G. P., & Cho, K. M. (2024, April). Efficacy study on Asian leafy vegetables using fish wastewater in aquaponics systems [Poster presentation]. Young Scientist Symposium, Science Centre Singapore, Singapore.
49. Wong, S. F. (2025, December 8). Development of concrete footpaths incorporating recycled mixed plastics [Invited lecture]. Singapore Scientific Conference 2025, Singapore.
50. Zhang, P., Guo, R., & Loh, G. H. (2025). Transforming science education through experiential learning: A multi-disciplinary implementation in applied science teaching [Conference paper]. SELF–ERAS International Conference 2025, Singapore.

INTELLECTUAL PROPERTY, INVENTION DISCLOSURES & PATENTS IN SINGAPORE

1. Amaladoss, A. (2024a). CRISPR-based detection of hand, foot and mouth disease virus (Singapore Provisional Patent Application No. SG 10202400337Q). Intellectual Property Office of Singapore.
2. Amaladoss, A. (2024b). CRISPR-based rapid onsite pathogen (CROP) test kit for shrimp (Singapore Provisional Patent Application No. SG 10202400336P). Intellectual Property Office of Singapore.
3. Amaladoss, A. (2025). A rapid, sensitive and user-friendly sample preparation and onsite porcine detection system (IDF serial no. 25/RPDIDF028/ASC/010) [Invention disclosure submission]. Temasek Polytechnic.
4. Goh, E., & Bhaskaran, K. (2025). Formulation of an innovative dispersed gold-flake-infused water prototype (IDF serial no. 25/RPDIDF012/ASC/005) [Invention disclosure filing]. Temasek Polytechnic.
5. Li, H., & Ahmad, S. Y. (2024, October 10). Combination of 32 herbal powder extract against dengue virus and dengue fever (IDF serial no. 24/RPDIDF021/ASC/006) [Invention disclosure filing]. Temasek Polytechnic.
6. Loh, W. N., Bhaskaran, K., & Yeo, K. T. (2025, June 12). Development of five ready-to-eat vending meal recipes that are HPB Healthier Choice Symbol-compliant under the convenience food category (IDF serial no. 25/RPDIDF021/ASC/008) [Invention disclosure filing]. Temasek Polytechnic.
7. Rajaseger, G., Patel, K. H., Eevera, T., & Arvind, G. (2025, November 9). Innovative organic seed coating and pelleting for boosting yield in baby pak choi (IDF serial no. 25/RPDIDF038/ASC/015) [Invention disclosure filing]. Temasek Polytechnic.
8. Shi, L. (2025). Renewal of license via amendment for Regentech Pte Ltd: Herbal Shi Hu preparation for prevention of diabetes [License renewal/amendment record]. Temasek Polytechnic.
9. Temasek Polytechnic. (2024a, September 18). Production method of non-structural facilities incorporating recycled urban wastes [Service agreement with K B Innovators Enterprise].
10. Temasek Polytechnic. (2024b, October 28–30). Recycled mixed polymer modifiers in bituminous materials [Technology offer for licensing and commercialisation]. TechInnovation 2024, Singapore.
11. Teo, Y. G., & Tan, J. (2025, September 9). Feed formulation using fish trimmings and fruit waste for tilapia (IDF serial no. 25/RPDIDF035/ASC/013) [Invention disclosure filing]. Temasek Polytechnic.
12. Wong, S. F., & Lee, K. J. L. (2024a, November 14). Recycled mixed polymer high-performance reinforcement fibres [Invention disclosure submission]. Temasek Polytechnic.
13. Wong, S. F., & Lee, K. J. L. (2024b, October 1). Recycled mixed polymer modifiers in bituminous materials (IDF serial no. 24/RPDIDF020/ASC/005) [Invention disclosure filing]. Temasek Polytechnic.
14. Wong, S. F., & Lee, K. J. L. (2024c, October 28). Recycled mixed polymer sand replacement lightweight aggregates [Invention disclosure submission]. Temasek Polytechnic.
15. Wong, S. F., & Lee, K. J. L. (2024d, September 17). Non-structural facilities using recycled urban wastes (IDF serial no. 24/RPDIDF018/ASC/004) [Invention disclosure filing]. Temasek Polytechnic.
16. Wuang, S. C., & Cho, K. M. (2025, December 23). Intelligent and sustainable container-based aquaponics system for Singapore (IDF serial no. 25/RPDIDF040/ASC/016) [Invention disclosure filing]. Temasek Polytechnic.

STAFF AWARDS & RECOGNITIONS

1. Amaladoss, A. (2024a). RIE Award 2024: Catalyst category for proposal that secured external grants [Award]. Temasek Polytechnic.
2. Amaladoss, A. (2024b). RIE Award 2024: Sparkle category for high-quality invention disclosure [Award]. Temasek Polytechnic.
3. Amaladoss, A. (2025a, August 1–2). Best Paper Presentation Award [Award]. International Conference on Cutting-Edge Strategies in Epidemiology and Diagnostics of Infectious Diseases, Indian Medical Microbiology Association and Saveetha Dental College, India.
4. Amaladoss, A. (2025b). Exemplary SkillsFuture @ Public Service Award 2025 [Award]. Public Service Transformation Awards.
5. Amaladoss, A. (2025c, October 6–7). Agathiyar Chemical Biology Award 2025 [Award]. Society of Chemical and Synthetic Biology, India.
6. Lee K.J.L. (2025, November 14). SCI Young Innovator Award 2025 (Gold) [Award]. Singapore Concrete Institute.
7. Li, H., Chen, Y.T., Mohamed Shirhan. (2025, 21 August). RIE award 2025, Impact Award Category: In-vivo Safety and Efficacy of TP & Liferoots® Herbal Remedy against Dengue [Award]. Temasek Polytechnic.
8. Li, H., Chen, Y.T., Mohamed Shirhan. (2026, 3 April). Gold award 2026: NV01—An Anti-Dengue Solution Derived from Millennia of Herbal Wisdom. 2nd China National Youth Competition, Healthcare Sector [Award]. China
9. Mohamed Shirhan Mohamed Atan. (2025). International collaborator acknowledgement in “From liquid biopsy to precision immunotherapy: The expanding role of extracellular vesicles in colorectal cancer” [Book chapter acknowledgement].

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MEDIA, COMMENTARIES & INTERVIEWS

1. 8world. (2024, July 16). Temasek Polytechnic develops insect cuisine as cricket bun debuts [Translated title; web article]. Mediacorp.
2. 8world News. (2024, July 16). Grinding silkworm chrysalises into powder and making noodles makes them less scary? [Translated title; digital news feature]. Mediacorp.
3. Bhaskaran, K. (2024, November 18). Alternative foods are better than ever. Why aren't our consumer choices catching up? [Commentary]. CNA.
4. Channel 8. (2024, September 9). Cooking with plant-based meat [Television broadcast segment featuring Chef Gary and Wu Manchao]. In Hello Singapore. Mediacorp.
5. Channel 8. (2025a, July 16). The fascinating world of flavour science behind herbs and spices [Television broadcast segment featuring Wu Manchao]. In Hello Singapore. Mediacorp.
6. Channel 8. (2025b, February 11). Food safety and wastage during Chinese New Year [Television broadcast segment featuring Wu Manchao]. In Hello Singapore. Mediacorp.
7. Channel 8. (2025c, August 11). How to keep food fresh in the kitchen [Television broadcast segment featuring Wu Manchao]. In Hello Singapore. Mediacorp.
8. Channel 8. (2025d, June 5). Sugary drinks and healthier food choices [Television broadcast segment featuring Wu Manchao]. In Hello Singapore. Mediacorp.
9. Channel 8. (2025e, November 5). Texture, flavour, and nutritional qualities of Jeju black pork and Hanwoo beef [Television broadcast segment featuring Wu Manchao]. In Hello Singapore. Mediacorp.
10. CNA. (2024, August 22). Dr Kalpana Bhaskaran on the effectiveness of Nutri-Grade labels [Live television interview]. Mediacorp.
11. Singapore Today. (2025, July 8). Food safety when consuming Teochew-style pickled raw seafood [Television broadcast segment featuring Guo Ren]. Mediacorp.
12. Lok, C. (2026, April 25). Best of both worlds: Is blended meat the food of the future? [Newspaper article featuring comments by Siti Saifa]. The Straits Times. https://www.straitstimes.com/life/food/best-of-both-worlds-is-blended-meat-the-food-of-the-future
13. Talk of the Town. (2025a, December 15). Healthy eating tips during the Christmas season [Television broadcast segment featuring Wu Manchao]. Mediacorp.
14. Talk of the Town. (2025b, October 6). Nutrition and science behind low-sugar mooncakes [Television broadcast segment featuring Guo Ren]. Mediacorp.
15. Talk of the Town. (2025c, September 1). Risks associated with binge eating [Television broadcast segment featuring Wu Manchao]. Mediacorp.
16. Talk of the Town. (2026, April 8). The lifting of the ban on pork blood imports [Television broadcast segment featuring Wu Manchao]. Mediacorp.
17. The Straits Times. (2024a, September 1). askST: Why do salt, saturated fat need Nutri-Grade labels when there's Healthier Choice symbol? [Newspaper article featuring comments by Kalpana Bhaskaran]. The Straits Times.
18. The Straits Times. (2024b, September 4). The war on salt and saturated fats [Audio podcast episode featuring Kalpana Bhaskaran]. In Health Check.
19. The Straits Times. (2024c, September 8). Sniff and sip: Make plain water taste like cola or a virgin mojito with just scent [Newspaper article featuring contribution by Evelyn Goh]. The Straits Times.
20. The Straits Times. (2025, February 22). A healthier choice? How juice vending machines like iJooz took over Singapore [Newspaper article featuring contribution by Loh Win Nie and Emma Choondee]. The Straits Times.
21. Vasantham. (2025a, October 22). Egg's nutritional content, flavour and safety [Television broadcast segment featuring Ramesh Kumar]. In Ethiroli. Mediacorp.
22. Vasantham. (2025b, December 18). Food leftovers: Safe convenience or silent risk [Television news segment featuring Ramesh Kumar]. In Tamil Seithi. Mediacorp.
23. Vasantham. (2025c, September 17). Wet markets business and culture in Singapore: Dying or reviving? [Television broadcast segment featuring Ramesh Kumar]. In Ethiroli. Mediacorp.
24. Wong, C. (2024, October 23). Temasek Polytechnic students get involved in food of the future: Cultivated meat [Newspaper article]. The Straits Times.

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RESEARCH GRANTS

FY	PI / Co-PI	Centre / Domain	Title of Project
FY24	Dr Ganapathy Rajaseger	CROPS	Sustainable Production of Plant-Based Bioactive Proteins
FY24	Dr Li Huan	CHP	Safety and Efficacy Evaluation of Herbal Therapeutic Innovation for a Viral Infectious Disease
FY24	Dr Mohamed Shirhan M. Atan	CAVS	Sustainable Bioproduction of High-Value Organic Acids Using Advanced Biotechnology
FY24	Ms Shahedah Md Ali	ED	Personalised Digital Learning Tool for Health Sciences Education
FY25	Dr Goh Lay Beng (PI)	CAVS/ CUS	Bioengineering of Microalgae to Enhance High-Value Biomolecule Production
FY25	Dr Kadamb Patel (Co-PI)	CROPS/ UACOI	Seed Innovation Hub (SIH)
FY25	Dr Kalpana Bhaskaran	CANS	Innovative Health and Wellness Platform for Personalised Nutrition
FY25	Dr Kalpana Bhaskaran (Co-PI)	CANS	Metabolic Health Profiling of Nutrition and Wellness Outcomes in Diverse Populations
FY25	Dr Kevin Lee (Co-PI)	CUS	Development of Sustainable Low-Carbon Construction Materials for Infrastructure Resilience
FY25	Dr Louis Ong	FF	Advanced In-Vitro Platform for Food Safety Risk Assessment
FY25	Dr Miao Huang	CUS	Development of Encapsulated Bioactive Ingredients for Health and Wellness Applications
FY25	Dr Miao Huang (Co-PI)	CUS/ CAVS	Circular Bioeconomy Network for Sustainable Bio-Based Chemical Innovation
FY25	Dr Poh Leong Loo	AIC	Sustainable Aquaculture Production Enhancement
FY25	Dr Rufaihah Abdul Jalil	FF	Advanced Bioprocess Optimisation for Sustainable Food Production
FY25	Dr Rufaihah Abdul Jalil (Co-PI)	FF	Development of an Advanced Cell-Based Platform for Therapeutic Research
FY25	Dr Saravanan Padmanabhan	AIC	Next-Generation Microbial Detection Kit
FY26	Dr Amaladoss Anburaj	CAVS	Development of an Advanced Molecular Onsite Testing System to Support Aquaculture Health
FY26	Dr Diana Chan (Co-PI)	AIC	Holistic Programme to Support Sustainable Marine Aquaculture
FY26	Dr Syed Musthaq S. Khader (Co-PI)	CAVS	Fish Health Management Through Onsite Early Detection Tools
FY25	Dr Wong Sook Fun (Co-PI)	CUS	Vertical 3D Printing of Materials for Construction Applications
FY25	Ms Evelyn Goh	CANS	Upcycling Food Processing By-Products for Value-Added Food Innovation
FY26	Dr Zhi Huang	WT	Bio-Based Innovation for Sustainable Biodegradable Material Development
FY26	Dr Syed Musthaq S. Khader	CAVS	Bio-Based Health Innovation for Sustainable Aquaculture Disease Management
FY26	Dr Wang Yanmei	CUS	Sustainable Formulation of High-Value Bio-Based Chemicals
FY26	Mr Jeremy Choo (Co-PI)	CUS	Sustainable Medical Device Recovery and Recycling Pilot

TP's Tech Offers & Licensing

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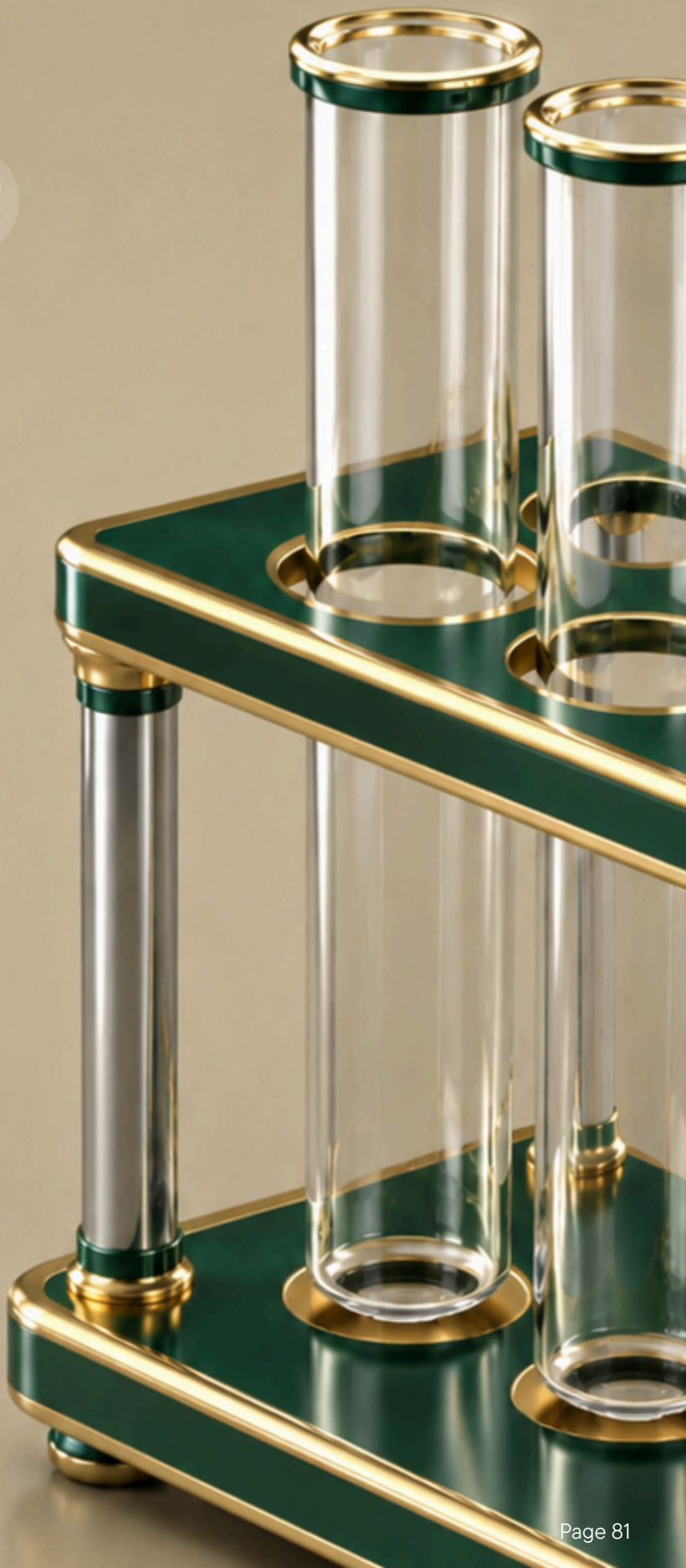
SCHOOL OF APPLIED SCIENCE

THE TEAM BEHIND THIS PUBLICATION



Celebrating 25 Years

CREATING TOMORROW WWW.TP.EDU.SG/ASC

SCHOOL OF APPLIED SCIENCE

THE TEAM

This report was designed and written by ASC, for ASC — a collective reflection of our people, progress, and shared commitment to advancing applied science education. Capturing moments in the world of science is about preserving the stories of curiosity, discovery, and impact that inspire progress and shape the future.

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The School of Applied Science gratefully acknowledges the invaluable contributions of our management, staff, students, alumni, course teams, centres, domains, student interest groups, industry partners, and stakeholders. Through the sharing of stories, photographs, achievements, and experiences, this community has helped document and celebrate ASC's journey, milestones, and impact from 1 May 2024 to 30 April 2026. This Biennial Report is a reflection of the collective dedication, collaboration, and excellence that continue to shape our school.

Disclaimer
Every effort has been made to ensure the accuracy of the information contained in this Biennial Report at the time of publication. The School of Applied Science, Temasek Polytechnic reserves the right to amend or update the information without prior notice.

DNA HELIX

*This theme **celebrates 25** remarkable years of ASC — a silver journey shaped by generations of students and staff who have learned, grown, adapted and innovated together. The **silver** honours our milestone and enduring pursuit of excellence; the **gold** reflects the meaningful impact we create for industry, community and society; and the emerald **green** represents the heart of ASC — our people, passion, courage and purpose. Inspired by the **DNA** helix, the design symbolises who we are: connected, evolving and full of possibility. From classrooms to laboratories, from ideas to real-world solutions, ASC continues to push boundaries, turn challenges into opportunities, and prove that when there is no path forward, we will find one — or make one.*

GRATITUDE

*We extend our deepest appreciation to the **School Advisory Committee, Institutional Review Board (IRB),** and **Institutional Animal Care and Use Committee (IACUC)** for your steadfast guidance, strategic counsel and invaluable industry perspectives in shaping the continued growth and direction of the school. Your insights, experience and commitment have been instrumental in strengthening the relevance and quality of our programmes, enabling us to provide meaningful, future-focused training for both young and adult learners, and to nurture them into competent, confident and industry-ready professionals.*

*We are equally grateful to our **industry partners** for your generous sharing of expertise, mentorship and continued support for our staff and students over the years. Your partnership has enriched learning, broadened real-world exposure, and contributed significantly to the development of graduates who are well-prepared to serve and lead in their respective fields.*

We look forward to building on these valued relationships and advancing our shared commitment to education, industry excellence and lifelong learning in the years ahead.

POSSIBILITIES

*Guided by the spirit of **Aut viam inveniam, aut faciam** — "I shall either find a way, or make one" — ASC continues to turn challenges into possibilities, the impossible into impact, and every step of the journey into something truly meaningful at our **Seriously Fun School**.*

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