

2025

NEWSLETTER

ISSUE 07



ABIC Wins Gold Medal & Grand Prix at SVIIF 2025 for Next-Generation PCR Diagnostics

ABIC is pleased to announce its spin-off company, Multera, has been awarded Gold Medal and Grand Prix, the highest honor at 2025 Silicon Valley International Invention Festival (SVIIF). The project was previously polled as Most Favorite Pitching Award at ABIC Pitching Corner 2024.

Multera's innovation, the next-generation PCR barcoding platform, redefines molecular diagnostics that transcends the limitations of conventional PCR in detecting DNA target loci. With ultra-high-throughput capabilities comparable to sequencing, the platform empowers clinical laboratories via simply purchasing the instrument and consumables ideal for cancer diagnostics, infectious disease detection, and genetic disorder screening.

[Photo] From Left to Right:

Mr. D.C. CHEUNG, Director, Hong Kong Economic and Trade Office, San Francisco, The Government of the HKSAR

Ms. Sigrig CHEN, Co-founder & Chief Operating Officer of Multera, Head of Business Development of ABIC

Ir Prof. Andrew YOUNG, Co-opt Member, Sub-committee on Low Carbon Transition, Council for Carbon Neutrality & Sustainable Development, Hong Kong Government

Nurturing Global Biomedical Trailblazers: ABIC Interns' Opening Ceremony 2025

On 10th July 2025, ABIC launched its flagship Interns' Opening Ceremony, welcoming a vibrant cohort of over 50 high-caliber undergraduate interns selected from the world's top 100 prestigious universities, including Harvard, Stanford, UC Berkeley, Cornell, Oxford, Imperial College, embarking upon their transformative summer placements and research journeys.

Two representative students—**Mr. Benjamin Brenner** from *Harvard University* and **Ms. Theresa Jiao** from *Stanford University*—shared their collective excitement for the opportunity to engage in hands-on and field-immersive research work. They highlighted the program's rare balance of peer-to-peer intellectual collaborations, exposure to real-world translational challenges, and mentorship by ABIC's top-notch principal investigators and global advisors.

Their reflections resonated deeply with the Centre's long-standing mission: to nurture an ever-expanding pipeline of biomedical innovators equipped to shape a healthier, more equitable world.



The ceremony is a symbol of ABIC's commitment to supporting the young capital of innovation, empowered to explore, experiment, and excel. ABIC is honored to support with cutting-edge lab experiences, strategic industry exposure, and chances to co-develop solutions with market-ready spinoffs and experienced teams under the Centre's umbrella.

Looking forward, the cross-cultural student cohort reflects the Centre's growing role as a regional and international education powerhouse and talent hub, bridging

global excellence with HK's vibrant research and innovation landscape. The success of the ceremony was a testament to how science can be taught not only in labs and lectures, but also through an inclusive and dynamic community that forges lifelong networks among scientists, clinicians, and technopreneurs of tomorrow.

Bridging Biomedical Exchange: ABIC Interns Visit GBA Innovation Hubs

On 22nd July 2025, ABIC organized a full-day industry immersion visit to Guangzhou, offering its cohort of international summer interns a rare behind-the-scenes glimpse into the Greater Bay Area's thriving biotechnology landscape.

At *KingMed Diagnostics* and *Burning Rock Dx*, the Centre's interns explored the advanced AI-integrated medical testing workflow, marking their transformative leap in intelligent diagnostics that reduces dependency on manual labor.

United Family Healthcare complemented a full-scale private hospital tour with high-value, interactive discussions led by Dr. Kelly Xia, General Manager and Chief Physician, offering advisory industry insights into the future of patient care and multidimensional career pathways.

From homegrown traveling to cultural exchange and departmental familiarization, this multifaceted exchange fosters interns' profound appreciation for regional-scale biomedical operations, underscoring ABIC's commitment to empowering future leaders and talents through experiential learning and exposure to real-world research translation. ABIC extends heartfelt thanks to its hosts for their generous hospitality and anticipates further future exchanges that bridge scientific excellence and industrial opportunities.

The delegation visited three regionally renowned institutions: *KingMed Diagnostics*, *Burning Rock Dx*, and *United Family Healthcare*. Each hosted a curated two-hour program that combined exclusive on-site tours and strategic overviews, offering unique opportunities to access their cutting-edge translational clinical settings.



From Curiosity to Impact: ABIC Interns' Closing Ceremony

On 27 August 2025, ABIC Summer Internship Programme concluded successfully with a Closing Ceremony. Over the past weeks, the Centre interns have demonstrated remarkable resilience, embraced challenges, learned with passion, and contributed to meaningful, translatable innovations in biomedical science. Their intellect, energy, and teamwork at ABIC have left a lasting mark on our scientific community. We are confident these future leaders will carry forward ABIC values of impact and continue to shape the bright futures of biomedical innovation in advancing societal healthcare.



Voices of Science Future: REFLECTIONS FROM ABIC SUMMER INTERNS 2025

“

ABIC's work culture is incredibly nurturing, inclusive, and growth-oriented, fostering an environment where questions are welcomed, ideas are celebrated, and individual success is as valued as scientific achievement.

Prof. Paddy Chan, Centre Co-Director, ABIC



Benjamin Brenner

Harvard University

This summer, I investigated the spontaneous curvature of lipid membranes to enhance cellular vesicle uptake using molecular dynamics simulations.

ABIC fostered a rare balance of autonomy and guidance, creating an ideal research environment. Beyond scientific growth, the work culture was equally supportive, where colleagues were kind and welcoming. I am truly grateful for the intellectually fulfilling experience and valuable friendships developed.

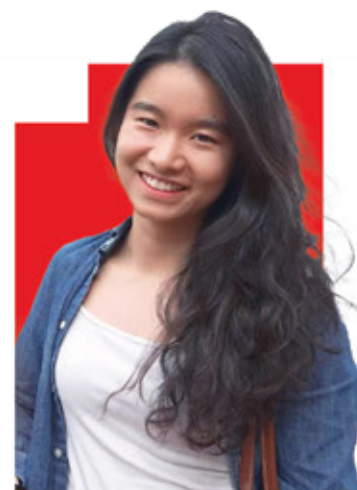


Ruth Yu

University of British Columbia

Supporting molecular diagnostic platform through hands-on experimentation with PDMS wafer fabrication and microfluidic droplet generation has enriched my understanding of translational diagnostics.

Visiting biotech firms in Guangzhou and attending seminars have further expanded my exposure to the global healthcare industry. I really cherish this ABIC internship for its valuable technical competence with meaningful connections, and opportunities presented to explore the natural beauty of Hong Kong.



Sufen Zhu

University of Oxford

At ABIC, I developed reinforcement learning models to design microfluidic channels for specific flow patterns, refining my understanding of how AI intersects with biomedical engineering.

I was impressed by ABIC's unique emphasis on translational strategy, which encourages us to consider the real-world impact beyond the lab. Trusted with meaningful responsibilities and surrounded by interdisciplinary collaborative minds, this high-level internship experience was tremendously thought-provoking and empowering.



Nurul Hameed

City University of Hong Kong

My time at ABIC has been technically enriching and personally transformative.

Hands-on experience with confocal microscopes, spectrophotometers, and 3D printers has significantly enhanced my research skills and professional confidence. ABIC's work culture is incredibly nurturing, inclusive, and growth-oriented, fostering an ideal learning environment. As my internship concludes, I'll genuinely miss the environment and incredible people who made this journey so rewarding.



Billy Ko

King's College London

Working on probiotic braces for periodontal treatment was a pivotal experience that deepened my passion for biomedical devices and drug delivery systems.

Interdisciplinary collaboration with researchers from HKU Dentistry was particularly inspiring. ABIC fosters a warm and inclusive environment, where colleagues were generous in helping to bridge my learning curve with patience. The past two months have been immensely fulfilling, solidifying my interest in healthcare with a sense of belonging.



Brian Ip

The University of Hong Kong

ABIC helped me confront personal challenges with professional development. Serving as the emcee for the Biomedical Salon helped me overcome stage fright and improve public speaking skills.

I was pleasantly surprised by the supportive culture, where seniors were approachable and genuinely caring. My early anxieties faded as I embraced a vibrant, encouraging workplace with tailored company visits and Interns' Opening Ceremony. I would definitely recommend ABIC to my friends in the field!

Celebrating Global Brilliance: ABIC Innovators Shine at iCAN 2025 with International Awards

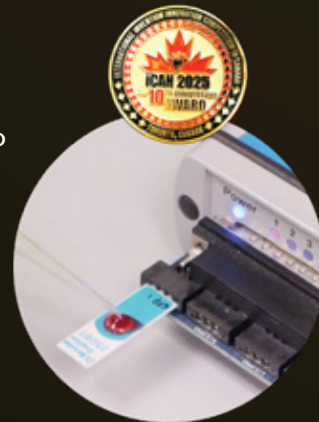
The Advanced Biomedical Instrumentation Centre (ABIC) is proud to announce that 3 of its distinguished inventions have earned multiple international distinctions for their groundbreaking biomedical solutions for global healthcare in the 10th International Invention Innovation Competition in Canada (iCAN 2025). Organized by the Toronto International Society of Innovation & Advanced Skills (TISIAS), the competition welcomed participants from 96 countries and regions, marking a decade of legacy on the world stage in bringing together outstanding minds from the global innovation community, commending a celebration of ingenuity, resilience, and impact.

ABIC's Success: Award-Winning Inventions

Electrochemical Biosensor for Rapid and Real-Time Detection of Key Inflammatory and Stress Markers

Inventors: Prof. Julian Tanner, Dr. William Whitehouse, Dr. Lin Wang, Dr. Louisa Lo
Awards: Gold Medal; Top 10 Best Invention Awards; International Special Award (Highly Innovative Unique Foundation in the Kingdom of Saudi Arabia)

The project demonstrates a prototype biosensor for rapid and real-time detection of proteins and small molecules on a single platform. The device makes use of miniaturized electrodes and state-of-the-art DNA aptamer-based molecular switches. It requires only a single drop of blood (or other biofluids) to provide a quantitative and digital output of the biomarker of interest.



Electret-induced polarization on droplet: a general liquid handling module for digital microfluidics (US Non-provisional Patent Application No: 18/910,845 and Chinese Patent Application No: 202411620634.7)

Inventors: Prof. Anderson Ho Cheung Shum, Dr. Ruotong Zhang, Dr. Zheqi Chen
Awards: Gold Medal; Top 20 Best Invention Award; International Special Award (Eurobusiness & Haller Pro Inventio Foundation)

The invention presents a liquid-handling module for digital microfluidics based on electret-induced polarization on droplet (EPD), enabling a low-voltage droplet actuation compatible with a wide variety of liquids. Unlike traditional electrowetting-on-dielectric (EWOD), which suffers from protein adsorption and incompatibility with organic liquids, EPD can manipulate diverse samples—including organic solvents, proteins, cells, and biofluids—without compromising their activity. The EPD module can be easily integrated into commercial EWOD systems and readily coupled with robotic automation, offering a drop-in upgrade for existing digital microfluidic platforms. This versatile, scalable solution facilitates broader adoption of digital microfluidics in diagnostics, drug screening, and chemical synthesis.



Deep Visual Immune Cell Profiling (Deep VICP)

Inventors: Prof. Kevin Kin Man Tsia, Mr. Sam Chi Kai Ho, Mr. Dickson Man Dick Siu
Awards: Gold Medal; International Special Award (Romanian Inventors Forum); Canadian Special Award; Certificate of Excellence (TISIAS)

Early detection of Chronic Kidney Disease (CKD) remains a significant challenge, leading to delayed intervention and increased healthcare costs. Current screening methods such as blood and urine tests often lack sensitivity to seek out asymptomatic patients.

Deep VICP, a novel label-free imaging system, offers a breakthrough in CKD assessment by detecting peripheral blood immune cells at various activation stages. By providing an inflammatory score, Deep VICP enables precise staging of CKD, improving early diagnosis and patient management. This technology helps optimize treatment strategies such that chances of complication occurrences related to CKD can be reduced.



ABIC's Commitment to Real-World Translations

ABIC's success at iCAN 2025 highlights the Centre's commitment to cultivating ideas that extend beyond laboratories into clinics, communities, and global markets. The recognition serves as both validation and a springboard for ABIC's broader mission in empowering lives through connection, recognition, and purpose, solidifying ABIC's role as one of the most globally inclusive platforms and hubs of innovation excellence across continents, driven to redefine, inspire, and transform lives.



INTERNATIONAL WOMEN'S DAY

Women scientists play a crucial role in advancing science and technology by bringing diverse perspectives and innovative ideas. Their unique insights challenge conventional thinking, foster collaboration, and drive breakthroughs that benefit society as a whole.

We highlight two ABIC young women scientists:

Dr. Piyawan Paisrisarn and Dr. Michelle Lo, who are making

How women scientists empower the development of science and technology?

“

Growing up, I was inspired by women scientists such as Dr. Krisana Kraisintu, a pharmacist from Thailand who devoted life to making medications more accessible.

Her groundbreaking work in developing the world's first generic HIV/AIDS medicine has saved countless lives and motivated me to pursue research for societal benefit.

contributions to the biomedical engineering field!

Dr. Piyawan Paisrisarn is developing a groundbreaking solution for real-time monitoring of nutrients and contaminants in breast milk. Her work is vital for ensuring infant health and supporting maternal nutrition.

Dr. Michelle Lo is pioneering AI-driven solutions for biomedical imaging, focusing on fertility care. Her research transforms healthcare, bringing innovative technology to improve fertility treatments and patient outcomes.



Dr. Piyawan Paisrisarn

Ph.D. in Biomolecular Engineering,
Nagoya University, Japan
Expert from Thailand



Dr. Michelle Lo

Ph.D. from University of Hong Kong
Specialist in AI-driven Biomedical Imaging
Home-grown Expert Rooted in Hong Kong

“

Women scientists bring fresh perspectives that challenge conventional thinking and drive innovation.

By uniting the strengths of both genders, science becomes more holistic, thoughtful, and impactful—leading to discoveries that benefit all of humanity.



Both women inspire us with their dedication and passion for impactful research.

Their journeys remind us that knowledge is power and that together, we can drive meaningful change for a better tomorrow.

expertise

science