



ntu beats

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Newly Elected Academicians

- Physics Museum Displays Historic Milestone
- Innovative UIBP Marks Record Graduation Year
- NTU, MIT Dedicated to Smart Healthcare



GIS Taiwan 2026: Building Connections, Shaping the Future

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HONOR

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HONOR

 李文卿 Wen-Ching Wines Li 國家理論科學研究中心數學中心特聘講座 Distinguished Scholar, Division of Mathematics, NCTS	 陳玉茹 Yu-Ju Chen 化學系 合聘教授 Professor (joint appointment), Department of Chemistry, NTU	 郭大維 Tai-Mei Guo 資訊工程學系 名譽教授 Professor Emerita, Department of ECE, NTU
 陳瑞華 Hsuey-Hua Chen 生命科學院生化科學研究所醫學院 合聘教授	 李建良 Chien-Liang Lee 法律學院 合聘教授 Professor (joint appointment), NTU College of Law	

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GLOBAL OUTLOOK



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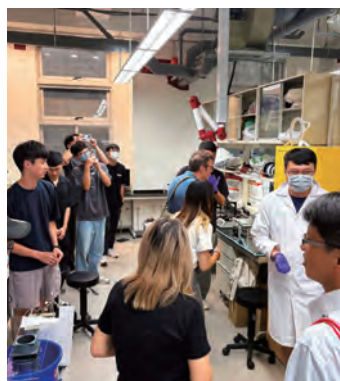
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NTU and MIT Advance Smart Healthcare through Microfluidic ...

To strengthen international academic exchanges and explore the applications of microfluidic technologies in smart healthcare and precision medicine, National Taiwan University (NTU) ...

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ACHIEVEMENTS



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An innovative platform technology recently developed at NTU has set a new benchmark for contact metrology in next-generation semiconductor devices.

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Uncovering a Novel Neuro-Immune Mechanism in Lung Cancer and Paving the Way for Nerve-Targeted Cancer Therapy

Lung cancer remains the leading cause of cancer-related deaths worldwide, with lung adenocarcinoma being the most common subtype. Immunotherapy has brought new hope to cancer patients in recent years; however, only a minor proportion of lung cancer patients have benefited from these treatments. Boosting the effectiveness of ...

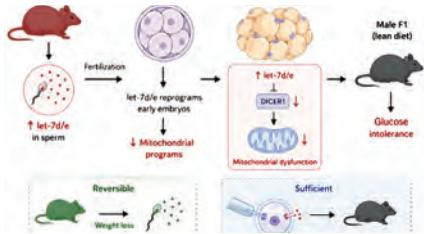
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Atomic Force Microscopy Reveals Nanoscopic Raft Dynamics on Cell Membranes: From Hypothesis to Visualization

Over the past million years, Earth's climate has undergone regular 100,000-year glacial cycles. After approximately 90,000 years of gradual cooling, each cycle was followed by a relatively rapid phase of deglaciation and warming, known as a glacial termination ("Termination"). Around 340,000 years ago, during the fourth glacial ...

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Southern Ocean Intermediate Waters Held the Key to Earth's CO2 Past

A father's weight before conception can subtly influence his children's metabolic health, according to a new study led by researchers at National Taiwan University (NTU) and the University of Southern Denmark (SDU). The study report, published in Nature Communications, identifies a tiny sperm-borne microRNA, let-7, as the molecular messenger that carries this signal from father to child.

[...more](#)

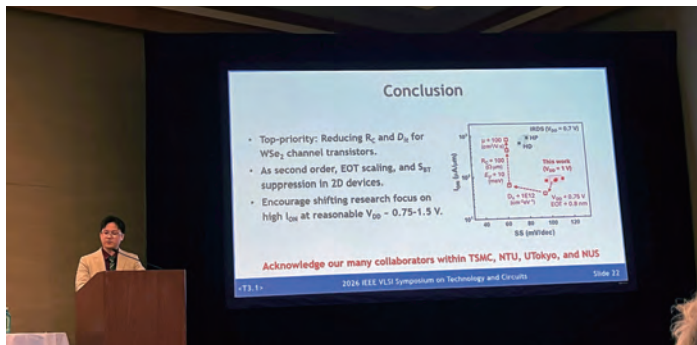
TEACHING & LEARNING



NTU VR Lab Training Module Selected for SIGGRAPH 2026

As Extended Reality (XR) and Artificial Intelligence (AI) become increasingly integrated into higher education, National Taiwan University's Digital Learning Center continues to advance digital teaching innovation by supporting faculty in developing Virtual Reality (VR) training modules that enhance student learning through immersive experiences. Among its recent interdisciplinary collaborations, a VR training module for laboratory mouse blood collection, ...

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NTU Advances 2D Semiconductor Technologies at IEEE VLSI 2026

The IEEE Symposium on VLSI Technology and Circuits (IEEE VLSI) is one of the world's premier conferences in semiconductor research, where leading companies and research institutes present their latest technological ...

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Whispers of Bone: A New Chapter in Veterinary Education

The School of Veterinary Medicine held the Veterinary Education Development Donation Appreciation Ceremony and the Whispers of Bone: Veterinary Anatomy Gallery Unveiling Ceremony on June 11. The event ...

[...more](#)



Exploratory Learning at NTU Opens New Pathways Beyond the ...

What if students could pause their academic path—not by taking a leave of absence, but by stepping into the world to discover what truly inspires them? National Taiwan University's ...

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University Interdisciplinary Bachelor's Program Marks Record ...

National Taiwan University's University Interdisciplinary Bachelor's Program (UIBP) celebrated a milestone at the end of academic year 2025-26: 16 students ...

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PEOPLE



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[...more](#)



Han Dynasty Pottery Exhibition Showcases Landmark Gift from NTU Alumni

The NTU Museum of the Graduate Institute of Art History received a landmark gift of 149 Han Dynasty pottery objects from alumni Mr. and Mrs. Tashao Shih, formally bequeathed to the Museum's collection on December 19, 2025. The donation represents the largest single gift received since the Museum's establishment in 2023.

[...more](#)



Charting Your Own Path: NTU Welcomes the Class of 2026

National Taiwan University (NTU) welcomed its newest students at the 2026 Academic Year Opening Ceremony on September 6. The program offered a rich blend of student performances, ...



[...more](#)



General Chemistry Experiments on the Kitchen Counter

The aroma of freshly prepared food drifted through the foyer outside the lecture hall. During the intermission, speaker Stalu invited members of the audience to sample chicken breasts ...

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<https://ntubeats.ntu.edu.tw/enews/016>

| FEATURES

Decoding Cells, Defining Possibilities

Share:     



| Intro-video of Associate Professor Annie Chi-An Cheng.

"Scientists have to be specific" is a familiar reminder that Associate Professor Annie Chi-An Cheng gently offers to her students at National Taiwan University's School of Pharmacy. Her eyes, usually warm and smiling, sharpen once the conversation turns to scientific research.

Precision is not only Cheng's approach to research—it is her approach to life.

Her academic journey commenced from chemistry, engaged biomedical engineering, and culminated in pharmacy. With curiosity as her compass, each turning point has been more than a departure--but rather a continuation and deepening of pursuing the questions she has wanted to answer. Although her path appears broad, every step has advanced naturally from the last.

"Whenever I choose to leave something behind, it's because something even more exciting lies in wait ahead," Cheng declares. And before making each leap, she carefully plans and prepares for what comes next.

During her two-year postdoctoral fellowship at Harvard University, the COVID-19 pandemic forced her to confront two very different futures. Should she remain



Associate Professor Annie Chi-An Cheng, recipient of the 2026 Outstanding Women in Science Award (Rising Star Award).

in the United States and pursue opportunities in industry, or return to Taiwan to continue her academic career?

Ultimately, family and a passion for education and research drew her home. Carrying with her the research questions she still yearned to answer, Cheng returned to Taiwan to establish her own laboratory.

Today, her research focuses on decoding the disease signals carried by tumor-derived extracellular vesicles (tEVs). Extracellular vesicles (EVs) are nanoscale particles released by cells that transport molecular messages between them.

"They're like messages in a bottle," Cheng says with a sparkle in her eye. "Each one carries information sent by a cell."

Her laboratory has developed three complementary technologies: one to isolate EV subpopulations, another to analyse the proteins on their surfaces and within their interiors, and a third to reprogram their biological cargo, transforming EVs into potential tools for cancer therapy. Looking ahead, Cheng hopes to deepen her research on pancreatic cancer and translate these technologies into clinical applications that can address some of the disease's most vexing therapeutic challenges.

"Honestly, I enjoy where I am now more than ever," she says.

Although she continually challenges her students to ask more precise questions and focus on the opportunities within their control, she has also learned to accept the uncertainties that cannot be controlled in scientific explorations. Over time, her laboratory has grown into a team of researchers who share the same determination to tackle difficult problems together.

"Our goal is to take our research to the next level—to challenge questions that are even harder and more complex."

As she talks about the future, her excitement is unmistakable.

In 2026, Cheng received the Outstanding Women in Science Award (Rising Star Award) in Taiwan. To her, the recognition is at once an honor and a reminder that gender disparities in scientific research still exist. Alongside advancing her own research, she has begun visiting high schools to share her experiences, encouraging young students—especially girls—not to place limits on themselves and inspiring the next generation to pursue scientific discovery.

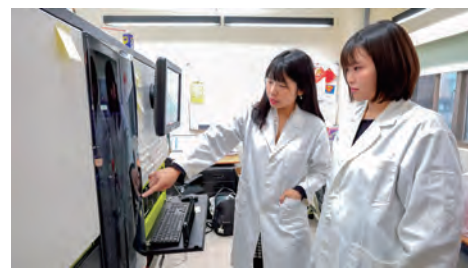
After one high school talk, a student wrote to her:

"After listening to your talk, I want to understand more and experience more different things."

Whenever Cheng encounters moments of discouragement, she thinks of those words—and of the sparks she has helped ignite. They are enough to renew her sense of purpose.

She smiles gently.

"That's why we're still here."



Professor Cheng discussing instrument operation with a Ph.D. student in her laboratory.



Professor Cheng leading a regular lab meeting, discussing the team's latest research progress with her students.



Besides teaching, Professor Cheng is presently focused on developing new technologies. Her next goal is to investigate more complex biological systems while continuing to advance extracellular vesicle (EV) research in pancreatic cancer, aiming to overcome drug resistance through innovating EV-based therapeutic strategies.

I HONOR

NTU Scholars Earn Taiwan's Highest Academic Distinction

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賀本校師長獲選 中央研究院第35屆院士

The 35th Academicians, Academia Sinica



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Professor (joint appointment),
Institute of Biochemical Sciences
and the College of Medicine, NTU



李建良 Chien-Liang Lee
法律學院 合聘教授
Professor (joint appointment), NTU College of LAW

Hearty congratulations to the five NTU faculty members elected as Academia Sinica Academicians in the 35th election.

Academia Sinica announced the election of its 35th class of Academicians on July 9. Five current National Taiwan University (NTU) faculty members were among the 19 newly elected recipients of Taiwan's highest academic honor.

The newly elected NTU faculty members are:

- Wen-Ching Li, Distinguished Scholar, National Center for Theoretical Sciences (Mathematics Division) (*Mathematical and Physical Sciences*)
- Yu-Ju Chen, Jointly Appointed Professor, Department of Chemistry (*Mathematical and Physical Sciences*)
- Tei-Wei Kuo, Professor Emeritus, Department of Computer Science and Information Engineering (*Engineering Sciences*)

- Ruey-Hwa Chen, Jointly Appointed Professor, Institute of Biochemical Sciences, College of Life Science, and Graduate Institute of Molecular Medicine, College of Medicine (*Life Sciences*)
- Chien-Liang Lee, Jointly Appointed Professor, College of Law (*Humanities and Social Sciences*)

NTU extends its heartiest congratulations to these distinguished scholars in recognition of their outstanding academic achievements and contributions to research. Their election is a source of great pride for the entire NTU community.

This year's newly elected Academicians also include several NTU alumni: Wen-Ching Li, Kuo-Feng Ma, Yu-Ju Chen, Tei-Wei Kuo, Cheng-Shan Kuo, Ching-Hwa Sung, Ruey-Hwa Chen, Hsiao-ti Lee, and Kuan-Chung Huang. In addition to being an NTU alumnus, Hsiao-ti Lee also previously served as an adjunct professor in NTU's Department of History.

Election as an Academician of Academia Sinica is a lifetime honor and represents Taiwan's highest academic distinction. Academicians are elected through a rigorous process conducted in accordance with the Regulations for the Election of Academia Sinica Academicians, including multiple rounds of review, careful evaluations, and final voting by the full body of Academia Sinica Academicians during the Convocation of Academia Sinica.

I HONOR

Linear Particle Accelerator at NTU Physics Museum Recognized as IEEE Historical Milestone

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| The power supply system of Asia's first linear particle accelerator, on display at the NTU Physics Museum.

In 1934, a tiny spark observed by a research team in a darkened laboratory led to a landmark achievement in Asian science. Under the leadership of Professor Bunsaku Arakatsu, researchers at what is now National Taiwan University constructed Asia's first linear particle accelerator. On July 25, 1934, the team successfully accelerated particles and induced the fission of lithium nuclei—the first successful experiment of its kind conducted in Asia. Although the original accelerator was moved to Kyoto University in 1936, NTU physicists constructed an identical accelerator in 1948, which remained in operation until 1985. The NTU Physics Museum, established in November 2005, was curated around this remarkable story following the complete restoration of the accelerator by retired Department of Physics staff and historians. The restoration project was initiated and carried out during the tenure of Professor Ching Ray Chang as Chair of the Department of Physics.



| The primary target chamber of the reconstructed linear particle accelerator.

In 2025, Professor Chang submitted the history of the accelerator to the IEEE History Committee. In May 2026, the IEEE Milestone Program officially recognized the linear particle accelerator as one of fewer than 400 IEEE Milestones worldwide. The IEEE Milestone Program honors landmark achievements in engineering, computer science and information technology, the physical sciences, biological and medical sciences, mathematics, technical communications, education, management, and law and policy.

To commemorate this achievement, NTU will hold an unveiling ceremony on November 9, 2026, honoring the pioneering researchers whose passion, know-how, perseverance, and scientific vision made possible the construction of Asia's first linear particle accelerator.

The Physics Museum, located on the ground floor of Building No. 2 on NTU's main campus, welcomes visitors to experience this newly recognized milestone in the history of science and technology.



Engineers reassembling the historic linear particle accelerator during the restoration project.



For more information about the history of the accelerator and its recognition by the IEEE Milestone Program, please refer to the feature article in the *NTU Alumni Bimonthly*.

| GLOBAL OUTLOOK

NTU to Host APAIE 2028 During Centennial Year

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| NTU President Wen Chang Chen and APAIE President A/Prof. Dr. Mohd Ariffin bin Abu Hassan displaying the signed host agreement for the APAIE 2028 Conference and Exhibition.

National Taiwan University (NTU) has signed the host agreement with the Asia-Pacific Association for International Education (APAIE), officially confirming that NTU will host the APAIE 2028 Conference and Exhibition in Taipei. This hosting of APAIE 2028 during NTU's centennial year is especially meaningful; it will be part of the University's celebration of her century of academic excellence, institutional achievement, and expanding global engagement.

APAIE is one of the Asia-Pacific region's leading higher education networks, convening university leaders, international educators, policymakers, and higher education professionals from around the world. Through its annual conference and exhibition, APAIE fosters international dialogue, strategic partnerships, and innovation in higher education. NTU is honored to partner with APAIE in preparing for the 2028 conference, thus to contribute to the advancement of international higher education collaboration across the region.



| Representatives from Taiwan's Ministry of Education, the Foundation for International Cooperation in Higher Education of Taiwan (FICHET), APAIE, and NTU at the signing ceremony, marking the official launch of preparations for APAIE 2028.

Hosting APAIE 2028 marks an important milestone for NTU. The University last hosted the APAIE Conference in 2011, and the 2028 conference will be the second time NTU has that honor. It will also be the third time Taiwan hosts APAIE, underscoring the country's longstanding contributions to regional and global higher education. For NTU, hosting this conference during its centennial year reflects both its enduring commitment to internationalization and its growing role in shaping the future of global higher education.

The signing of the agreement also marks a new chapter in the partnership between NTU and APAIE. With the support of Taiwan's Ministry of Education and the Foundation for International Cooperation in Higher Education of Taiwan (FICHET), NTU looks forward to welcoming higher education leaders and partners from across the Asia-Pacific and beyond, while showcasing Taiwan's strengths in higher education—including academic excellence, openness to international collaboration, and a vibrant research and innovation ecosystem.

GLOBAL OUTLOOK

NTU and Charles University Forge Strategic Partnership

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NTU and Charles University sign a Strategic Partnership Agreement on June 3. Signatories NTU Vice President for International Affairs Prof. Hsiao-Wei Yuan (left) and Charles University Vice-Rector for Accreditation and Education Quality Karel Kouba (right) display the agreement.

National Taiwan University (NTU) and Charles University inked a Strategic Partnership Agreement on June 3, further strengthening academic collaboration between the two institutions. Previously, Charles University had only three strategic partners worldwide. With the recent addition of NTU and National Chengchi University, the university has reaffirmed its strong commitment to expanding higher education cooperation with Taiwan.

Founded in 1348, Charles University is the oldest university in the Czech Republic and one of Central Europe's most prestigious research institutions. NTU and Charles University have long-standing collaborations through student exchanges, academic visits, and joint research. Both universities are also active participants in the University Academic Alliance in Taiwan (UAAT) and the Interested Czech



Vice President for International Affairs Prof. Hsiao-Wei Yuan presenting NTU's long-established and wide-ranging partnerships with Czech higher education institutions. She further recalled her research on pangolins, observing that Taiwan's gift of pangolins to the Czech Republic is a vital symbol of their bilateral cooperation in wildlife conservation.

Universities (ICU) initiative promoted by Taiwan's Ministry of Education, further strengthening bilateral ties. Building on this foundation, the two universities signed the new strategic agreement to establish a more institutionalized framework for future cooperation.

The agreement was signed by NTU Vice President for International Affairs Prof. Hsiao-Wei Yuan and Charles University Vice-Rector for Accreditation and Education Quality Karel Kouba, representing Rector Jiří Zima. The ceremony was held during the visit of Czech Senate President Miloš Vystrčil to Taiwan and was attended by Joyce Yu-Jiuan Lee, Director-General of the Ministry of Education's Department of International and Cross-Strait Education, together with representatives from Taiwanese and Czech higher education institutions.

Under the agreement, both universities will advance joint initiatives within the UAAT–ICU framework, promote innovative teaching and research collaboration, and support student and faculty exchanges.

Vice President Yuan highlighted the long-standing and wide-ranging collaboration between NTU and Czech universities, noting that the agreement provides an important framework for expanding future academic cooperation. Vice-Rector Kouba reaffirmed Charles University's commitment to the partnership, emphasizing future opportunities in dual-degree programs, collaborative research, and international partnerships that promote democratic values while creating broader opportunities for future generations of students.



The signing ceremony was held during the visit of Czech Senate President Miloš Vystrčil to Taiwan (center) and attended by Joyce Yu-Jiuan Lee, Director-General of the Ministry of Education's Department of International and Cross-Strait Education (left), with representatives from Taiwanese and Czech higher education institutions.

| GLOBAL OUTLOOK

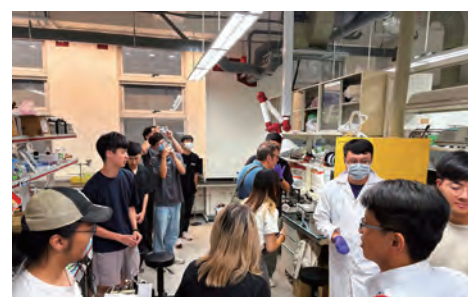
NTU and MIT Advance Smart Healthcare through Microfluidic Innovation

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Seminar speakers and guests. Front row, from left: Prof. Nien-Tsu Huang, NTU; Prof. Joel Voldman, MIT; Prof. Tsung-Lin Yang, NTU Deputy Vice President for Research and Development; Associate Professor Ya-Yu Chiang, NTU; and Mr. Charles Tsai, CEO of Leadgene Biosolutions. (Group photo.)

To strengthen international academic exchanges and explore the applications of microfluidic technologies in smart healthcare and precision medicine, National Taiwan University (NTU) hosted a seminar and industry-academia networking event, "Microfluidic Technologies for Immune Assessment and Personalized Medicine," on June 25. The event featured Prof. Joel Voldman of the Massachusetts Institute of Technology (MIT) and Prof. Nien-Tsu Huang of NTU's Department of Electrical Engineering and Graduate Institute of Biomedical Electronics and Bioinformatics. Faculty members in related fields and industry experts were also invited to participate in the discussions. In welcoming remarks, Prof. Tsung-Lin Yang, Deputy Vice President for Research and Development at NTU, asserted, "We hope everyone will actively participate in today's event, contributing valuable insights from different perspectives; so that, together, we may explore new possibilities that enrich academic research and spawn future opportunities for collaboration."



Prof. Joel Voldman visiting Associate Professor Ya-Yu Chiang's laboratory.

Opening the seminar, Prof. Voldman presented his latest research on microfluidic technologies. He introduced innovative new approaches that combine cell pairing, electrical cell sorting, and electrochemical microfluidic systems to precisely analyze immune cell functions and protein biomarkers. He further discussed potential applications of these technologies in disease diagnosis, immune monitoring, and clinical testing, while sharing both the current challenges and future directions of microfluidic research. Prof. Huang then introduced NTU's recent advances in developing multifunctional microfluidic platforms for personalized medicine and healthcare. By integrating multiple sensing and microfluidic technologies, these platforms significantly improve analytical efficiency and accuracy, demonstrating NTU's research strengths in precision medicine, biomedical chips, and smart healthcare. Throughout the seminar, the two professors exchanged their research experiences and technical perspectives, learning from each other's expertise while engaging with faculty members, students, and industry representatives in discussions on potential future collaborations.

Following the seminar, Prof. Huang and Associate Professor Ya-Yu Chiang of NTU's Department of Mechanical Engineering led Prof. Voldman on a campus tour. They first visited the NTU Museum of Engineering, located at the former Mechanical Engineering Building. There Prof. Voldman learned about the department's historical inventions and engineering breakthroughs. The visit continued with tours of Associate Professor Chiang's and Prof. Huang's laboratories. Students took the opportunity to introduce their research projects and experimental work, receiving valuable feedback, suggestions, and encouragement from Prof. Voldman. During the evening networking dinner, Prof. Voldman and several NTU faculty members further exchanged views on a range of topics, including the current research ecosystem, international collaboration models, and future partnership opportunities. The event not only showcased NTU's commitment to expanding global academic collaborations but also strengthened ties with one of the world's leading universities, creating new opportunities for international cooperation in biomedical technology and smart healthcare innovation.



Prof. Joel Voldman visiting NTU's Museum of Engineering.



Professor Joel Voldman interacting with graduate students while visiting Professor Nien-Tsu Huang's laboratory.

| GLOBAL OUTLOOK

NTU Law Faculty Participate in the 2026 Asian Corporate Law Forum

Share:     



| Academic attendees of the 3rd Asian Corporate Law Forum (ACLF) at the Monash University Malaysia campus.

Prof. Andrew Jen-Guang Lin and Associate Professor Christopher Chao-hung Chen participated in the 3rd Asian Corporate Law Forum (ACLF), April 14–15, 2026, hosted by the Monash University Business School and Monash University Law School in Kuala Lumpur, Malaysia.

During ACLF 2026, Prof. Chen presented his working paper (co-authored with Dr. Li-Wen Lin of the University of British Columbia) on "Directors as Geopolitical Risk in Corporate Governance." Drawing on recent developments involving Intel CEO Lip-Bu Tan and TikTok as examples, their paper examines how foreign directors may become a source of geopolitical risk amid rising geopolitical tensions and the associated legal risks. The paper argues that companies should conduct more comprehensive due diligence to better understand directors' backgrounds and the potential geopolitical implications of their appointments.



| Scholars from participating universities assemble for group photo at the 3rd Asian Corporate Law Forum (ACLF).

Additionally, both Professors Lin and Chen participated in panel discussions. Prof. Lin served as a panelist alongside leading scholars from Australia, South Korea, Japan, and Hong Kong in a session titled, "Corporations and Social Impact: An International Perspective." Prof. Chen also joined a panel on "Corporate Governance in an Era of Populism and Nationalism." Together, Professors Lin and Chen shared Taiwan's perspective on the development of corporate law and corporate governance in Asia.

The ACLF, co-sponsored by the European Corporate Governance Institute, was established in 2023 as a network for scholars specialized in corporate law, capital market regulation, and corporate governance across Asia. Its annual conference provides an significant platform for scholars to exchange ideas on shared challenges, advance the development of Asian corporate law scholarship, and foster research collaborations throughout the region. The NTU College of Law is a founding member of the ACLF, and its faculty have actively participated in the forum since its inception in 2023.

| GLOBAL OUTLOOK

NTU Hosts 2026 UNIQ Resonance Workshop

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National Taiwan University (NTU) hosted the 2026 UNIQ Resonance Workshop, June 16 -18, to explore how to "Transition to Better Synergies for Stronger Success." The workshop convened faculty members and researchers from the trilateral partnership of NTU, the University of Illinois Urbana-Champaign (UIUC), and Kyushu University (KU), to strengthen international collaboration and foster high-impact, multi-institutional research.

The event further welcomed participants from several member institutions of the University Academic Alliance in Taiwan (UAAT), including National Central University, National Sun Yat-sen University, and Taipei Medical University, broadening opportunities for interdisciplinary and inter-institutional collaboration. Over 45 faculty and staff members participated in the three-day workshop. Participants represented a wide range of academic fields, including Electrical Engineering and Computer Science (EECS), Medicine, Law, Liberal Arts, Science, and Library and Information Science (LIS), creating a dynamic, multifarious environment for cross-disciplinary exchanges and innovation.



Workshop participants assemble in front of the NTU MK Innovation Hall.

Over the course of the workshop, participants explored ways to build on existing research achievements while developing new international collaborations. The program featured institutional overviews, presentations by recipients of the 2025 Seed Funding Program, and discussions on lessons learned to support future applicants. These sessions also provided opportunities for faculty members to identify potential collaborators and establish multi-university research teams.

Participants were also introduced to strategic funding and innovation resources, including the University Academic Alliance in Taiwan (UAAT) and SPARK Taiwan, which support large-scale collaborative research and facilitate the translation of research outcomes into real-world applications.

Artificial intelligence (AI) was another key focus of the workshop. Prof. Hsin-Mu Tsai of NTU shared strategies for integrating AI into higher education and academic research, while a trilateral session on Library and Information Science (LIS) examined issues related to data governance and the growing challenges posed by deepfakes. The interdisciplinary Hamlet Machineman project further demonstrated the convergence of technology and the arts by its intriguing integration of industrial robotics into theatrical performance.

The workshop also spotlighted the achievements of the 2025 collaborative projects, which supported 15 student mobility exchanges and 12 trilateral research initiatives. Featured projects included AI-assisted medical devices for neurosurgery, soft robotic technologies for rehabilitation, and AI-driven frameworks for inclusive policymaking, showcasing the tangible impact of trilateral collaboration in addressing global challenges.



Prof. Hsin-Mu Tsai of NTU sharing strategies for the integration AI into higher education and academic research.



Workshop participants engaging in lively group discussion.

I ACHIEVEMENTS

NTU Achieves First Direct Measurement of Carrier Transfer in 2D Transistors

Share:     

An innovative platform technology recently developed at NTU has set a new benchmark for contact metrology in next-generation semiconductor devices.

A research team at National Taiwan University (NTU), led by Distinguished Professor Ya-Ping Chiu of the Department of Physics, has innovated an operando cross-sectional scanning tunneling microscopy and spectroscopy platform (operando XSTM/STS). This entirely new metrology capability enables the direct measurement of carrier injection at metal/semiconductor contact edges while a transistor is under actual operating conditions. Their study, "Directly probing the carrier transfer length in 2D-material transistors," was published in *Nature* on July 1, 2026.

As semiconductor devices scale toward and beyond the 1 nm technology node, two-dimensional (2D) semiconductors have emerged as promising candidates for developing future logic technologies. Continued transistor scaling depends not only on shortening the channel length but also on shrinking the metal contact region. The carrier transfer length—the effective spatial extent over which carriers are injected from a metal electrode into the semiconductor channel—governs contact resistance and thus is a key indicator of scaling viability. Until now, this parameter has been accessible only through indirect methods based on theoretical models, which break down in 2D semiconductor systems.

Building on nearly two decades of in-house cross-sectional STM expertise, the NTU team integrated an *in situ* biasing and gate-control system into an ultrahigh-vacuum platform, enabling synchronized spectroscopy while the transistor operates under source-drain and gate voltages. The team successfully cleaved Bi-contacted monolayer MoS₂ transistors under ultrahigh-vacuum conditions, exposing a clean cross section of the metal contact and semiconductor channel. By mapping shifts in the MoS₂ conduction-band edge along the contact interface, the researchers directly measured a carrier transfer length of approximately 2.0 nm—more than four times shorter than the 9.25 nm value obtained using the conventional transfer-length method (TLM) on the same devices. The method was also validated for HfO₂-gated MoS₂, *p*-type PdSb/WSe₂, and silicon-on-insulator (SOI) devices, demonstrating its applicability across both 2D and conventional semiconductor platforms.



Operando cross-sectional scanning tunneling microscopy (operando XSTM), developed at NTU, enables the first direct measurement of carrier transfer length at the contact edge of operating 2D semiconductor transistors with atomic-scale spatial resolution. *Nature* 655, 350–356 (2026).



Click or Scan the QR code to access the full article in *Nature*.

These results establish operando XSTM/STS as the first experimental method capable of directly measuring carrier transfer length in operating transistors with sub-nanometer spatial resolution, closing a critical gap in semiconductor contact metrology. The platform will provide the semiconductor research community with a direct, model-free tool for benchmarking and optimizing contact engineering across diverse material systems. It is poised to become a valuable resource for guiding contact design and accelerating process integration as the industry advances toward angstrom-scale devices.

The study was a collaboration between the research team at National Taiwan University and research groups at the National University of Singapore and National Taiwan Normal University.

ACHIEVEMENTS

Uncovering a Novel Neuro-Immune Mechanism in Lung Cancer and Paving the Way for Nerve-Targeted Cancer Therapy

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The research team presenting another breakthrough discovery in the research of treating lung cancer.

Lung cancer remains the leading cause of cancer-related deaths worldwide, with lung adenocarcinoma being the most common subtype. Immunotherapy has brought new hope to cancer patients in recent years; however, only a minor proportion of lung cancer patients have benefited from these treatments. Boosting the effectiveness of immunotherapy remains a major challenge in cancer research.

The Lung Cancer Team at National Taiwan University Hospital (NTUH) has joined forces with an international team led by Dr. Leanne Li, Group Leader at the Francis Crick Institute, to analyze a previously unknown mechanism by which lung cancer exploits the nervous system to weaken the body's immune defenses. This study was recently published in *Cell*.

The study found that lung adenocarcinoma recruits nociceptive sensory neurons—specialized sensory nerves responsible for detecting pain and harmful stimuli.



Prof. Chen remarking, "Future cancer treatment should focus not only on 'cutting off the water supply' by targeting blood vessels that nourish tumors, but on 'cutting off the electricity supply' by blocking nerve signals that promote cancer growth. Simultaneously targeting blood vessels, nerves, and the immune system may lead to more effective cancer treatment strategies."

Once activated, these neurons release signaling molecules that disrupt lung cancer immunity. This study examined the hitherto under-explored role of nerve signals in lung cancer immune evasion.

Further investigation revealed that these released nerve signals prevent the formation of key immune defense hubs around tumors. These defensive structures serve as gathering points where immune cells assemble and coordinate attacks against cancer cells, and thus are essential for controlling tumor growth.

To illustrate this concept, while normal lymph nodes can be thought of as police stations within a city, these newly formed immune hubs around tumors resemble neighborhood patrol teams that monitor suspicious activity, call for support, and help to maintain public safety. The study found that nerves surrounding lung tumors act like a communication system that continuously sends misleading signals, disrupting the formation and operation of these patrol teams. Consequently, immune cells fail to gather effectively, opening the way for uncontrolled cancer growth.

The team further validated their findings using mouse models of lung cancer. Again, blocking these nerve signals significantly enhanced the immune system's ability to attack lung cancer cells and suppress tumor growth. Besides causing genetic mutations, cigarette smoke extracts activate nociceptive neurons which further weaken the body's defenses against cancer cells. These findings suggest that, in addition to its known mutagenic role, smoking can also promote lung cancer development through a neuro-immune mechanism.

Prof. Jin-Shing Chen, Chair of the Department of Surgery at NTUH, explains: "Our study shows that cigarette smoke does more than just damage the DNA of cells. It also directly stimulates nociceptive neurons, which in turn interfere with the immune system's ability to establish effective anti-cancer defenses, making it easier for cancer cells to grow and progress. This research reveals a completely new mechanism underlying lung adenocarcinoma development."

Importantly, the study also disclosed that certain medications already approved for migraine treatment may be combined with cancer immunotherapy to further improve treatment outcomes. Animal studies have demonstrated that this combination strategy not only strengthens anti-tumor immune responses but also prolongs survival, offering a promising new avenue for lung cancer therapy.

Dr. Leanne Li affirms, "This study identified molecular mechanisms underlying the interactions among the nervous system, the immune system, and lung cancer. Our findings reveal that nerve signals are not merely messengers of pain but active participants in lung cancer progression, and could be harnessed to improve immunotherapy response. These discoveries expand the frontier of Cancer Neuroscience and provide new therapeutic targets and directions for lung cancer treatment."

Looking ahead, NTUH will continue to promote innovation in healthcare and precision medicine, accelerating the translation of groundbreaking research into clinical practice to bring new hope to patients with lung cancer worldwide.



Dr. Leanne Li, the group Leader at the Francis Crick Institute and also the senior author of the study.

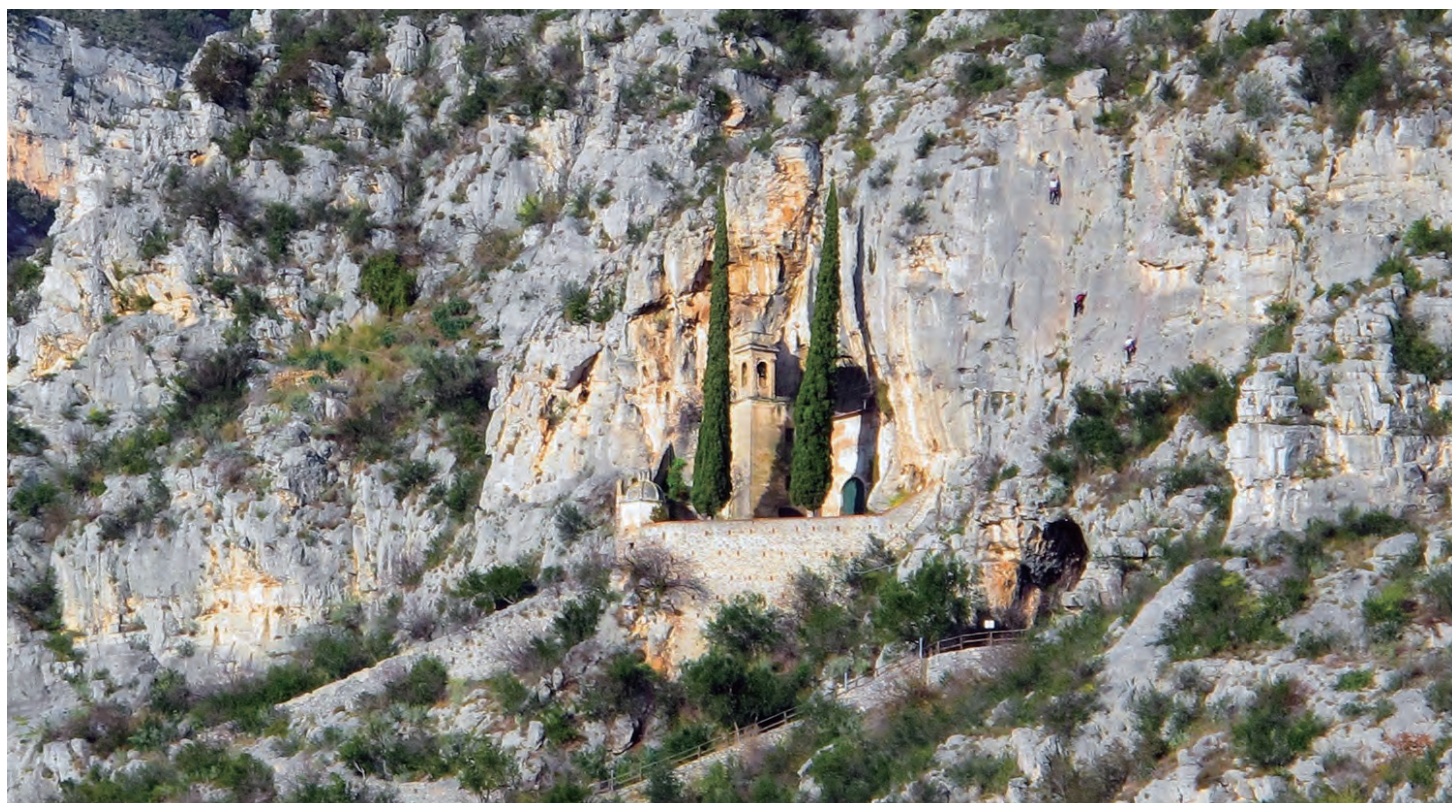


Click or scan the QR code to read the full article in *Cell*.

I ACHIEVEMENTS

Unveiling the Mystery of a Dramatic Warming Cycle and the Most Rapid Sea-Level Rise Event of the Past Million Years

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| Distant prospect of Bäsura Cave in Toirano, Savona, in northwestern Italy.

Over the past million years, Earth's climate has undergone regular 100,000-year glacial cycles. After approximately 90,000 years of gradual cooling, each cycle was followed by a relatively rapid phase of deglaciation and warming, known as a glacial termination ("Termination"). Around 340,000 years ago, during the fourth glacial termination (Termination IV, T-IV), Earth experienced an intense rapid warming event, driving the fastest sea-level rise over the past million years. Geological evidence suggests that sea level may have risen as rapidly as 5 m per century, far exceeding the contemporary global average rate of 3–4 mm per year driven by relentless global warming. However, the mechanism behind this extraordinary event remained one of the major unresolved puzzles in Earth science.

Prof. Chuan-Chou Shen of the Department of Geosciences led an international team that conducted drilling speleothem cores in Bàsura Cave located in Toirano, Savona, northwestern Italy. Using uranium-thorium absolute dating techniques, the team established a high-resolved hydroclimate record for the European Westerlies. This chronological framework was then transferred to North Atlantic marine sediment records to reconstruct the precise sequence of climate transitions, ocean circulation changes, regional hydroclimate variability, and rapid sea-level rise during T-IV. The study revealed that the Atlantic Meridional Overturning Circulation (AMOC) remained weakened for 13,000 years during T-IV, the longest duration among the last five glacial terminations, inducing large amounts of heat to accumulate in the deep ocean. Once circulation resumed, ocean heat stored during the prolonged slowdown was rapidly redistributed to high-latitude regions, yielding accelerated iceshelf melting, enhanced ice-sheet instability, and rapid sea-level rise, ultimately triggering this exceptional warming event ⁽¹⁾.

The international team further suggests that if heat accumulated within the ocean interior were to be re-transported under certain conditions to the bases of ice shelves or grounding zones of ice sheets, future sea-level rise would not proceed gradually as a slow and linear process, but instead likely would exhibit much more rapid, potentially threshold-like changes. These findings improve our understanding of possible future sea-level-rise risks and provide important paleoclimate evidence for assessing coastal hazards and developing climate adaptation strategies for coastal cities and low-lying regions.

(1): Hu, H.-M.*, Marino G.*, Goñi M. F. S., Rohling E., Rodrigues T., Pérez-Mejías C., Ren Q., Jiang X., Michel V., Valensi P., Starnini E., Zunino M., Salonen J. S., Hsieh C.-J., Tan L., Chaigneau B., Chevalier M., and Shen C.-C.* (2026) Protracted ocean circulation slowdown drove exceptional ice-sheet melting during ice age termination IV. *Nature Communications* 17, 5675.



Prof. Chuan-Chou Shen of the Department of Geosciences, operating a core drill rig to extract limestone core samples in Bàsura Cave, in northwestern Italy.



Limestone core samples collected at Bàsura Cave. The black-and-white alternating bands represent a scale measured in centimeters. Researchers follow the scale in extracting small subsamples ranging from 0.1 to 100 milligrams for carbon and oxygen isotope analysis, trace element determination, and uranium-thorium dating.



Click or scan the QR code to read the full article in *Nature Communications*.

ACHIEVEMENTS

Sperm RNA Links Paternal Obesity to Offspring's Metabolism

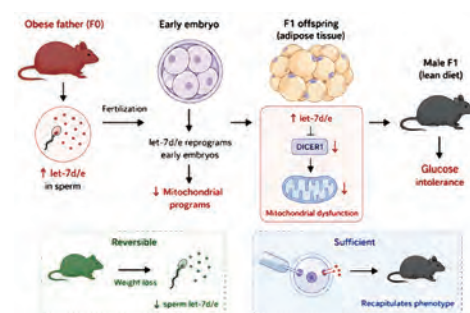
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| NTU research team led by Assistant Professor Chien Huang.

A father's weight before conception can subtly influence his children's metabolic health, according to a new study led by researchers at National Taiwan University (NTU) and the University of Southern Denmark (SDU). The study report, published in *Nature Communications*, identifies a tiny sperm-borne microRNA, *let-7*, as the molecular messenger that carries this signal from father to child.

The team, co-led by Assistant Professor Chien Huang (Department of Animal Science and Technology, NTU) and Prof. Jan-Wilhelm Kornfeld (SDU), fed male mice a high-fat diet before allowing a subgroup to lose weight on a low-fat diet. Both the obese fathers and their male offspring developed poor glucose tolerance and impaired mitochondrial gene activity in white adipose tissue, even though the offspring themselves had never consumed a high-fat diet. Remarkably, when the fathers lost weight, most of these metabolic changes were reversed in both generations.



Graphical abstract. Obesity in male mice (F0) increases levels of the microRNAs *let-7d/e* in sperm. During fertilization, *let-7* reprograms early embryonic development by suppressing mitochondrial gene programs. In the adipose tissue of F1 offspring, elevated *let-7* silences *DICER1*, leading to mitochondrial dysfunction and glucose intolerance in male offspring despite a lean diet. The effect is reversible (weight loss in F0 lowers sperm *let-7* levels) and sufficient (microinjection of *let-7* into normal zygotes reproduces the phenotype).

Digging deeper into the underlying mechanism, the researchers found elevated levels of the microRNAs *let-7d* and *let-7e* in the adipose tissue and sperm of obese male mice. Injecting these microRNAs into normal one-cell embryos reproduced the same metabolic abnormalities in the resulting offspring. Single-cell RNA sequencing of early embryos further revealed that *let-7* suppresses mitochondrial genes from the earliest stages of development. In adipose tissue, *let-7* acts by silencing DICER1, an enzyme responsible for processing other microRNAs, thereby impairing mitochondrial function and cellular energy production.



Click or scan the QR code
to read the full article in
Nature Communications.

To determine whether the same mechanism operates in humans, the team analyzed sperm samples from 15 men with obesity who were enrolled in a lifestyle-based weight-loss program at Zealand University Hospital in Denmark. Levels of the sperm-borne microRNAs *HSA-LET-7D* and *HSA-LET-7E* declined in parallel with body weight, suggesting that the mechanism is conserved between mice and humans and, importantly, is reversible.

"A father's metabolic health is not just his own concern. It is written into his sperm and delivered to the next generation—yet it is also reversible," asserted Assistant Professor Chien Huang. "Losing weight before conception may give the next generation a healthier start."

<https://ntubeats.ntu.edu.tw/enews/016>

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TEACHING & LEARNING

NTU VR Lab Training Module Selected for SIGGRAPH 2026

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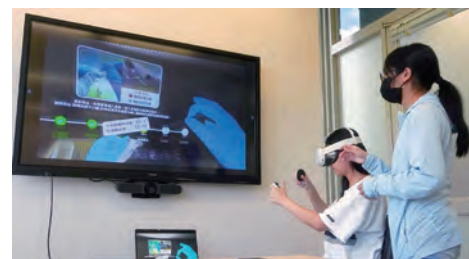
As Extended Reality (XR) and Artificial Intelligence (AI) become increasingly integrated into higher education, National Taiwan University's Digital Learning Center continues to advance digital teaching innovation by supporting faculty in developing Virtual Reality (VR) training modules that enhance student learning through immersive experiences. Among its recent interdisciplinary collaborations, a VR training module for laboratory mouse blood collection, jointly developed with Professor Hui-Wen Chen of the Department of Veterinary Medicine and the Laboratory Animal Center, has emerged as a flagship example of XR-enabled education. Combining gamification with the 3R Principles (Replacement, Reduction, and Refinement), the module promotes both effective learning and ethical animal research.



The elements of a fully immersive VR training module for laboratory mouse blood collection, jointly developed by the NTU Digital Learning Center and Professor Hui-Wen Chen of the Department of Veterinary Medicine.

The training module places students in an immersive VR simulation, where they practice conducting the blood collection procedure after mastering the necessary foundational knowledge. Students can repeat the procedure as many times as needed to build confidence and proficiency before working with live animals. The system also provides real-time assessment and feedback on key techniques—including animal restraint, blood collection spot, and blood collection volume—offering immediate guidance and corrective suggestions. By enabling repeated practice in a safe virtual environment, the module strengthens the students' practical skills while reducing their risk of errors during actual laboratory procedures.

To share this innovative educational approach with the international community, the Digital Learning Center and Professor Chen's team submitted the project to SIGGRAPH 2026. The VR training module was selected for the conference's Immersive Pavilion and showcased at the Los Angeles Convention Center, where it attracted considerable interest among educators, researchers, and attendees from around the world. The recognition highlights the growing potential of XR technologies in higher education, demonstrating how immersive learning can bridge the gap between theory and practice while opening new possibilities for the future of teaching and professional training



Students safely practicing the mouse blood collection procedure in an immersive VR environment; the goal is to achieve proficiency.



The VR training module for laboratory mouse blood collection was selected for the SIGGRAPH 2026 Immersive Pavilion and exhibited at the Los Angeles Convention Center.



Staff members from the NTU Digital Learning Center introducing the VR training module and demonstrate its operation to visitors.



Visitors explore the exhibits at SIGGRAPH 2026.

TEACHING & LEARNING

NTU Advances 2D Semiconductor Technologies at IEEE VLSI 2026

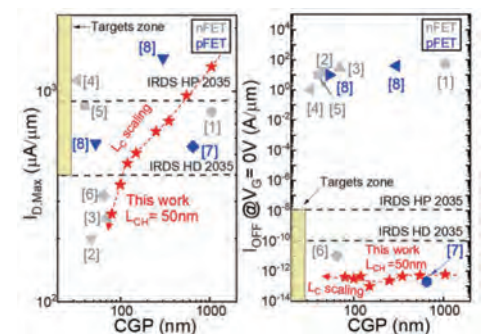
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Presentation by the TSMC research team at the 2026 IEEE Symposium on VLSI Technology and Circuits. The research was carried out through close collaboration among National Taiwan University (NTU), The University of Tokyo (UTokyo), and the National University of Singapore (NUS).

The IEEE Symposium on VLSI Technology and Circuits (IEEE VLSI) is one of the world's premier conferences in semiconductor research, where leading companies and research institutes present their latest technological innovations. This year, major semiconductor manufacturers, including TSMC, Intel, and Samsung, showcased their latest technology roadmaps. Among them, TSMC introduced its A16 technology, featuring Super Power Rail (SPR) backside power delivery to further improve power efficiency and performance. As conventional silicon devices approach their physical scaling limits, two-dimensional (2D) semiconductors have attracted increasing attention as promising candidates for next-generation electronics because of their atomically thin structure and excellent electrical properties.

Researchers from Professor Chih-I Wu's Laboratory at National Taiwan University (NTU) participated in three collaborative studies presented at IEEE VLSI 2026. While significant progress has been made in n-type 2D transistors,

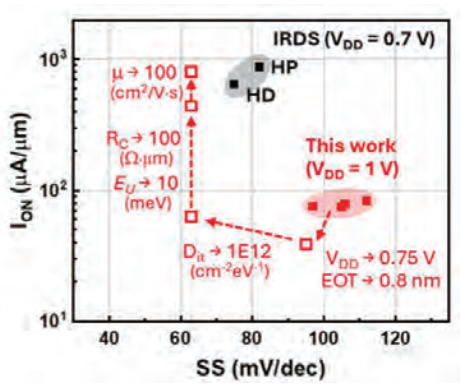


Benchmark of (a) maximum on-current ($I_{D,Max}$) and (b) off-current (I_{OFF} at $V_G = 0V$) versus contact-gate pitch ($LC + LCH$) for reported 2D nFETs (gray symbols) and pFETs (blue symbols), demonstrating the performance of the team's device.

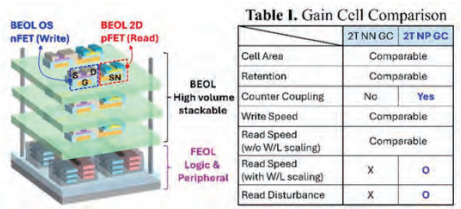
the development of high-performance p-type devices remains a key challenge for future CMOS technology. In collaboration with National Yang Ming Chiao Tung University (NYCU), The University of Tokyo (UTokyo), and the National Institutes of Applied Research (NIAR), the research team demonstrated record-setting monolayer WSe₂ p-channel transistors in the multidisciplinary field of advanced materials, surface, and contact engineering. In addition, a joint study with TSMC investigated the influence of interface defects and contact resistance on transistor performance, providing important design guidelines for future low-power integrated circuits.

Beyond transistor development, the collaboration also demonstrated the first back-end-of-line (BEOL)-compatible two-transistor gain-cell (2T GC) memory, integrating a 2D WSe₂ p-type transistor with an oxide-semiconductor n-type transistor. The proposed memory design achieved excellent read performance and scalability, confirming the potential of 2D semiconductors for future high-density memory and AI computing applications. Together, these three studies highlight the broad potential of 2D semiconductor technology, spanning fundamental device engineering, transistor optimization, and advanced memory applications.

These achievements were made possible through close collaboration among research labs at NTU, TSMC, NYCU, UTokyo, and NIAR (including TSRI and NCIR). By combining expertise in materials, device fabrication, simulation, and circuit design, the partnership continues to advance next-generation semiconductor technologies. The research team also acknowledges the long-term support of the TSMC–NTU Joint Research Center, whose collaboration has played a vital role in promoting innovative semiconductor research and strengthening Taiwan's leadership in advanced semiconductor technologies.



Projected ON-current at VDD = 0.75 V for monolayer WSe₂ devices with improvements in key device metrics. The current devices achieve an ON-current of approximately 80 $\mu\text{A}/\mu\text{m}$ at VDD = 1 V. Simulations project that the ON-current could reach 800 $\mu\text{A}/\mu\text{m}$ at VDD = 0.75 V through optimized equivalent oxide thickness (EOT), interface trap density (Dit), Urbach energy (EU), contact resistance (RC), and hole mobility.



Schematic illustration and performance comparison of the monolithic three-dimensional integration of the 2T NP Gain-Cell (GC) memory.

TEACHING & LEARNING

Whispers of Bone: A New Chapter in Veterinary Education

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Group photo at the unveiling of the Whispers of Bone gallery.

The School of Veterinary Medicine held the Veterinary Education Development Donation Appreciation Ceremony and the Whispers of Bone: Veterinary Anatomy Gallery Unveiling Ceremony on June 11. The event celebrated the generous support of the Chen-Yung Foundation, which donated a three-dimensional anatomy teaching platform and a life-sized pregnant mare simulator. Additional matching support from the College of Bioresources and Agriculture, together with generous contributions from alumni, which made possible the renovation of the entrance hall of the School's First Building and the creation of the Whisper of Bone Gallery.

The gallery was unveiled by Professor Yu-Pin Lin, Dean of the College of Bioresources and Agriculture; Mr. Charles C. Y. Chen, Chairman of the Chen-Yung Foundation; and other distinguished guests. Professor Bi-Ling Su, Dean of



Distinguished guests, faculty members, and students posing for a commemorative group photo during the unveiling ceremony.

the School of Veterinary Medicine, expressed the School's heartfelt appreciation. Faculty members, alumni, and guests gathered together to celebrate a renewed educational space that reflects the School's enduring commitment to educational innovation, clinical excellence, and the cultivation of future veterinary professionals.

The newly installed 3D anatomy teaching platform enables students to explore animal organs, blood vessels, nerves, and tissues through interactive three-dimensional visualization, strengthening spatial understanding and enriching anatomy education. Complementing this resource, the life-sized pregnant mare simulator provides a realistic and repeatable environment for practicing large-animal obstetric procedures and clinical skills, allowing students to build their confidence and competence before entering real clinical settings.

The Whispers of Bone gallery has transformed the former entrance hall into an intriguing educational space where skeletal specimens and teaching models are thoughtfully displayed through lighting, exhibition design, and interpretation. Once valued primarily as teaching materials, these collections now also stand as enduring witnesses to the history of veterinary education and the transmission of professional knowledge across generations.

By integrating digital technology, simulation-based learning, and anatomical collections, the project represents more than the technical enhancement of teaching facilities. It embodies the School's commitment to academic excellence, respect for life, animal welfare, and the professional values that define veterinary medicine. With the collective support of the Foundation, the College, and its alumni, NTU continues to advance veterinary education through innovation, compassion, and a forward-looking vision.



Mr. Charles C. Y. Chen, Chairman of the Chen-Yung Foundation, carefully experiences the life-sized pony simulator.

| TEACHING & LEARNING

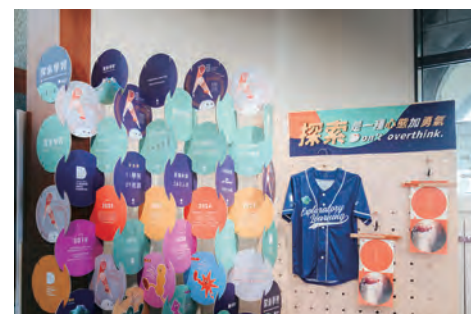
Exploratory Learning at NTU Opens New Pathways Beyond the Classroom

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What if students could pause their academic path—not by taking a leave of absence, but by stepping into the world to discover what truly inspires them? National Taiwan University's Exploratory Learning Program offers exactly that opportunity. The program allows students to take a "gap semester" or "gap year" while maintaining their student status, participating for up to four semesters. By paying the tuition equivalent of a one-credit course, students can earn two academic credits through experiential learning. Since its launch five years ago, the program has supported 262 student participants, with 53 students joining in the Spring 2026 semester.

To celebrate its fifth anniversary, NTU's College of Design and Innovation hosted an exhibition and sharing session themed, "A Space to Courageously Become



Exhibition celebrating the fifth anniversary of the Exploratory Learning Program.

Yourself." The event showcased the students' explorations in entrepreneurship, social innovation, travel, fieldwork, artistic creation, and volunteer service, underscoring that true learning can take place far beyond the classroom. Among this year's participants, Yu-Hui Su, a student in the Department of Bio-Industry Communication and Development, was selected as the only Taiwanese member of a Drum Corps International (DCI) World Class ensemble, while Wei-Jen Shim, from the Department of Psychology, explored the dynamics of intimate relationships through the art of magic performance.

For the first time, the program's annual sharing session was held off campus at CLASSROOM, a creative venue in Taipei's Gongguan district, symbolizing each student's exploration as the premiere of a new chapter in life. Former NTU President Chung-Ming Kuan, Distinguished Professor of the Department of Finance, encouraged students to embrace uncertainty, remarking, "Exploration is about daring to be a little wilder." Vice President Shih-Torng Ding added that NTU hopes students will discover their own motivation and have the courage to step outside the classroom into businesses, NGOs, and international communities. Through faculty mentorship, peer learning, and integrated support resources, the Exploratory Learning Program continues to empower students to take their first steps into the unknown—and to become the people they aspire to be.



Chuang En-Chi, a student in the Department of Political Science, sharing how her service as a teaching assistant in Exploratory Learning and support work for fellow students became one of the most memorable experiences of her student life at NTU.



Student display of personal artifacts from their Exploratory Learning journeys and the stories behind their experiences.



Yu-Hui Su, a student in NTU's Department of Bio-Industry Communication and Development, selected as a member of a Drum Corps International (DCI) World Class ensemble.



For more information, please visit the Exploratory Learning website.

| TEACHING & LEARNING

University Interdisciplinary Bachelor's Program Marks Record Graduation Year

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| Group photo of the celebratory graduates, faculty members, and guests at the 2026 University Interdisciplinary Bachelor's Program Graduation Celebration and Student Showcase.

National Taiwan University's University Interdisciplinary Bachelor's Program (UIBP) celebrated a milestone at the end of academic year 2025-26: 16 students graduated, the largest cohort since the program was launched four years ago. Immediately after the University's Commencement Ceremony, at which President Wen-Chang Chen personally conferred diplomas upon the graduates, UIBP held its own Graduation Celebration and Student Showcase on June 15, 2026.

The celebration was graced by many of the program's key advocates, including Former NTU President Chung-Ming Kuan, Vice President Shih-Torng Ding, Dean of Academic Affairs Hung-Jen Wang, and Associate Vice President for Academic Affairs and Director of the Center for General Education Lin-Chi Chen. In his remarks, Professor Kuan recalled that the University created UIBP to encourage students to break free from traditional disciplinary silos, explore their interests and potential, and become innovative thinkers willing to challenge convention. Vice President Ding commended the program's accomplishments and noted that UIBP was recognized with the Times Higher Education Awards Asia 2025.



| Graduates of the University Interdisciplinary Bachelor's Program posing with faculty members after the graduation celebration.

The University Interdisciplinary Bachelor's Program is NTU's innovative double-major program, designed to give students the flexibility to create their own interdisciplinary academic pathways based on their interests and career goals. This year's graduates developed diverse fields of study, including Biomedical Science and Translational Medicine, Animation Design and Marketing Communication, and Smart Cities and Sustainable Development, demonstrating remarkable creativity and the rich potential of interdisciplinary learning. Notably, this year also marked the first time that eight students graduated solely with a University Interdisciplinary Bachelor's degree, reflecting the growing recognition of and confidence in the program among students and faculty. During the student showcase, graduates presented their individualized learning roadmaps, research projects, and creative works, highlighting both the breadth and depth of their interdisciplinary education.

Through its flexible curriculum, individualized academic planning, and emphasis on interdisciplinary integration, UIBP continues to equip students with the knowledge, skills, and perspectives needed to address future challenges. The program further embodies NTU's vision for Future NTU Initiatives, aimed to foster a new generation of graduates prepared to thrive in an increasingly interconnected world.



A graduate presenting his interdisciplinary academic journey and project outcomes at the Student Showcase.



Graduates sharing their interdisciplinary learning experiences, research projects, and creative works at the Student Showcase.



For more information, please visit the University Interdisciplinary Bachelor's Program website.

I PEOPLE

GIS Taiwan 2026: Building Connections, Shaping the Future

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GIS Taiwan 2026 (Global Initiatives Symposium in Taiwan) was held on campus, June 29 - July 3. Arranged by the Office of Student Affairs at National Taiwan University (NTU) and organized by a student-led team, this annual forum convenes leaders from academia, industry, and government to interact with students from across the globe, offering a rich interdisciplinary and intergenerational platform for dialogue, collaboration, and the exchange of ideas.

Cued by this year's theme, "Bond & Beyond," participants were encouraged to build meaningful connections while expanding and enriching their perspectives on global challenges. The opening ceremony featured remarks by Taiwan's Vice President Bi-khim Hsiao, followed by keynote sessions with distinguished speakers from Taiwan and abroad, including Rusha Vonk, Adjunct Research Fellow at the



Participants at the World Café and small-group discussion sessions.



Panel discussants exploring the themes of Global Regionalization and Emotional Economy.

Vrije Universiteit Brussel, and Lih Tian Chia, Associate Professor at the Singapore Management University Yong Pung How School of Law. Connecting with the student delegates, they explored two featured themes—Global Regionalization and Emotional Economy—through interdisciplinary and intergenerational discussions.

The five-day program also included Leaders' Dialogues conducted by industry experts, a World Café that brought together ambassadors and international participants for cross-cultural exchanges, local immersion activities developed in partnership with regional revitalization organizations, and group capstone projects in which participants collaborated to understand and address contemporary global issues. Through these diverse learning experiences, delegates learned to develop practical solutions, broadened and enriched their international perspectives, and built lasting connections, embodying the spirit of "Beyond" by promising to extend dialogue into future collaboration.

This year's forum selected 31 promising high school and university student delegates from seven countries. By encouraging young people to examine and discuss global issues then transform their ideas into positive action, GIS Taiwan continues to empower the next generation of leaders to create meaningful impact while fostering international understanding and collaboration.



Industry mentors leading interactive discussions with student delegate



Participants engaging in a Leaders' Dialogue roundtable discussion.



Participants experiencing local revitalization initiatives through a traditional tea-making activity in Pinglin.

PEOPLE

Han Dynasty Pottery Exhibition Showcases Landmark Gift from NTU Alumni

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| Donor Mr. Tashao Shih delivering remarks at the opening of the Han Dynasty Pottery Exhibition.

The NTU Museum of the Graduate Institute of Art History received a landmark gift of 149 Han Dynasty pottery objects from alumni Mr. and Mrs. Tashao Shih, formally bequeathed to the Museum's collection on December 19, 2025. The donation represents the largest single gift received since the Museum's establishment in 2023.

To celebrate the bequest, the Museum held the Han Dynasty Pottery Exhibition from March 11 to June 20, 2026 and published a scholarly exhibition catalogue documenting the collection. The exhibition formally opened on March 11, with NTU President Wen-Chang Chen, former Dean of the College of Liberal Arts Yu-Yu Cheng, Distinguished Chair Professor Ming-Liang Hsieh of the Graduate Institute of Art History, and dozens of distinguished guests in attendance. On



| Group photo of distinguished guests at the exhibition opening. (Front row, from right: Mrs. Ai-Chueh Sun; Mr. Tashao Shih; NTU President Wen-Chang Chen; and former Dean of the College of Liberal Arts Yu-Yu Cheng.)

May 19, President Chen presented NTU's Centennial Commemorative Medal to Mr. and Mrs. Shih in recognition of their extraordinary generosity and enduring contribution to the University.

The donated collection is remarkable for both its quality and diversity, encompassing the principal categories of Han Dynasty ceramics: unglazed pottery, lead-glazed pottery, high-fired ash-glazed stoneware, and pottery figurines. Many of these miniature ceramic mingqi (burial objects) offer valuable insights into Han Dynasty wooden architecture, daily life, regional customs, and funerary practices. Some vessel forms and decorative motifs also reveal the influence of artistic traditions from the West, making the collection an important resource for research into cultural exchange, material culture, and early Chinese art.

Throughout the exhibition, curator Professor Ming-Liang Hsieh trained graduate students to lead regular gallery tours, which received an enthusiastic response from visitors. During the exhibition's opening weekend, which coincided with NTU's Azalea Festival, the Museum partnered with NTU BOKUN to offer guided tours. More than 500 visitors attended in a single day, setting a new attendance record for the Museum.

The Shih family's generous donation and the subsequent exhibition exemplify the Museum's integrated mission of collection, exhibition, research, teaching, and public engagement, demonstrating the Graduate Institute of Art History's commitment to advancing scholarship while making cultural heritage accessible to the wider community.



Poster for the Exhibition of the Han Dynasty Pottery bequest from Mr. and Mrs. Tashao Shih at the NTU Museum of the Graduate Institute of Art History.



Mr. Tashao Shih, NTU President Wen-Chang Chen, and Distinguished Chair Professor Ming-Liang Hsieh (left to right) holding the collection catalogue at the Han Dynasty Pottery Exhibition.



Graduate student Fang-Ning Luo of the Graduate Institute of Art History leading a guided tour of the exhibition.



Participants in the inaugural East Asian Four-University Teaching and Innovation Program, hosted by the College of Liberal Arts, visiting the Han Dynasty Pottery Exhibition, on June 2.

I PEOPLE

Charting Your Own Path: NTU Welcomes the Class of 2026

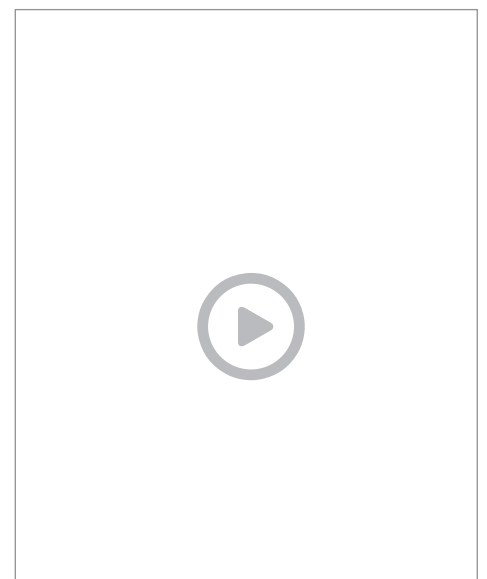
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| NTU President Wen-Chang Chen delivering his remarks at the 2026 Academic Year Opening Ceremony.

National Taiwan University (NTU) welcomed its newest students at the 2026 Academic Year Opening Ceremony on September 6. The program offered a rich blend of student performances, creative storytelling, and inspirational messages, to celebrate the start of this new chapter. Curiosity, exploration, and self-discovery were stressed to encourage the freshmen to seek new experiences and chart their own paths throughout their university journey.

The event opened with a spirited performance by the NTU Hip-Hop Dance Club, which set a lively, vibrant tone for the celebration. A student-organized team also premiered a short film, "A Day in the Life of an NTU Freshman," blending science fiction and mystery to capture the excitement and uncertainty of the freshmen when they enter the university. The film explored the most common questions



| Highlights of 2026 Academic Year Opening Ceremony.

faced by new students, while highlighting the broad palette of campus resources available to support them, encouraging freshmen to actively seek opportunities and make full use of the University's academic resources and student support services.

In his opening remarks, NTU President Wen-Chang Chen reminded the new students to consider the university as a place not only to acquire knowledge and professional expertise, but also to broaden one's perspectives and gradually discover a purpose in life. He encouraged the students to build a solid academic foundation while stepping outside the classroom to have a rich diversity of experiences. Moreover, through learning to make decisions, take responsibility, adapt to challenges, and develop communication skills and empathy, he added, students can continue to grow by accumulating a plethora of everyday experiences.

Student representative Kuan-Hsun Tu reflected on his journey after transferring to NTU's Department of Computer Science and Information Engineering. He candidly described his initial feeling of uncertainty then how he gained confidence working beside his teammates in the Student Cluster Competition (SCC), which eventually led to their winning the world championship. He encouraged the incoming students not to fear moments of uncertainty or hesitate due to inexperience, emphasizing that the unknown is often the crucible of meaningful learning. By being willing to try new things, trusting in teammates, and meeting difficulties and challenges, students can gradually discover their own direction.

As the new academic year begins, NTU hopes every freshman will grasp the courage to explore this rich environment, develop the confidence to navigate their uncertainty, and grasp the opportunities that lie ahead. Through inspiring curiosity, resilience, and continuous learning, the University encourages its newest members to create a future uniquely their own.



New students attending the 2026 Academic Year Opening Ceremony.



The NTU Wind Band performing at the opening ceremony.



The NTU Hip-Hop Dance Club giving a spirited performance to kick start the ceremony.



Student representative Kuan-Hsun Tu sharing his experiences to encourage the freshmen to boldly embrace the new challenges of university life.

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General Chemistry Experiments on the Kitchen Counter

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During the tasting session, speaker Stalu (right) invites members of the audience to experience the differences created by various cooking conditions.

"This chicken breast was cooked sous vide at 58°C. This one at 59°C. And this batch was marinated in an isotonic sports drink..."

The aroma of freshly prepared food drifted through the foyer outside the lecture hall. During the intermission, speaker Stalu invited members of the audience to sample chicken breasts prepared under different sous vide conditions, letting them experience how subtle changes in temperature and osmotic pressure transform flavor and texture.

Observing the audience's surprised reactions, he smiled and said, "Just one degree makes a huge difference, doesn't it?"

The tasting was part of "A Guide Before the First Bite," a public science lecture series organized by National Taiwan University's Center for the Advancement of Science Education (CASE). The fifth lecture, "General Chemistry Experiments on the Kitchen Counter," was presented by Stalu—a former private chef and



Stalu recalls spending nearly 10 hours making liver pâté as a laboratory during his student years. (Photo courtesy of the NTU Center for the Advancement of Science Education.)

culinary consultant who now runs the popular science-focused YouTube channel *TasteThisGOOD*—who shared many of the experiments he has conducted in the kitchen.

"I believe great food comes from science," Stalu declared. His pursuit of deliciousness, he confided, began with a jar of pink liver pâté. After combing through academic papers, he discovered that maintaining the ambient temperature at around 60°C precisely controls the denaturation of hemoglobin and myoglobin, giving the pâté its distinctive pink color. For Stalu, understanding the science behind flavor makes it possible to adapt recipes under different cooking conditions with confidence. "Cooking has never been about blindly following a recipe," he stressed.

Building on this idea, Stalu introduced the key scientific principles, such as temperature and osmotic pressure, then illustrated how they can be applied in the kitchen. He noted, for example, that the flavor compounds in spices can be either fat-soluble or water-soluble, reflecting that cooking with oil or water releases different flavors. Likewise, because capsaicin, the compound responsible for the heat in chili peppers, is fat-soluble, milk is far more effective than water at relieving spiciness.

How, then, can we discover the best flavor a food has to offer? Stalu encouraged the audience to stay curious and keep experimenting. Recalling one of his own investigations, he described comparing Iberian pork with Dongbao Black Pork from Pingtung. Using a carefully controlled experimental design and double-blind testing to eliminate preconceived expectations, he arrived at an unexpected conclusion: most participants could not reliably distinguish between the two pork varieties. The experience reinforced his belief that scientific thinking not only helps us understand food more deeply but also challenges our assumptions about ingredients.

Exploring everyday food culture as a gateway, the lecture series introduces audiences to the science embedded in daily life. According to CASE Executive Director Yi-Te Lai, enticing audiences to attend in-person events has become a new challenge in science communication in the post-pandemic era. To make science more engaging, the Center has incorporated hands-on experiences throughout the series, encouraging the participants to explore scientific concepts through all five senses.

Future lectures in the series will further examine the science behind what we eat, covering a range of topics from food safety, environmental sustainability, and kitchen science to Taiwanese rice evaluation systems, fermentation cultures, and developments in animal husbandry. By starting at the dining table, the series continues to unveil the rich scientific knowledge behind everyday food.



Chicken breasts prepared sous vide under different temperatures and osmotic pressure conditions, each producing its own distinctive texture and flavor.



CASE Executive Director Yi-Te Lai (left) and curatorial advisor Stalu (right) designed the lecture series around the core idea of "preparing a table full of delicious dishes," to create a program that is both informative and enjoyable.