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HIGHLIGHTS

Long-Term Care in Aging Society

NTU Education Center in Malaysia

Insect Museum Houses Rare Specimens

NTU Promotes Digital Learning

Special Report

NTU, UIUC Tackle Global Issues





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NTU at a Glance

Decade of Internationalization Brings Amazing Campus Transformations





Vice President for International Affairs

LUI SA SHU-YING CHANG

NTU signed its first international agreement for student exchanges in 1979 and established the Office of International Affairs in 2007. As the OIA enters its second decade, it continues its long-term effort to promote international academic exchanges. In addition to managing exchange student affairs, the Office is also responsible for building the university's international image. For example, the OIA introduced the campus brand SoNTU in order to give NTU students and alumni a stronger sense of identity with their alma mater. The OIA also enhances NTU's international visibility by participating in international education symposia and jointly submitting papers with elite universities such as Harvard University, University of Illinois at Urbana-Champaign, and the University of Tokyo.

Internationalization is like a spider's web in that it must expand its contacts to all corners of the globe in order to be effective. The OIA is active in not only Europe and North America, but in Southeast Asia under Taiwan's New Southbound Policy. Additionally OIA has developed partnerships in the Middle East including Saudi Arabia and Kuwait. Moreover, the OIA encourages the faculty members to cooperate with NTU's international partners to initiate international research projects and acquire government funding in those countries.

More and more NTU students are venturing abroad as exchange students. The University has already signed more than 500 agreements for student exchange with more than 360 universities. The number of international exchange students visiting the NTU campus has risen significantly as a result of the OIA's efforts. However, I believe the attitudes of NTU students who study overseas must change to acquire a broader experience. The exchange student experience allows students to expand their worldviews, engage in cultural exchanges, and learn foreign languages, while also providing opportunities to learn professional skills and develop competitiveness.

For students these days, the direction of their professional and academic careers is becoming increasingly important. NTU students seek opportunities for internships and hope that the university will create more learning options, and even entrepreneurial opportunities, through industry-academia cooperation. The University is continually introducing new strategies in response to the needs of students. Not only is NTU's offering of inter-departmental courses continuing to grow, its international exchanges are expanding as well.

I place a particular emphasis on quality and professionalism. The OIA stresses substantive cooperation and continues to raise the quality of the partner universities and student exchange organizations. Such cooperation provides internship opportunities at international research institutions and business enterprises. For example, NTU is Intel's sole university partner outside of the United States. Through this partnership, students of the Department of Electrical Engineering can take part in internships and even obtain scholarships. Further, the OIA offers short-term study programs designed for international students year round. Enrollment in these programs has grown from just 17 students a year in 2010 to nearly 700 students currently.

NTU's learning environment is comparable to that of any elite university. Taipei's friendly people and accessibility have drawn many international students to Taiwan. Some even stay in Taiwan to marry and have what we call NTU Babies. We must remain confident that NTU is the first choice of international students who come to Taiwan to study.



▲ The participants take time for a group photo during a visit to Metropolitan Farm.

FORMER INTERIM PRESIDENT LEADS MAJOR DELEGATION TO PARTICIPATE IN JOINT FORUM AT THE UNIVERSITY OF ILLINOIS

The University of Illinois at Urbana-Champaign (UIUC) welcomed a major NTU delegation to its campus in September to participate in the Illinois-NTU Global Issues Forum: Health in Smart Urban Environments, held at UIUC's Beckman Institute for Advanced Science and Technology on September 21 and 22.

Following decades of interaction between the two universities, NTU and UIUC formally upgraded their relationship to that of key strategic partners in 2013. The two partners established the Global Issues Forums with the goal of expanding interdisciplinary research cooperation between their faculties. The first joint forum was held at NTU in November 2014.

Then NTU Interim President, Executive Vice President for Administrative Affairs Ching-Ray Chang, who led 41 NTU administrators and faculty members in attending the recent forum at UIUC, noted that UIUC Chancellor Robert Jones' agreement to officially recognize NTU as a top-level partner and to join it in establishing a research fund would



▲ UIUC Chancellor Robert Jones presents a gift during the Chancellor's Dinner.

help NTU expand its contacts and realize its goals in the areas of higher education development and international partnerships.

Reflecting the close cooperative friendship shared between NTU and UIUC, Emeritus President of the University of Illinois System Robert Easter attended the two-day event as an active participant and even offered his insights during subtopic group discussions.

Under the main topic of Health in Smart Urban Environments, the forum addressed six interdisciplinary subtopics: Air and Water Quality, Healthy Aging in Urban Environments, Built Environment and Health, Urban Agriculture and Food Security, Bio-Medical and Cancer Research, and Mobility and Autonomous/Connected Vehicles.

A year before the forum, subtopic teams at each university began actively discussing such issues as the forum's operational model and the order of presentations in order to ensure productive subtopic group discussions and allow sufficient time to discuss promising areas for future cooperation and action plans.

Special Report



NTU faculty members present a report during the session Mobility and Autonomous

main topic, Health in Smart Urban Environments. Moreover, the broader focus of the cross-topic issues enabled the participants to discuss a wide range of viewpoints from across various disciplines and engage in brainstorming regarding new areas for research cooperation.

The history of exchanges between NTU and UIUC dates back to the era of former NTU President Shih-Liang Chien, who served from 1951 to 1970. Furthermore, the bond between our two institutions is made all the more stronger by the more than 80 full-time and part-time NTU faculty members who have earned degrees from UIUC. The partners jointly established the Global Issues Forums to expand research cooperation between the universities' faculties and solve the problems facing society.

As for the future of the NTU-UIUC partnership, NTU looks forward to bringing together instructors from both on and off campus to form an international, inter-institutional, interdisciplinary research group. The group would provide a fully-developed working space in which cooperating researchers can strive to formulate solutions to the problems facing urban environments and put academic research funds to good use. This would also give students opportunities to learn through practical experience, and thus cultivate a new generation of well-rounded professionals across different disciplines—a generation that can go on to produce new research achievements that can be put to real use in reaching society's goal of sustainable development.

▼ Participants in the Global Issues Forum squeeze together for a group photo.



▲ The scene of the Air and Water Quality session

In addition to the six subtopics, the forum also featured three cross-topic issues: (1) Innovation and Social Entrepreneurship: Leveraging "Blue Sky" Thinking for Sustainability; (2) Informatics and Digital Analytics: Putting Data to Work for Healthy, Livable Cities; and (3) Social Equity and Access: Leveraging Diverse Urban Populations for Enhanced Health, Prosperity, and Quality of Life.

The cross-topic issues allowed the participants in the subtopic discussions to relate their research interests to the forum's

NTU REPORTS ON LONG-TERM CARE IN AGING SOCIETIES AT WORLD HEALTH SUMMIT



1 The scene of a workshop during the World Health Summit.

2 Dr. Chih-Yuan Shih presents a report.

Dean of the College of Public Health Chang-Chuan Chan headed a five-person delegation of NTU representatives in participating in the World Health Summit and annual conference of the M8 Alliance in Berlin from October 12-19. NTU is one of the 25 member organizations from 18 countries that make up the M8 Alliance.

The other members of the NTU delegation were Prof. Ya-Mei Chen of the College of Public Health's Institute of Health Policy and Management; Vice Director of the Department of Internal Medicine at NTU Hospital Wang-Huei Sheng; Director of Preventive Medicine at NTU Hospital Sharlene Shao-Yi Cheng; and Director of Health Promotion and Management Center at Taipei City Hospital Chih-Yuan Shih (who is a PhD student at the Institute of Health Policy and Management).

One of the delegation's primary objectives in participating in the summit was to present together with the Kyoto University School of Public Health a research report during the summit's special session on long-term care and end-of-life care in aging societies. Dean Chan and Dean and Chairman of the Kyoto University School of Public Health Shunichi Fukuhara served as chairs for the session.

Among the speakers, NTU's Prof. Chen presented a report on joint Taiwanese-Japanese research on developing a framework for integration mechanisms for long-term care and its future development. Director Cheng and Dr. Jun Miyashita reported on advanced care planning research; Dean Fukuhara also took part in the presentation of this report. In the report, "Impact of ACP Policy on End-of-Life Care in



Taiwan," Taipei City Hospital's Director Shih shared the hospital's experience with home-based hospice care.

Due to the audience's positive reaction to the presentation, NTU has decided that the summit to be held next year will include a workshop on advanced care planning, as well as reports on long-term care and end-of-life care.

Hélène Boisjoly, Dean of the Faculty of Medicine at the University of Montreal, Canada, was named Co-Chair of the World Health Summit Scientific Committee during the summit. She announced six key areas of global health that require action: (1) Commitment to strong and reliable governance; (2) commitment to ensure global health security; (3) commitment to healthy and resilient cities; (4) commitment to responsible approaches to big data; (5) commitment to research, innovation, and development; and (6) commitment to innovation and health systems strengthening in Africa.

While in Berlin, in addition to attending the World Health Summit, the five NTU representatives also paid a visit to Representative Chih-Wei Hsieh at the Taipei Representative Office in the Federal Republic of Germany. They consider Taiwan's medical and healthcare system to be a form of soft power that the nation would do well to develop further.

By adding the nation's voice and making contributions to the global health community, Taiwan can participate in international cooperation and exchange programs, carry out substantive diplomacy, and make preparations for its participation in the World Health Assembly in 2018.

▼ A workshop on redesigning the university learning experience in progress



DESIGN THINKING COURSE REDESIGNS UNIVERSITY LEARNING EXPERIENCE FOR NEW ERA

In this era marked by rapid advances in new technologies, learning is gradually becoming digitized. Nonetheless, the students' learning experience has seemingly failed to keep pace with the speed of technological development over the last decade or more. The teaching methods and approaches to student-teacher interaction currently applied in the vast majority of courses still have not been adjusted to take advantage of the opportunities made available by the new technological advances.

Aiming to address this situation, the Digital Learning Center has teamed up with the Stanley Wang D-School@NTU to use the course "Introduction to Design Thinking" (DS5104) as a starting point for exploring ways to redesign the university learning experience so that it may keep pace with the developments of this new era.

Design thinking provides a set of innovative user-oriented methodologies that rely on observation and dialogue with users to gain insight into practical user issues and define the critical problems. This approach enables designers to focus their creative thinking on exactly the problems that users encounter.

The students in "Introduction to Design Thinking" were divided into five groups, each tasked with exploring and discussing a specific aspect of learning in order to determine which types of learning experiences best facilitate the learning process.

Even today, lecturers still tend to focus on the course content in conducting class and pay scant attention to student learning environments. Although classroom facilities are upgraded regularly, this has not necessarily resulted in discernible improvements to the learning environment.

One of the student groups in the course conducted user research, and found that the design of the learning environment must go beyond physical facilities and consider the students' psychological environment, as well. Many students avoid raising their hand in class to ask questions due to their fear of embarrassment. The deeper reasons behind this trepidation may lie in the gaze of the instructor or fellow students or even the students' own self-expectations. When constructing a learning environment, it is necessary to determine how to let students feel safe and at ease as they learn.

Through a series of interviews, another group found that good interaction is often characterized by the reduction of psychological and spatial distance. When a learner feels that "the professor is far away from me," he or she might sense a lack of intimacy and feel apprehensive about raising and answering questions in class. In terms of the spatial environment, the physical distance between learners cannot be too great if an ideal atmosphere for group discussion is to be created.

Deputy Vice President for Academic Affairs Jessy Shih-Chung Kang, who served as one of the special judges for the course's final presentations, encouraged the students to probe more deeply and identify the background causes so as to find the crucial "why" of an issue. 5

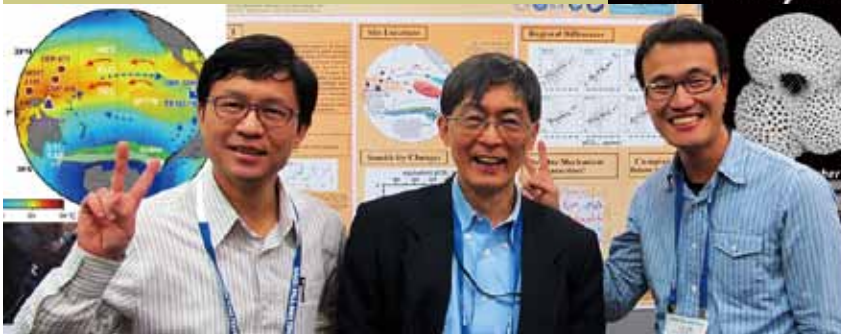
Data Records Suggest Sea Temperatures More Sensitive to Greenhouse Gases than Previously Thought



HISPEC, NTU

G. ruber

100 μm



◀ (from left to right) Prof. Chuan-Chou Shen, Prof. Kuo-Yen Wei, and Dr. Li Lo

The concentration of atmospheric CO₂ has risen from 280 parts per million (ppm) at the dawn of the industrial revolution in the eighteenth and early nineteenth centuries to more than 410 ppm in 2017, the highest level in the past three million years. How sea surface temperature responds to such high greenhouse gas levels is crucial for evaluating near-future climate predictions under the current warming trend of recent decades. The unresolved arguments regarding linear versus nonlinear climate responses hinder our understanding of climate evolution and our ability to evaluate the fidelity of global energy simulations under the current warming stress.

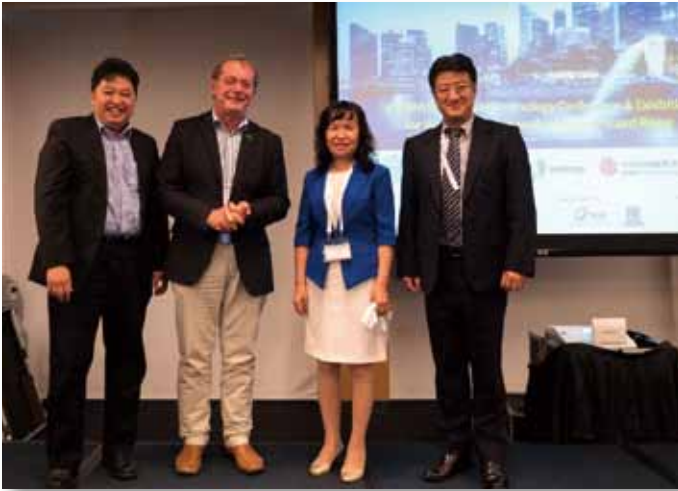
A recent study conducted by Dr. Li Lo, Prof. Chuan-Chou Shen, and Prof. Kuo-Yen Wei of the High-Precision Mass Spectrometry and Environment Change Laboratory (HISPEC) at the Department of Geosciences compiled data records that indicate the nonlinear response of Pacific Ocean sea surface temperature to greenhouse gases over the past 360,000 years, including the last four glacial-interglacial cycles. The study was published in the journal *Scientific Reports* on July 24, 2017.

In the study, the team's investigators compiled a record of tropical sea surface temperatures for the southern margin

of the Western Pacific Warm Pool. This record was derived from a depth profile of trace elements in the calcite shells of a shallow-water marine organism called planktonic foraminifera in a sedimentary core MD05-2925 (9°20.60' S, 151° 27.54' E). The core was drilled off the eastern coast of Papua, New Guinea.

Combined with five previous studies in the Western and Eastern Pacific, the team's findings showed that the sensitivity of the responses to greenhouse gas concentrations rises dramatically by a factor of two to four at atmospheric CO₂ levels of over 220 ppm. The study also indicated that the equatorial Pacific acts as a nonlinear amplifier that allows global climate to transition from deglacial to full interglacial conditions once atmospheric CO₂ levels reach this threshold level.

Their findings suggest that tropical Pacific Ocean sea surface temperatures respond not only to atmospheric radiative forcing but also to regional oceanic dynamics, topography, and climate boundary conditions. Despite the complicated combination of factors influencing sea surface temperatures, the team's new records imply that the response of ocean sea surface temperatures to greenhouse gases could be even severer than previously thought. Energy conservation and the reduction of carbon emissions are the most urgent and essential action for the sustainability of our green Earth.



Prof. Kuo-Lun Tung of the Department of Chemical Engineering was elected the next vice-chair of the International Water Association's (IWA) Membrane Technology Specialist Group during the 8th IWA Membrane Technology Conference and Exhibition for Water and Wastewater Treatment and Reuse in Singapore in September.

The IWA is the world's largest organization for water professionals. With a membership spanning 165 countries and regions, the IWA has nearly 10,000 individual members and 530 organizational members. Taiwan is a member nation of the IWA.

The IWA has established 49 specialist groups to promote discussion and research across a comprehensive range of water issues. The Membrane Technology Specialist Group has nearly 2,500 members, making it one of the three largest specialist groups in the IWA.

Prof. Tung's term as vice-chair will run from 2018 to 2021. This position will be the highest held by any Taiwanese in the Membrane Technology Specialist Group, and is seen as an indication of growing international recognition of the membrane water treatment research in Taiwan.

Prof. Tung has pursued membrane filtration research for more than two decades. He served previously as Director of the Research and Development Center for Membrane Technology at Chung Yuan University, and established the WINNER Club: Water INNOvation Education and Research Club at the NTU Department of Chemical Engineering. The WINNER Club focuses on a variety of research topics, including process development, module design, fouling monitoring, and material discovery.

The Discovery Channel once aired a special report on Prof. Tung's materials development research in the area of geomimetic inorganic composite membranes. This technological research also earned Tung the top Lite-On Innovation Award

Membrane Filtration Specialist Elected Vice-Chair of International Water Association Group

as well as an invitation to speak at TEDxTaipei, where he discussed the source of his creative inspiration.

Prof. Tung's geomimetic inorganic composite membranes technology is considered a disruptive innovation. He and his research team used the technology to develop a startup plan called "IMPRESS: Inorganic Membranes and Processes Revolution for Enabling a Sustainable Society." The plan won the favor of venture capital firms as well as the approval of the review committee of the Ministry of Science and Technology's (MOST) Industrial Value Creation Program for Academia, making it the first NTU plan to be approved by the committee. The MOST program will enable the team to set up a startup company for inorganic composite membranes.

NTU was ranked 26th in the latest global water research survey released by Lux Research, making it one of just 10 universities in Asia to be ranked among the survey's top 50 universities. Among these Asian universities, two are in Singapore, one in South Korea, three in Japan, three in China, and one, NTU, in Taiwan.

NTU's high international ranking in water research is a result of the innovative research that has been conducted by Prof. Tung and others over the last few decades.

NTU's Vice President for International Affairs Luisa Shu-Ying Chang and Dean of the College of Bioresources and Agriculture Huu-Sheng Lur join administrators and college deans of New Zealand's Lincoln University for a group photo.



ADMINISTRATORS JOIN MAJOR TAIWANESE DELEGATION TO NEW ZEALAND UNIVERSITIES

A three-member delegation of NTU administrators joined a major delegation of Taiwanese educators in venturing to New Zealand to attend the Taiwan-New Zealand Higher Education Forum 2017 from October 2-6. The event was jointly organized by the Foundation for International Cooperation in Higher Education of Taiwan (FICHET) and Universities New Zealand to provide an opportunity for high-level university administrators and scholars from various disciplines in the two countries to discuss cooperation and exchanges.

In all, 38 people from 24 universities and educational organizations participated in the event. This year's forum was expanded by the participation of 16 New Zealand science and engineering universities, which succeeded in opening up exchanges between Taiwanese universities and the science and engineering universities in New Zealand.

The members of the NTU delegation included Vice President for International Affairs Luisa Shu-Ying Chang, Director for Global Alliances Linda Chang, as well as Dean of the College of Bioresources and Agriculture Huu-Sheng Lur. During the forum,

Dean Lur delivered a presentation on the development of Taiwan's agricultural sector as well as international resources and plans.

In addition to seeking to promote joint programs between Taiwan and New Zealand as well as the commercialization of research, the forum also focused on three major issues vital to the future development of both countries: research collaboration in indigenous studies, earthquake resilience research, and agricultural research. The three topics were not only the main focus of the forum discussions and presentations, they also provided the focus of the visiting delegation's itinerary in New Zealand.

The Taiwanese delegation was made up of 20 members from 14 universities and educational organizations. Compared with the previous Taiwan-New Zealand Higher Education Forums, this year's forum stood out for drawing not only the largest number of participants but also more administrators holding high-level positions.

While in New Zealand, the delegation visited the campuses of five universities: Auckland University of Technology, University of Auckland, Lincoln University, University of Canterbury, and University of Otago. Each of the universities hosted a symposium at which scholars from the two countries enthusiastically discussed cooperation and exchanges. Moreover, the president or vice president of each of the universities personally received the Taiwanese delegation, which is a sign of the value that the New Zealand universities place on strengthening connections with their counterparts in Taiwan.

New Zealand is one of the countries targeted in the government's New Southbound Policy, and the indigenous peoples of the two countries share deep ancestral ties. NTU is grateful to FICHET for organizing and arranging the Taiwanese delegation's highly successful trip to New Zealand.



INTERNATIONAL AND LOCAL STUDENTS MIX IT UP AT WELCOME PARTY

More than 1,500 guests turned out for the Welcome Mixer for (Inter)national Students at the NTU Sports Center on the evening of September 9. The welcome party, which was organized to introduce the campus' international students from over 26 countries to their new classmates and to kick off the new academic year, was the grand finale in a series of orientation activities organized by the Office of International Affairs (OIA).

The OIA introduced the Welcome Mixer for (Inter)national Students as a new campus tradition in 2015. It is aimed to create a friendly and inviting environment for international students to forge their own social networks and better understand Taiwanese culture. The event not only provides an opportunity for international students to get to know each other, but also introduces them to local students with whom to share their NTU journey.

Drawing inspiration from both traditional and popular Taiwanese culture, the 2017 Welcome Mixer for (Inter)national Students incorporated elements of Taiwanese temples and night markets. A temple façade was

erected as the main background for the stage, while a variety of game booths were set up in the stadium to give the international students a glimpse of people's common childhood memories in Taiwan. The games included ring toss, Chinese hacky sack, bottle hooking, pinball machines, and hoop rolling.

The party kicked off with an indigenous dance performance by Tafalong Culture and Art Group. The dancers even got off stage and led the guests and students to dance to a traditional harvest festival song. Executive Vice President for Administrative Affairs Ching-Ray Chang, the then NTU Interim President, as well as former President Pan-Chyr Yang, and Vice President for International Affairs Luisa Shu-Ying Chang all took to the stage to deliver warm welcoming remarks.

The lottery draw was undoubtedly the highlight of the party. The organizers incorporated elements of Mid-Autumn Festival traditions, including tossing divination blocks to perform the draw. Many students said that it was one of the most creative lottery draws they had ever participated in. The night came to a close as the partygoers were still dancing and enjoying the game and snacks at the booths.

The OIA provides a number of events for international students throughout the year. The Welcome Mixer is likely the largest event of its kind among universities in Taiwan, and has become a major annual event for international and local students to get acquainted with each other. Drawing international students from NTU's 11 colleges, the Mixer also provides an opportunity for NTU students to broaden their global outlook and develop their cultural awareness.

GLOBETROTTING VICE PRESIDENT REPRESENTS NTU AT MAJOR MEETINGS IN MEXICO AND JAPAN



- ▲ NTU alumnus Tse-Ching Huang is also invited to address challenges of the 21st century at the APRU meeting.
- ▶ Vice President for International Affairs Luisa Shu-Ying Chang presents SoNTU gifts to the representative of the current AEARU Chair, National Seoul University.

This past September, Vice President for International Affairs Luisa Shu-Ying Chang engaged in a bit of globetrotting as she traveled to Mexico and Japan to represent NTU at two major international higher education conferences.

Vice President Chang first ventured to Monterrey, Mexico for the 15th Association of Pacific Rim Universities (APRU) Senior International Leaders' Meeting, which was held at the Monterrey Institute of Technology and Higher Education during September 20-22. Then, keeping to her tightly arranged itinerary, the vice president immediately flew to Japan to attend the 41st Board of Directors Meeting and the 23rd Annual

General Meeting of the Association of East Asian Research Universities (AEARU) at the University of Tsukuba from September 23-25.

The APRU was established in 1997 to link the leading universities of the Americas, Asia, and Australia. The APRU's annual meetings are aimed to bring together member university leaders, researchers, and policy-makers to exchange ideas and collaborate on seeking effective solutions to the challenges of the 21st century.

The Senior International Leaders' Meeting and the Annual Presidents' Meeting are the two most important events on the APRU's annual calendar. The member university presidents and senior administrators gather at the meeting to discuss the development and implementation of APRU initiatives and activities. Participants also have the opportunity to brief each other on the latest developments at their respective universities.



Spotlighting the theme "The Voice of Knowledge and Innovation—Challenges, Opportunities and Actions," this year's Senior International Leaders' Meeting drew 50 representatives from 27 universities worldwide. During the meeting, Vice President Chang took the opportunity to invite the leaders of the APRU's 43 member universities to come to Taipei next June to attend the 22nd APRU Annual Presidents' Meeting and Presidential Retreat, which will be held during the year of NTU's 90th anniversary celebration.

While in Mexico, the meeting participants felt the warmth and hospitality of their hosts at the Monterrey Institute of Technology and Higher Education. The institute is one of the largest private institutions of higher learning in Latin America, and is particularly strong in the areas of corporate connectivity and innovation.

Over the past 20 years, the APRU has actively kept pace with global trends. Besides encouraging contacts among top universities around the Pacific Ocean, the association plans to develop corporate connections and establish substantive industry-academia collaborations.



International Corner



NTU is a devoted member of the Association of East Asian Research Universities and has remained actively engaged in the association's decision-making process.

The university administrators worked hard formulating action plans for multiple initiatives during the two-and-a-half-day meeting. NTU continues to support new APRU projects, such as the Sustainable Cities and Landscapes Hub, which was co-founded by the University of Oregon. NTU also brings together professors from various fields to engage in collaborative projects with new partners, such as Asia-Pacific Economic Cooperation (APEC) and the United Nations.

Towards the end of the meeting, Vice President Chang showcased our wonderful campus while extending an official invitation to the other APRU members to attend the 2018 APRU Annual Presidents' Meeting in Taipei. To stir interest in visiting NTU, the vice president showed a promotional film and distributed a series of iconic NTU-themed postcards that were designed by the Office of International Affairs (OIA) along with SoNTU.

Following the APRU meeting, Vice President Chang led two OIA colleagues in attending the AEARU meetings in Japan. The AEARU is a transnational research organization in East Asia that aims to promote exchanges between top research universities in the region, stimulate regional higher education and advanced research development, and enhance cultural, economic, and social progress.

This year, 60 representatives from 18 universities met at the University of Tsukuba to discuss

annual events and share ideas on current issues in science and technology. A devoted AEARU member for over 20 years, NTU had the honor of being elected to serve as the AEARU vice chair for 2018-2019, and will be working closely with the University of Tsukuba, which is our strategic partner as well as AEARU's newly appointed chair. In addition, Professor Chih-Jen Lin of the Department of Computer Science and Information Engineering gave an inspiring presentation on his research on data and machine learning, demonstrating NTU's academic strength in that field to the international audience.

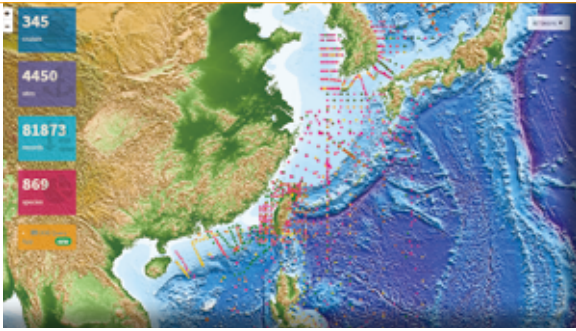
The OIA has actively pursued a wide range of international contacts in recent years. Besides expanding international cooperation opportunities, it aims to showcase NTU's strengths and generate a global impact. In 2018, the OIA will contribute to the celebration of NTU's 90th Anniversary by hosting the APRU 22nd Annual Presidents' Meeting and Presidential Retreat from June 24-26 as well as the AEARU 42nd Board of Directors Meeting and 24th Annual General Meeting in mid-November.



▲ The 15th Association of Pacific Rim Universities Senior International Leaders' Meeting drew attendees from around the world.

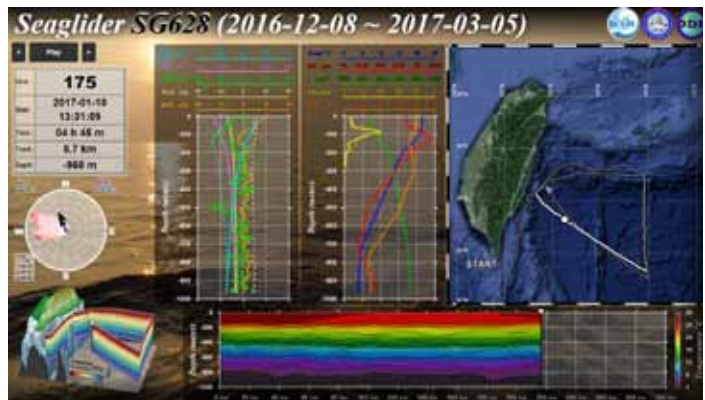
Research Achievements

Ocean Data Bank Provides Real-Time Oceanographic Information for the Nation



The Ministry of Science and Technology's Ocean Data Bank (ODB) has evolved from the marine conditions database first established by the Institute of Oceanography with the support of the ministry's forerunner, National Science Council, 31 years ago. Since its inception, the ODB has served as the "Central Weather Bureau" of oceanographic information for oceanographers and marine engineers, compiling and processing the wide range of physical, chemical, biological, geological, and geophysical oceanographic information gathered by the nation's research vessels and marine surveys.

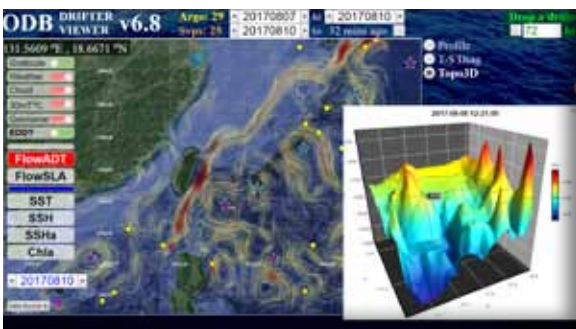
For several decades, the Institute of Oceanography has been responsible for ODB operations and actively involved in guiding data analysis across several fields. Going well beyond conventional data curation, the institute has steadily developed the ODB into a national-level marine database that plays an active role in the collection and integration of data, data analysis, data visualization, and information dissemination.



When called upon, the ODB provides vital real-time information for related government agencies. For example, the database assisted search and rescue operations following the crash of China Airlines Flight 611, and provided background data for fishing ground negotiations between Taiwan and Japan. In addition, it provides tidal predictions for Taiping Island in the South China Sea to assist ships in safely making port, and provides data to assist in site selection for offshore wind turbines.

The Institute of Oceanography continues to develop innovative technologies in its effort to provide useful real-time data tools for the ODB. The institute's development approach for the ODB is represented by three words starting with the letter "i": interactive, intuitive, and integrated—which reflect the establishment and operation of an Interactive data query platform, an Intuitive operating interface, and an Integrated inter-database information system.

The powerful array of data applications offered by the ODB provides valuable backup to the scientists who carry out sea exploration missions around Taiwan. In addition to supporting research, the ODB's multifaceted services are available to government and industry, as well, and boost Taiwan's emergency response readiness for marine accidents and natural disasters. The Institute of Oceanography also uses the database to promote environmental protection and share the joys of science with the public.



The ODB has added three innovative services recently. The Bio-Ocean Database allows users to search for information regarding the abundance of zooplankton and marine animals in the waters surrounding Taiwan based on such criteria as species type and sampling location.

Another new service is a real-time monitoring system for oceanic operations. The system displays information concerning the current location and status of vessels and devices deployed at sea, such as the Institute of Oceanography's Ocean Researcher I and Seaglider autonomous underwater vehicles.

Meanwhile, the Interactive Marine Information Digital Exhibition Center presents a wide range of important oceanographic information on a single web-based platform. Featuring information collected from marine buoys and satellite telemetry, the all-in-one platform is a valuable tool for researchers and laypersons alike.



Schoolchildren Learn the Love of Bugs in Public Lectures at Insect Museum

The NTU Insect Museum sits shrouded in trees a little off the beaten path at the foot of Toad Mountain. The museum's moss-encrusted building is the same building that housed the predecessor of the Department of Entomology when it was established as part of Taihoku Imperial University in 1936.

Despite its somewhat out of the way location and the unassuming appearance of the 80-year-old Japanese colonial building, the venerable institution is in fact the oldest museum in Taiwan. Housing over 330,000 individual insect specimens, it also boasts the largest collection of any museum in the nation, as well.

As one of the 10 museums in the NTU Museums Group, the Insect Museum seeks to share its valuable scientific assets with the public at large. Moreover, it hopes to expose a new generation of schoolchildren to the wonders of entomology and transform their natural fascination and fear of bugs into a love of the scholarly study of bugs.

To achieve these goals, the museum decided in 2017 to increase the number of public entomology lectures it schedules each month. Public response to the lectures was so positive that, by November, the two lectures held each weekend were drawing capacity turnouts.

Most of the attendees have been children accompanied by their parents. The enthusiastic reaction is the result of

not just the fascinating lecture topics, but promotional efforts on the part of museum personnel, as well.

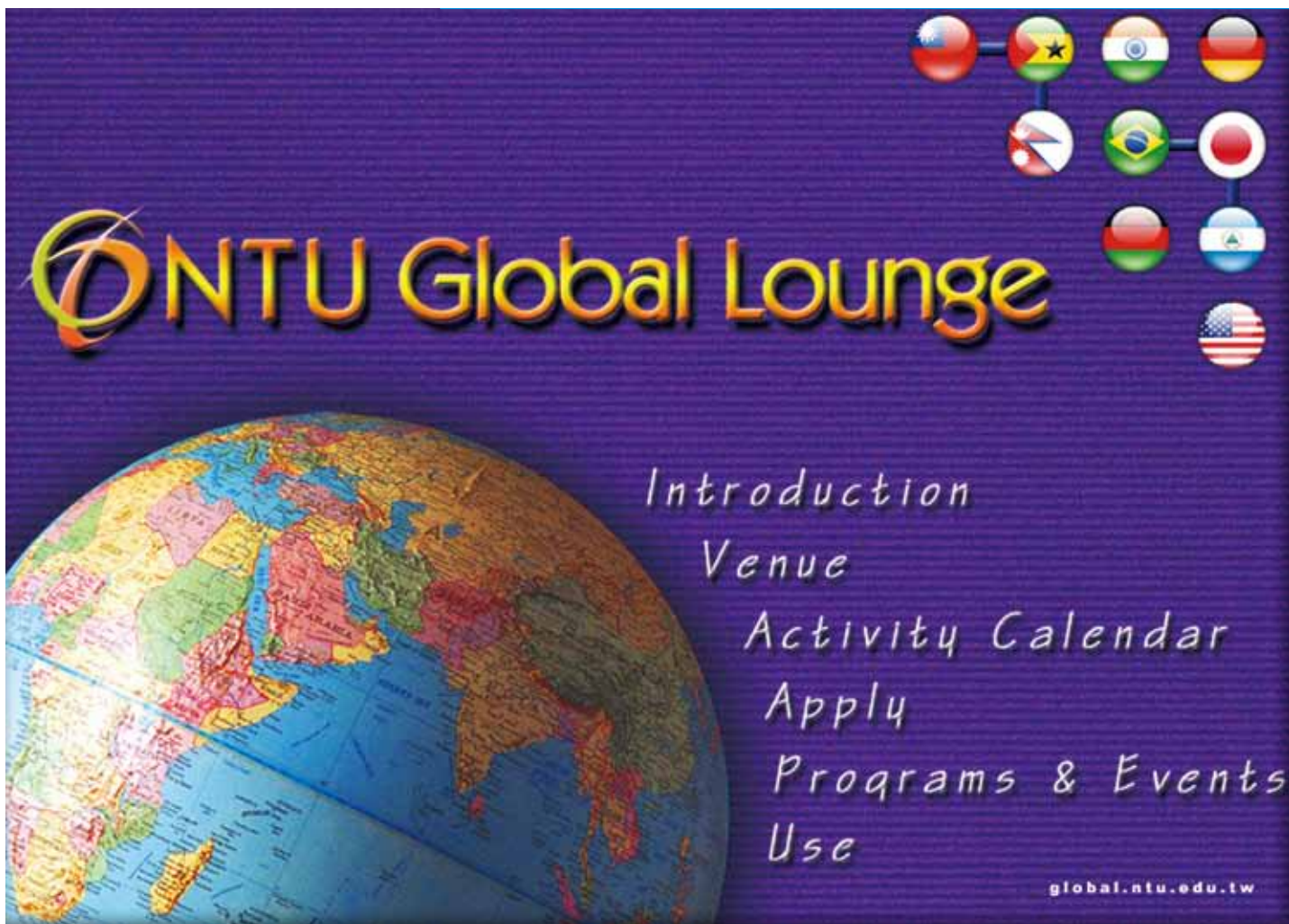
Presented by graduate students of the Graduate Institute of Entomology, the public lectures are designed on the basis of the students' own research work. While the topics cover deep scientific issues, the presenters fill their lectures with interesting insights, and strive to ensure they can be understood by the general public.

The most recent lectures have explored the courtship and breeding behaviors of various species of insects under the topic "Insect Mating." During the lectures, the audiences learned that moths and butterflies, despite their similar appearances, take quite different approaches to courtship.

Butterflies perform a dramatic flying dance in hopes of attracting a mate of the opposite sex. Usually, a female selects a mate from a flock of male dancers. While butterfly courtship depends on vision, moths find their mate through their olfactory senses—that is, they rely on sex pheromones.

For instance, the large feathery antennae of the male Atlas moth (*Attacus atlas*), an enormous moth found in Taiwan, enable it to detect the minute pheromone molecules released by the female from a distance of several kilometers. The male then locates the female by following the varying concentrations of the windborne pheromones.

After the lectures, attendees are free to tour the museum's special exhibition area, where they can view hundreds of beautiful insect specimens and learn more about the lives of bugs found in Taiwan and around the world.



International Students Wrap *Shui Jiao* Dumplings to Learn about Local Culture

The Global Lounge is a campus venue that provides a physical space where international and local NTU students can meet face to face to experience each other's cultures. As the university continues its efforts to internationalize our campus, we welcome an ever-growing number of outstanding students from every corner of the world. Representing a myriad of world cultures, NTU's international students enrich our campus and classrooms, and provide opportunities for local students to expand their global outlooks by forming friendships with and learning about their classmates from around the world.

Every semester, the Global Lounge is ascene of numerous international cultural exchange activities. There are events featuring Taiwan's Chinese culture for local students to share the things they love about the culture of Taiwan with international students. Moreover, there are events highlighting the campus's growing cultural diversity, such as an international student club expo, an international culture festival, and a celebration of international traditional cultures, in which international students get to return the favor by showcasing the fascinating aspects of their own cultures.

One of this semester's events designed to introduce international students to Taiwanese culture was held on October 27. "A Night of Taiwanese Culinary Culture" was organized around an activity that gave the students the chance to wrap their own *shui jiao*(stuffed dumplings). Not only did this event allow the participants to sample a

variety of tasty local dishes, it also offered a glimpse into the history and cultural aspects behind one of Taiwan's favorite foods. A total of 29 international students participated in the event.

After wrapping their *shui jiao*, the participants played a food game that promoted interaction between the international and local students and encouraged them to give free reign to their creativity. In addition, the organizers introduced the international students to a number of side dishes that traditionally accompany a meal of *shui jiao*. These included the classic tofu with century egg as well as wheat gluten and white dried tofu strips.

Chinese cuisine enjoys worldwide renown, and *shui jiao* is a quintessential part of Chinese cooking. Tourists from around the world travel to Taiwan every year to taste the delicious offerings of this kingdom of cuisine. The nation's countless restaurants and small eateries are not only intertwined with the daily lives of the people of Taiwan, they are also a direct reflection of her local culture.

By highlighting this connection between food and culture, "A Night of Taiwanese Culinary Culture" helped the international students gain a deeper appreciation of the prominence of food in Taiwanese culture.



NTU Opens Taiwan Education Center in Malaysia

The ribbon-cutting ceremony marking the official opening of the Taiwan Education Center, Malaysia (TECM) was held on October 7. Jointly established by NTU and the Alumni Association of National Taiwan University in Malaysia (AANTUM), the center aims to promote the study of Chinese language and culture and Taiwan's higher education system, as well as pursue exchanges and cooperation between universities in Taiwan and Malaysia.

Many honored guests attended the ceremony to celebrate the new milestone in the promotion of Taiwan's higher education system. Among them were: Representative James Chi-Ping Chang of the Taipei Economic and Cultural Office in Malaysia; NTU Vice President for Academic Affairs and TECM Director Hung-Chi Kuo; TECM Deputy Director Wen-Chang Chen; TECM Chief Executive Officer Tai-Hsiung Horng; TECM Chief Operating Officer Ching-Chih Liou; and AANTUM President Chien-Cheng Hou.

Speaking during the ceremony, NTU Vice President for Academic Affairs and TECM Director Kuo said that NTU has always valued international students, especially outstanding students from Southeast Asia. Moreover, he stressed that the university has reaped significant results due to the promotion of the option of submitting high school recommendation letters as part of the application process for entrance to NTU in recent years.

Representative Chang indicated that there are currently 16,051 Malaysian students enrolled in Taiwanese universities, which marks a record high. Chang

expressed his hope that NTU would continue to play a leadership role and support the TECM in its comprehensive promotion of Taiwan's outstanding education system.

In his address, TECM Deputy Director Chen revealed that NTU and the University of Malaya have already initiated a student exchange program; moreover, NTU looks forward to cooperating with other universities across a variety of areas, including talent cultivation, faculty exchanges, and industry-academia cooperation.

TECM Chief Executive Officer Horng said that the TECM's immediate task was to prepare for a series of education fairs and coordinate with the Federation of Alumni Associations of Taiwan Universities, Malaysia so that the two parties could avoid scheduling education fairs at the same venues. Horng also noted that Taiwan is delighted to welcome non-overseas Chinese students who wish to continue their educations in Taiwan, and that this would promote bilateral cultural exchanges.

The TECM is located near the offices of the AANTUM at 9, Jalan SS2/10, 47300 Petaling Jaya, Selangor, Malaysia. Among the services it offers are Mandarin language classes, information and consultation regarding Mandarin language programs, study abroad information and consultation, and education fairs.

Compilation Demonstrates Poet-Scholar's Integration of Theory and Creativity



NTU Press published the poetry compilation *The Poetic World of TuKuo-ch'ing* as a new addition to its Literature of Modernism Series in September. Over 700 pages in length, this hardcover book features 301 poems composed by the poet scholar TuKuo-ch'ing. The compilation demonstrates the author's talent in theory and practice as well as his integration of poetics and creativity in the pursuit of the art of poetry.

The compilation bears witness to Tu's love of poetry for poetry's sake. His poetic works achieve the quality of transcending the limits of place and period, making them accessible to readers of different times, languages, and cultures. The book has four main sections. The first section presents Tu's poetic theory, while the second and third address the corporeal

world and the emotional world. The final section explores the art of poetry.

Tu wanders through the world and makes idealistic reversals in his poetry. His poetic theory is based on an integration of objectivity and symbolism at its core, and is a fusion of mutually intersecting approaches based on object and emotion. While most of Tu's poetic compositions consist of love poems, he has also created works of incisive intellectual criticism that are spiced with satire and address political issues and historical incidents that reflect the realities of Taiwanese society.

The author, who graduated from NTU with a degree in foreign languages and literatures in 1963, is currently a professor of the Department of East Asian Languages and Cultural Studies as well as the director of the Center for Taiwan Studies at the University of California, Santa Barbara. Tu's research interests include Chinese literature, Chinese and Western poetics and literary theories, Taiwan literature, and comparative literature of the East and the West.

As both an author of Chinese poetry and a translator of Western literature into Chinese, Tu founded the journal *Taiwan Literature: English Translation Series* in 1996. The periodical is dedicated to introducing Taiwanese literature to English readers, and strives to make Taiwanese literature available to the international community while encouraging the study of Taiwanese literature from international perspectives.



Decade of Internationalization Brings Amazing Campus Transformations

The Office of International Affairs (OIA) reached the major milestone of the first decade of its establishment in 2017. On December 4, as part of the celebration of its 10th anniversary, the OIA held a tea party as well as an opening ceremony for a retrospective exhibition showcasing the amazing transformations the office's internationalization efforts have brought to our campus.

The earliest predecessor of the OIA, called the Liaison Center, was established in 1985. Over the years, the center operated under the names International Academic Cooperation Liaison Center and International Academic Exchange Center until it was upgraded to the Office of International Affairs in 2007.

Starting with a staff of only 12 people, the OIA has grown to nearly 40 staff members. This expansion of personnel has enabled the office to achieve outstanding results on multiple fronts. Not only has the OIA signed numerous student exchange and partner university agreements, it has also increased the quality and number of its programs and services. It has elevated NTU's participation in international organizations and promoted faculty exchanges and cooperation programs with universities around the world. Moreover, the office's efforts have resulted in a significant increase in the number of international students on campus.

The OIA's great successes of the last five years include the signing of major strategic partner agreements with seven elite international universities. In addition, the office expanded the number of short-term programs for international students from just 2 to 28; the number of students enrolled in these programs has climbed from 17 in 2010 to an accumulative total of 2,340.





EXHIBITION FEATURES TRADITIONAL TEXTILES OF THE SAISIYAT PEOPLE

The Museum of Anthropology joined hands with representatives of Taiwan's Saisiyat people to organize an exhibition showcasing the indigenous group's traditional textiles and weaving craft on campus this fall. The textiles featured in the exhibition included original ancestral items as well as modern reproductions.

Called "Weaving the Ancestral Pattern (Tinon Noka Tatini' Ka Hinobaang): In Search of a Hundred Years of Saisiyat Clothing," the exhibition ran from September 22 to November 20.

The reproductions were woven by a group of 10 Saisiyat women who spent three years relearning the weaving techniques of their ancestors. As reference material for their recreations, the women relied on Saisiyat family heirlooms as well as century-old Saisiyat clothing archived at the museum. The exhibition included a film depicting the women as they relearn the old weaving ways.

The festive opening ceremony drew a large audience that included many Saisiyat people. The ceremony also featured a blessing ritual of skewered pork and bamboo cups of rice wine led by Saisiyat elders and the singing of a traditional weaving song. After viewing the exhibition, the visitors congregated outside of the museum where they snacked on boiled pork and joined the Saisiyat people in pounding glutinous rice to make sticky rice treats.

tinon
noka tatini' ka hinobaang
 織出祖先的紋路
 尋回賽夏百年服飾風華
 2017.9.22-11.20

紋路，
 述說著
 部落的歷史與家族的記憶。
 每一件織品，
 都是
 織女對家人的感情。

苗栗縣賽夏族瓦標部落發展協會 | 國立臺灣大學



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