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HIGHLIGHTS

**Space Telescope
Launched to
Understand the
Early Universe**

**NTU, Kuwait U Strengthen
Academic Ties**

**Startup Programs to Foster
Campus Entrepreneurship**

**Innovative Sensor to Monitor
Patient's Vital Signs**

Special Report

NTU Press





CONTENTS

Special Report

- 02 NTU Press Marks 20th Anniversary with Republishing of Major Works
- 03 Antique Tea Tins Highlight Taiwan's Time as Prosperous Tea Exporter
- 04 Space Telescope Launched to Observe Distant Gamma-Ray Bursts
- 05 European Union Center Agrees to Continue Active Role in Taiwan-EU Research
- 06 Fubon Foundation Announces Donation and Globalization Lectures

Honors

- 07 Ophthalmologists Honored with Membership in Prestigious International Academy
- 08 Vice President for International Affairs Chang Elected as Foreign-born Member of Royal Spanish Academy

International Corner

- 09 Executive Vice President Chang Shares His View on Great University Education
- 10 Delegation Fosters International Cooperation in Kuwait and Saudi Arabia
- 11 World Food Fest Highlights Growing International Makeup of Campus

Research Achievements

- 12 Contactless Sensor Technology Wins National Technology Transfer Award

Campus Scenes

- 13 Students Help Homeless Tradesmen Repair Homes of Disadvantaged

Teaching and Learning

- 14 Students Construct Miniature Campus out of Tiny Building Bricks
- 15 Students Learn Biotech Techniques during Summer Lab Internship in Thailand
- 16 Interlinked Startup Ecosystem Drives Campus Entrepreneurship

NTU at a Glance

The Life Education Center Collects Used Handwarmers for Junior High Baseball Field





University Librarian's Statement

HSUEH-HUA CHEN

NTU Library has long served as the hub of the NTU campus, and even in this new era of web-based reading, it continues to welcome upwards of 10,000 visitors each day. Nonetheless, over my eight-years as university librarian, I have witnessed a major shift in the way students relate to the library, prompting us to undergo transformations aimed at ensuring we keep pace with the changing world.

Since we live in an era of multimedia information, NTU Library hopes that students will take the initiative to expand their explorations of different fields beyond print-based materials. Consequently, the library constantly cooperates with various departments and institutes in organizing exhibitions, lectures, and film screenings, which are based on a variety of visual media, to help cultivate the students' appreciation and understanding of the humanities. Moreover, with an increasing number of resources being shared over the Internet, the library has begun moving in the direction of cloud-based reading rooms.

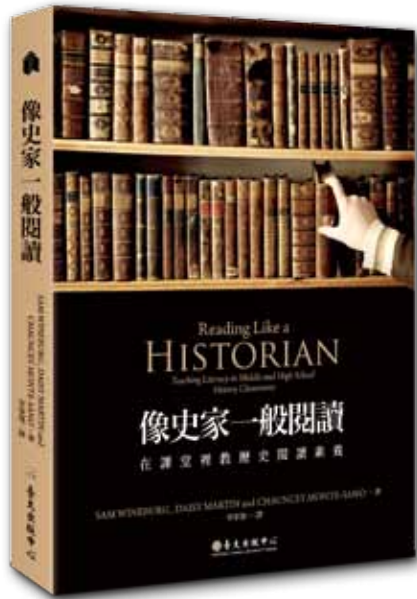
We have also begun working actively to procure a large collection of digital books as well as digitalize our special archives. For instance, the Tamshui-Hsinchu Files, which contains a treasure trove of over 19,000 official documents from the period of Qing dynasty involvement in Taiwan, has been uploaded in its entirety to the Internet.

Additionally, NTU Library houses an invaluable, extensive collection of intellectual heritage. It also provides an environment designed to properly protect and preserve these precious assets of humanity in perpetuity. As such, the university has been able to maintain a large repository of rare Japanese books and documents since its founding during the period of Japanese colonization. Numerous Japanese scholars have come to NTU to cooperate on research and publish important studies based on these materials.

One of the most noteworthy examples of these materials is an archive of historical documents from the Ryukyu Kingdom of Okinawa. Since Okinawa's historical records were destroyed during wartime, our well-preserved collection has become a vital resource for research on the Ryukyu Kingdom.

NTU holds an abundance of valuable resources. Apart from the archives maintained at NTU Library, the ten museums of the NTU Museums Group also possess fascinating collections. I sincerely hope that as students pursue knowledge in their respective fields of study, they will also take advantage of these important resources to develop a deeper understanding of subjects outside of their majors.





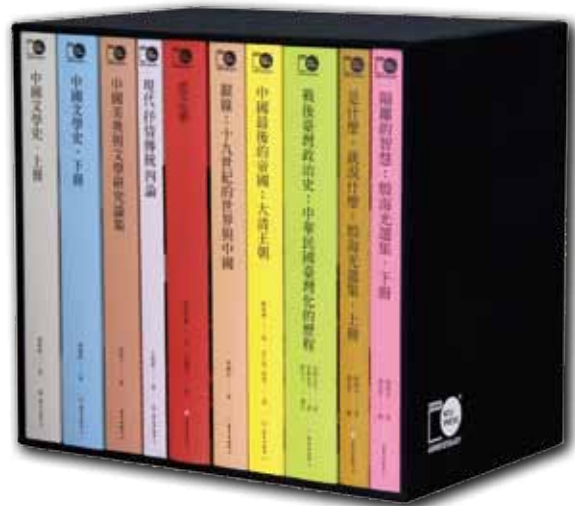
◀ The book cover of *Reading Like a Historian*

two NTU intellectual luminaries. These include *Volume 1* and *Volume 2* of Prof. Jing-Nong Tai's *The History of Chinese Literature*, as well as *Frankly Speaking* and *The Wisdom of Isolation*, which are the first two volumes of the 22 volume collection, *Complete Works of Hai-Guang Yin*.

The commemorative collection features three other books focused on literature, including You-Kung Kao's *Analects of Chinese Aesthetic Classic and Literature*, David Der-Wei Wang's *The Lyrical Tradition in Modern Times: Four Essays*, and Kuo-Ching Tu's Mandarin translation of Charles Baudelaire's *Les Fleurs du Mal*.

The collection is rounded out with three history books, Man-Houng Lin's *China Upside Down: Currency, Society, and Ideologies, 1808-1856* and William T. Rowe's

▼ The NTU Press 20th Anniversary Selection box set



China's Last Empire: The Great Qing, two books that address Chinese history in relation to world history, and Taiwanese history scholar Masahiro Wakabayashi's *The "Republic of China" and the Politics of Taiwanization: The Changing Identity of Taiwan in Postwar East Asia*.

NTU PRESS MARKS 20TH ANNIVERSARY WITH REPUBLISHING OF MAJOR WORKS

Established in 1996, NTU Press is celebrating its 20th anniversary this year. For two decades, the campus publisher has received valuable support and encouragement from the university in its endeavor to establish itself as an international Chinese-language academic publisher.

To mark this major milestone, NTU Press has looked back at its more than 700 published titles in compiling a commemorative collection consisting of 10 of its most important releases. Called *The NTU Press 20th Anniversary Selection*, the collection represents the high mark of the publisher's accomplishments, all of which can be listed on its report card for its outstanding performance to date.

In republishing these former best sellers, NTU Press has treated each to a comprehensive makeover. This includes re-edited content, new layouts, and newly-designed covers that suit the sensibilities of contemporary readers. The publisher has also invited influential scholars to pen new introductions for the refurbished editions, giving the readers an added incentive to revisit these exceptional works.

Among the books to be reprinted for *The NTU Press 20th Anniversary Selection* are four major works authored by



ANTIQUATE TEA TINS HIGHLIGHT TAIWAN'S TIME AS PROSPEROUS TEA EXPORTER

An exhibition featuring antique tea containers from a bygone era when Taiwan was a major supplier of tea to markets around the globe was held at NTU Library for the entire month of March. “The Story of Formosa Tea and Tea Trade Worldwide Exhibition” was organized by the Library and the NTU Museums Group in collaboration with the Formosa Tea Industry and Culture Gallery. Not only did the tea containers and related paraphernalia highlight Taiwan’s time as a prosperous tea exporter, it also revealed how Western consumers regarded the aesthetic culture surrounding the packaging and appreciation of Asian tea.

This was the first time the Formosa Tea Industry and Culture Gallery, located in Hsinchu County, permitted the display of its collection outside of its own facilities. The gallery’s main goal in curating the exhibition was to recreate a sense of Taiwan’s thriving tea industry and provide a reinterpretation of the local tea culture. The gallery’s rare tea tins and cans and historical photographs were presented alongside historic documents from

NTU’s archives, allowing viewers to gain an understanding of the centuries-long process through which tea transformed from a cultural asset to a commodity traded on a global scale.

With the opening of the Age of Discovery during the 15th century, tea emerged as the most important cultural medium and trading commodity driving exchanges between the Orient and the Occident. Besides opening the door to trade and cultural exchanges, tea also became an important commodity that helped link Taiwan to the world.

Meanwhile, the tea containers became vessels for both practical and marketing purposes. In addition to storage and protection of the tea, the tins and boxes were adorned with distinctively oriental designs which stood out as eye-catching curios at social occasions.

The tea boxes and cans amply reveal to us the cultural characteristics and aesthetic values of those bygone times, while their images and designs possess a charm capable of withstanding the test of time. While the containers were crafted to keep in the alluring fragrance of tea leaves, they also hold the warmth and affection of the local Taiwanese culture as well as the historical significance of a bygone era.

SPACE TELESCOPE LAUNCHED TO OBSERVE DISTANT GAMMA-RAY BURSTS



The NTU Leung Center for Cosmology and Particle Astrophysics (LeCosPA) celebrated the successful launch of a small spacecraft observatory last April that is expected to help unravel the mysteries of the early universe. Developed by teams from Taiwan, Denmark, South Korea, Russia, and Spain, the Ultra Fast Flash Observatory (UFFO)-Pathfinder is a telescope designed for the observation of early photons from gamma-ray bursts. It is capable of detecting X-rays, ultraviolet radiation, and optical light within an unprecedented one minute of a gamma-ray burst.



▲ Members of the international team behind the Ultra Fast Flash Observatory (UFFO)-Pathfinder hold a meeting at NTU.

The space telescope was launched from the newly-constructed Vostochny Cosmodrome in the Russian Far East onboard the Lomonosov satellite on April 28. The satellite's launch was the first launch from the new spaceport.

LeCosPA Director Pisin Chen, who heads the mission's Taiwanese team, says the UFFO-Pathfinder is attempting to observe the initial stage of gamma-ray bursts when luminosity increases explosively. This, according to Chen, will open new horizons for the study of gamma-ray bursts so as to help advance humanity's understanding of the violent explosion that formed the early universe. He notes that the project will have fulfilled its mission if it succeeds in capturing readings of the early ultra-fast flash events of even just a small number of gamma-ray bursts.

Currently, the Swift gamma-ray burst space telescope is the most advanced of its kind. However, Swift takes at least 60 seconds before it can lock on to a gamma-ray burst. Meanwhile, the new UFFO-Pathfinder is capable of making observations within just one to two seconds following a burst. As astronomers and astrophysicists around the world are now able to observe the very early moments of the bursts, they are anxious to delve into UFFO-Pathfinder's readings.

If the space telescope succeeds in using its X-ray instruments to locate a gamma-ray burst and detect optical light within one to two seconds, it will confirm whether gamma-ray bursts are a subtype of astronomical objects that can be used as a new standard candle for measuring distance in the universe. Since gamma-ray bursts originate from a greater distance in the universe than supernovae, their use as a standard candle would allow scientists to study the early evolutionary history of dark energy.



EUROPEAN UNION CENTER AGREES TO CONTINUE ACTIVE ROLE IN TAIWAN-EU RESEARCH

The European Union Center in Taiwan's Cross-Consortium University Presidents' Meeting and Steering Committee Meeting took place at the College of Social Sciences on April 29. As NTU is the lead institution of the EUCT's seven-member alliance, NTU President Pan-Chyr Yang presided over the meeting, which was attended by the presidents of National Chengchi University and Tamkang University, as well as presidential representatives from National Sun Yat-Sen University, National Chung Hsing University, Fu Jen Catholic University, and National Dong Hua University. During the meeting, the seven universities signed the 2016-2018 Consortium Agreement so that the EUCT can continue to play an active role in Taiwan-EU research.

The EUCT was established in September of 2008 when the presidents of the current consortium's seven universities signed a letter of intent agreeing to form an alliance with NTU as the designated lead university in order to invite the EU to establish an EU Center in Taiwan. Since then, the consortium has successfully obtained funding from the EU for the operation of the EUCT for two stages totaling seven years. While the second stage ended at the end of 2015, the center and the consortium successfully acquired

additional funding through the EU's Jean Monnet Programme in September 2015.

In signing the 2016-2018 Consortium Agreement, the seven universities agreed to maintain independent finances while still cooperating for mutual benefit under the EUCT's framework so that they can continue to promote and expand exchange, education, and research projects with the European Union in Taiwan.

During the Steering Committee Meeting, the Head of the European Economic and Trade Office in Taiwan, Madeleine Majorenko, commended the alliance for raising the visibility of the EU in Taiwan as well as for the important role it has played in deepening the nation's EU research. Ms. Majorenko added that she was greatly impressed by the diverse and probing projects the center and consortium members have lined up for the next three years. Therefore, she proposed deepening and expanding cooperation between the EETO and consortium members so as to bring about increased exchanges between Taiwan and the EU.

EUCT Director Hongdah Su, who holds the Jean Monnet Chair Professorship of the NTU Department of Political Science, says Taiwan's EUCT alliance remains the largest and most successful university consortium among the worldwide network of EU Centers. He further attributes the EUCT's accomplishments to the alliance's selfless collaboration.



FUBON FOUNDATION ANNOUNCES DONATION AND GLOBALIZATION LECTURES

Fubon Cultural and Educational Foundation announced the donation of NT\$30 million in research funding over five years to the NTU Risk Society and Research Center on April 19. Motivated out of concern for Taiwan's societal, environmental, and economic development, the foundation called for the policy research of sustainable economic and social development strategies. During the announcement ceremony, NTU President Pan-Chyr Yang joined Chairperson of Fubon Financial Holding Co. Daniel Ming-Chung Tsai in signing the donation agreement.

Besides the generous funding, the foundation, in collaboration with NTU, launched the Fubon Globalization Lectures, a lecture series that will invite intellectual luminaries and prominent scholars to share their visionary insights concerning interdisciplinary issues related to globalization. The series was set up for the purpose of leading the public in cultivating innovative thinking regarding the development of society.

The first lecture of the series took place on the day of the donation announcement. Presented by Nobel laureate and former Academia Sinica president Yuan-Tseh Lee, the lecture, entitled "We Do Not Have Much Time Left," explored approaches to achieving breakthroughs in energy transformation in Taiwan during this era of global climate change.

During his talk, Lee stressed that as the world confronts a major crisis of global climate change, Taiwan finds itself

at a crucial juncture marked by the need for rapid carbon use reduction as well as change in energy production and societal habits. He emphasized the need for every sector of Taiwan, including the government, scientists, non-governmental organizations, businesses, and the general public, to work together in taking aggressive action against the climate challenges so as to create a new and better future.

Following the lecture, a forum led by author Hsiao Yeh, Prof. Kuang-Jung Hsu of the Department of Atmospheric Science, and Green Citizens' Action Alliance Chairperson Wei-Chieh Lai, all of whom are prominent figures in the areas of arts and culture, academia, and environmental protection, continued to address the issues of globalization, climate change, and energy transformation.

Surveys of public attitudes regarding climate change conducted by the NTU Risk Society and Research Center in 2012 and 2015 revealed that a high and growing percentage of Taiwanese citizens support government reforms aimed at shifting to greener energy sources. The percentage of the public willing to support renewable energy through higher electricity prices climbed from 81.6% in 2012 to 85.1% in 2015, while the percentage supportive of government-imposed energy and environment taxes rose from 61.1% in 2012 to 68.0% in 2015.



Ophthalmologist Honored with Membership in Prestigious International Academy

Prof. Prof. Fung-Rung Hu of the College of Medicine's Department of Ophthalmology has been elected as a member of the prestigious Academia Ophthalmologica Internationalis this year. AOI membership is regarded as one of the highest international honors in the field of ophthalmology. Prof. Hu's election not only reflects the high value of her clinical and research accomplishments to the international ophthalmologist community, but shines a light as well on the world-class research being conducted here at NTU.

Prof. Hu's election makes her the first ophthalmologist from Taiwan to have been bestowed with the honor of AOI membership. This is an especially remarkable achievement, as the AOI limits its membership to only 100 scholars in total, and grants membership to just a small fraction of the candidates nominated each year. Moreover, the great majority of the institution's members are highly respected ophthalmologists from North America



and Europe; only a small number of scholars from Asia have ever been elected.

Apart from lecturing at the College of Medicine, Prof. Hu also serves patients as an attending physician at NTU Hospital's Department of Ophthalmology. After earning her medical degree at NTU, Prof. Hu went abroad

to work as a research fellow at the Harvard Medical School Department of Ophthalmology. She has held such prominent positions as chair of the College of Medicine's Department of Ophthalmology, vice superintendent of NTU Hospital, and president of the Ophthalmological Society of Taiwan.

As to research, Prof. Hu has investigated extensively into the pathogenesis, diagnosis, and treatment of corneal diseases. Her main areas of research include corneal and conjunctival diseases, laser refractive surgery, microbial keratitis, and corneal transplantation. Prof. Hu has published nearly 200 papers in major medical journals and is frequently invited to deliver speeches at international medical conferences. Most importantly, the new AOI member's research has led to numerous treatment applications that have improved the wellbeing of countless patients around the world.

VICE PRESIDENT FOR INTERNATIONAL AFFAIRS CHANG ELECTED AS FOREIGN-BORN MEMBER OF ROYAL SPANISH ACADEMY



Vice President for International Affairs Luisa Shu-Ying Chang was elected as a member of the prestigious Royal Spanish Academy (RAE) in April. Vice President Chang, who is a professor of Spanish literature at the Department of Foreign Languages and Literatures, was among the 17 Spanish-language scholars, only five of whom are women, from around the world to be selected as new foreign-born correspondent members. This year marks the first election of new members to the academy since 2009.

Chang is the first Chinese-speaking scholar to have been elected as a foreign-born correspondent member. The RAE comprises a maximum membership of 46 native-born Spanish nationals who also known as numerary members. New members are elected only after a member passes away. Meanwhile, foreign-born members, who are given the title as correspondent members, are permitted to participate in RAE plenary

meetings concerning Spanish literature and language and make academic suggestions.

The selection process for the new correspondent members, took more than one and a half years to complete, and was carried out under the leadership of the RAE's new director, Darío Villanueva. Candidates for membership must be recommended by three RAE members and undergo a rigorous process including a review, responses to queries, and voting. Since taking office, Villanueva has actively initiated academic reforms and pushed for the organization's globalization.

Established three centuries ago, the RAE is the official royal academic organization whose mission it is to preserve and manage changes and additions to the Spanish language. Expanding beyond the borders of Spain, the academy is the leading institution of 23 other Spanish language academies of around the world. The RAE works to promote the Spanish language and its literature, translation, and research in accordance with its ultimate goal of maintaining the linguistic unity of the Spanish language across the Spanish-speaking world.

Vice President Chang received her Bachelor's degree and Master's degree in Spanish at Fu Jen Catholic University. In 1987, a Ministry of Education scholarship enabled her to continue her education at the Complutense University of Madrid, where she obtained a Ph.D in Spanish Literature. Chang hopes to use the honor in sharing her experience of studying, teaching, and conducting research in a foreign language to encourage students to learn the language as well as the culture.

EXECUTIVE VICE PRESIDENT CHANG SHARES HIS VIEW ON GREAT UNIVERSITY EDUCATION

Executive Vice President for Administrative Affairs Ching-Ray Chang and Deputy Vice President for International Affairs Bennett Yu-Hsiang Fu visited the city of Xi'an in China's Shaanxi Province from April 5-9 to attend the 120th anniversary of Xi'an Jiaotong University.

The visit allowed the two universities, which signed their first exchange agreement in 2007, to deepen their friendship and discuss opportunities for future cooperation. While there, the two NTU administrators also participated in a world universities exhibition and world universities presidents' summit, during which Executive Vice President Chang delivered a speech.

Besides discussing academic research exchanges with XJTU's School of Science, Chang also shared his views on world-class universities during an interview with a reporter from the newspaper *Shaanxi Daily*.

In the interview, Chang said, "Each university has a different emphasis, and while some are employment oriented, I take a different perspective because I believe that students educated at good universities are not of a unified standard." Chang went on to talk about his notion of a great university, stating that the reason why universities in Europe exude such a sense of "sacredness" is because of their history: "graduates of great universities are always proud of their history. This is because these universities represent the spirit and culture of their country and region. An elite world university should possess history, a distinguishing character, and, especially, a strong faculty." Using the California Institute



▲ Executive Vice President for Administrative Affairs Ching-Ray Chang delivers a speech during a world universities presidents summit at China's Xi'an Jiaotong University.

of Technology as an example, Chang added that "a great university is not marked by its size."

Asked to share his advice for students, Chang stated, "First, students must appreciate learning and regard the acquisition of knowledge as a pleasure in itself." He stressed the importance of developing a solid foundation that is wide and diverse in scope, adding that "Students should not limit their space for future growth by positioning themselves in a single narrow field too early."

Chang went on to compare life to a marathon that requires a philosophical logic: "Don't compare yourself to those above you. Study happily and grow happily. As long as you make progress each day, you're doing well." Lastly, Chang encouraged students to be honest with themselves: "Regardless of your field of study, you must honestly face your strengths and weaknesses. When you make a mistake, you must have the courage to admit it and make changes."

▼ Executive Vice President for Academics and Research Liang-Gee Chen and Kuwait University President Hussain Al-Ansari pose for a photo.



▲ Research conducted at the Kuwait Institute for Scientific Research has led to the production of commercial bottled water through seawater evaporation. A sample of this bottled water sits on the table during a meeting between NTU and KISR officials.

A high-level delegation composed of six NTU administrators traveled to the Persian Gulf in early April to foster international cooperation with universities and research institutes in Kuwait and Saudi Arabia. In addition to furthering relations with existing partner Kuwait University, the delegation also met with potential new partners to discuss opportunities for academic and research cooperation.

DELEGATION FOSTERS INTERNATIONAL COOPERATION IN KUWAIT AND SAUDI ARABIA

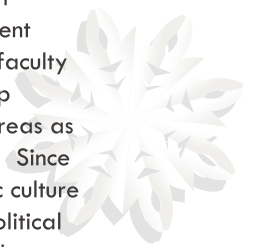
The delegation included Executive Vice President for Academics and Research Liang-Gee Chen, Vice President for International Affairs Luisa Shu-Ying Chang, Dean of the College of Engineering Jia-Yush Yen, Dean of the College of Public Health Wei J. Chen, Associate Dean of the College of Electrical Engineering and Computer Science Hsin-Hsi Chen, and Office of International Affairs Director for Global Alliances Linda Chang.

NTU and KU have enjoyed frequent exchanges since establishing their partnership in 2011. While at KU, the delegation held talks with President Hussain Al-Ansari and Assistant Vice President for Academic Development Ahmet S.Yigit. Besides planning further student and faculty exchanges, the two parties decided to jointly develop directions for research plans, focusing on such vital areas as water resources, energy, public health, and medicine. Since Taiwanese students lack direct interaction with Islamic culture and higher education, the two sides hope that any political drawbacks that might persist can be transcended with academic exchanges focused on education and technology.

The delegation also visited the Kuwait Institute for Scientific Research, which is the Kuwait equivalent of Taiwan's Industrial Technology Research Institute, and who has already cooperated on nearly 20 research projects with Taiwanese partners. The NTU administrators visited the institute's renowned Water Research Center and met with KISR officials to discuss potential models for cooperation.

At the Kuwait Foundation for the Advancement of Sciences, which supervises an endowment that funds international projects with Kuwaiti partners, officials informed the delegation of funding opportunities for well-designed research projects that include Kuwaiti personnel. The delegation also stopped by Gulf University for Science and Technology, Kuwait's most elite private university, where it enjoyed a tour of the campus led by the university's Vice President for Academic Affairs Salah Al-Sharhan.

Then in Saudi Arabia, the NTU administrators went to King Abdullah University of Science and Technology. While there, they were deeply impressed by the priority that each of the university's professors placed on providing the finest education to his or her students.



International Corner



World Food Fest Highlights Growing International Makeup of Campus

Lu Ming Square drew a crowd of nearly 1,000 excited visitors for the colorful opening ceremony of the NTU World Carnival Festival on April 30. Organized by the Office of International Affairs and the Office of Students Affairs, the 2-day festival revolved around an international food fair that gave visitors the chance to sample a variety of traditional and innovative cuisines while experiencing the cultures which the delicacies represented.

The festival was part of the 2016 Break and Fuse Fest, which was jointly organized by the three members of the recently-established NTU System—National Taiwan University, National Taiwan Normal University, and National Taiwan University of Science and Technology. The event was aimed to highlight the growing international makeup of the three campuses as well as to create more interaction opportunities for international and local students outside of the classroom.

The opening ceremony was led by Vice President for Student Affairs Tsung-Fu Chen, Vice President for International Affairs Luisa Shu-Ying Chang, Deputy Vice President for International Affairs Bennett Yu-Hsiang Fu, and Dean of the College of Liberal Arts Jo-Shui Chen. Many high-level dignitaries from abroad were also on hand for the celebrations, including representatives from the Korean Mission in Taipei, Manila Economic and Cultural Office, Embassy of the Republic of Nicaragua,

Embassy of the Republic of Panama, and Mexican Trade Services Documentation and Cultural Office. Director I-Ping Liang of the NTNU Office of International Affairs and Section Chief Su-Miao Liu of the Ministry of Education's Overseas Chinese Students and International Students Service Section were also in attendance.

The international food fair featured booths designed and run by some of NTU's international students from around the globe and 29 Indonesian and Malaysian students from NTUST. Among the delicious offerings were freshly baked Swiss-style cheese bread, Malaysian kebabs and bak-kut-teh pork rib soup, Korean fried cakes with a Panamanian flavor, Mexican tortillas, and Turkish chicken wraps.

In the past, the booths had been operated solely by student clubs. This year, the organizers decided to allow students to set up booths regardless of their club affiliations to encourage greater openness and creativity. Besides enhancing cooperation among student clubs as well as increased cross-cultural interaction, this approach fulfilled the Break and Fuse Fest's goal of breaking down the old models and creating an amalgamated, vitalized version of the original event.

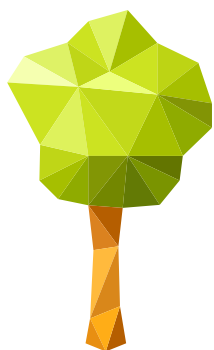
Research Achievements



- ◀ This dynamic high blood pressure monitor bracelet developed based on Prof. Shiming Lin's research provides improved home blood pressure supervision and clinical management.
- ▼ Prof. Lin's contactless near-field sensor technology is capable of reading and transmitting a patient's pulse wave, heart rate, and respiration rate.



CONTACTLESS SENSOR TECHNOLOGY WINS NATIONAL TECHNOLOGY TRANSFER AWARD



The College of Medicine's Prof. Shi-Ming Lin, who serves as director of the Institute of Medical Device and Imaging, was awarded the Ministry of Science and Technology's 2015 Outstanding Technology Transfer Contribution Award for his development of a contactless, near-field sensor technology capable of reading and transmitting a patient's pulse wave, heart rate, and respiration rate. Prof Lin's innovative technology is the product of research he conducted in collaboration with YongLin Biotech Corp., Taiwan's largest developer and manufacturer of medical devices.

Requiring no direct contact with the body, Prof Lin's contactless technology relies on near-field direct sensing to monitor a patient's vital signs in real time. The technology is small enough to be installed in a watch-like device, making it ideal for portable and wearable applications. Designed for long-term, continuous supervision of a patient's physiological condition, it will enable doctors to remotely keep track of overnight and long-term care patients who are confined to bed, whether at home or in the hospital. When worn by patients who have difficulty moving, the technology can help reduce the possibility of complications in the case of emergencies.

YongLin Biotech is already preparing mass production of devices using Prof. Lin's technology with plans to add them to its remote medical monitoring product line. Once on the market, the technology will make substantial contributions to the medical industry in Taiwan and around the globe.

Students Help Homeless Tradesmen Repair Homes of Disadvantaged



▲ KIGE Studio helps disadvantaged families by renovating their homes.

In a small, inconspicuous housing unit, dim lights flicker against a leaky ceiling and a four-month-old baby lies on a simple makeshift mattress. Unable to afford home repair, the baby's single mother is fortunate that KIGE Studio has agreed to step in free of charge.

Run by the Homeless Taiwan Foundation, the KIGE Studio project links homeless people who possess skills in carpentry, plumbing, and electrical repair with disadvantaged families in need of home repair and renovation services. Not only does KIGE provide the workmen's salary so that they can earn an income and feel more closely connected to society, it also covers the cost of the materials needed for the repairs.

However, just nine months after the project was launched, the project's major repairman, Master Wu, who had himself been homeless, found steady employment and was preparing to leave. Having helped improve the living conditions of numerous needy families, he was unfortunately unable to stay on because the project's funds were near exhaustion. This was when a group of students from the NTU Creativity and Entrepreneurship Program got involved and provided crucial assistance that enabled the project to continue.

During the summer of 2015, the CEP students set about applying the knowledge they had gained through the program to help the studio with its operations. Turning to a crowdfunding website for financial support, the students provided assistance in arranging a long-term source of funding for projects, and also created a video clip as well as other promotional information to build KIGE's brand image. Within less than one month after kicking off their crowdfunding campaign, the revitalized



▲ AKIGE Studio recruits homeless craftsmen possessing skills in carpentry, plumbing, and electrical repair.

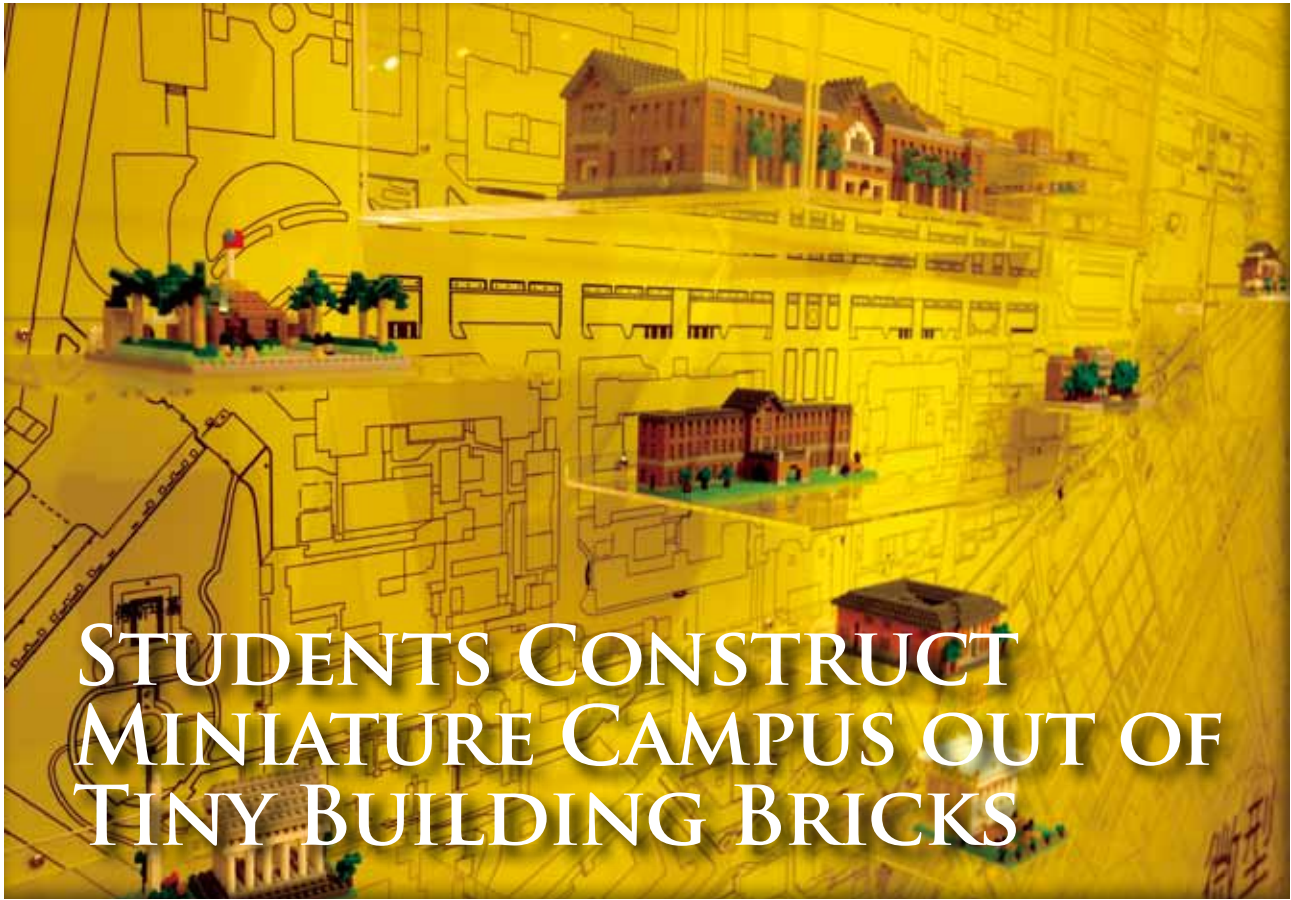


▲ A homeless craftsman performs renovation work.

project had already raised nearly NT\$1.2 million.

One CEP student says he initially believed KIGE Studio would have to stop providing free services for disadvantaged households if it intended to stay in the black. Later, however, he was persuaded by the project's principle of "helping people help themselves," and discovered through his work for the crowdfunding campaign that it was exactly that principle that had drawn people to donate.

Another student's experience with the project helped him arrive at a new point of view. He reported that he had realized that people are not divided by their living status, adding, "The difference between us and the so-called disadvantaged and homeless is actually not as great as some imagine it to be."



STUDENTS CONSTRUCT MINIATURE CAMPUS OUT OF TINY BUILDING BRICKS

During this year's Azalea Festival, our annual March-long celebration of all things NTU, the Gallery of NTU History held two interactive workshops that allowed participants to create miniature versions of our remarkable campus architecture out of TICO Mini Bricks. The completed works were placed onto a campus map and displayed in the Miniature Campus section of the exhibition "Invisible and Visible NTU," a special long-term showcase of the university's past and present.



The museum organized the workshops in collaboration with Shiarn Fur Industry Co., the Taiwanese company behind the tiny Lego-like building bricks. Besides providing a supply of Mini Bricks, which come in sizes as small as four-by-four millimeters, the company also enlisted the skills of geometric sculpture artist Kuan-Ying Wu.

Wu opened the workshops with a one-hour tutorial covering the techniques for creating intricate architectural designs. The participants then proceeded to carefully piece together their creations over the course of two hours under the guidance of the instructor.

Among the examples of campus architecture that were recreated in miniature were the Gallery of NTU History, College of Liberal Arts Building, Administration Building, Building No.2, Civil Engineering Building, Forestry Hall, Lu Ming Hall, Luna Pond, NTU Sports Center, and Just Sleep Hotel.



Most of the participants in this year's events were NTU students from the College of Engineering, College of BioResources and Agriculture, and College of Science. One exchange student from China also took part in the fun.

Teaching and Learning



Students Learn Biotech Techniques during Summer Lab Internship in Thailand

NTU's many summer school programs provide students with substantial learning opportunities as well as a summer filled with fun and games. For those who signed up for the College of Life Science internship program in Thailand, this was no exception.

Each year, a group of selected students travel to Thailand to take part in a two-month summer laboratory internship program at the National Center for Genetic Engineering and Biotechnology (BIOTEC), a research center under the National Science and Technology Development Agency.

During the internship, the students work five days a week conducting experiments in the laboratory where they are guided and mentored by the center's researchers. They also meet with their instructors each week to discuss their progress, breakthroughs, and possible obstacles. When encountering unanticipated experimental data or results, their instructors encourage them to first think about possible solutions before returning for further discussion. Despite the tight schedule and high degree of pressure, the students always come away from the program with some precious new experimental techniques as well as the feeling of been greatly enriched by the experience.

In last year's program, the students were assigned to BIOTEC's Biocontrol Research Laboratory, where

they performed experiments exploring the research topic "Polyketide synthase genes in the fungus *Beauveria bassiana* and their expression in *ex-vivo* cultured insect tissue." In addition to learning how to prepare *ex-vivo* cultures and observe insects and fungi, they also gained the opportunity to experiment using important molecular biology lab techniques, including RNA extraction, polymerase chain reaction (PCR), DNA electrophoresis, primer design, and reverse transcription polymerase chain reaction (RT-PCR). During the program, the members from the laboratory also provided special guidance to help the students understand the reasoning behind their experiments' results.

At the end of the program, each student presented a report on the results of his or her experiment. Although the two-month program did not allow enough time for the students to build up abundant and comprehensive data, they did find the process of learning itself to be far more valuable than were their experimental results. A past participant put it best in saying that the most important takeaway from the internship was learning to conduct experiments, interpret data, and design each stage of an experiment in detail.



◀ A Bunun Ai Feng field survey in progress.

Interlinked Startup Ecosystem Drives Campus Entrepreneurship

The 2016 NTU Creativity and Entrepreneurship Week was held from April 29 to May 7, offering a wide range of fun and informative activities, including workshops, lectures, seminars, startup project presentations, and a student recruitment meeting, all aimed at transforming the boundless creativity of the NTU community into real-world startup companies. For the first time this year, the main drivers of the university's startup movement, namely, the NTU Entrepreneurship Center, the Creativity and Entrepreneurship Program, and the Stanley Wang D-School@NTU, teamed up to organize the week-long event.

The university has spent years laying the groundwork for a campus-wide, interlinked startup ecosystem, which is now nearing completion.

In 2006, the College of Electrical Engineering and Computer Science took the earliest step in building the university's startup environment with the course "High Technology Entrepreneurship and Management." Designed by Prof. Liang-Gee Chen of Department of Electrical Engineering and former NTU Executive Vice President for Academics and Research, who now serves as Political Deputy Minister of the Ministry of Education, the course was widely popular among the department's students, confirming the demand for entrepreneurship related programs on campus.

Building on this success, NTU established the Creativity and Entrepreneurship Program in 2008, effectively expanding its services to all NTU students, regardless of department or year, who wished to learn about entrepreneurship and building startups. Initially, the program emphasized the development of creative abilities and invited prominent business leaders to give lectures that cultivated students' creative thinking and creativity.

When Prof. Ji-Ren Lee of the Department of International Business became director of the program in 2012, he

▶ The 2015 NTU Creativity and Entrepreneurship



shifted its core focus to management and entrepreneurial practice while introducing courses in innovation strategies, marketing design, and user experience.

A few years ago, Prof. Chen, hoping to learn more about design thinking and the entrepreneurial spirit of Silicon Valley, organized a planning team composed of professors from the NTU Entrepreneurship Center and various colleges. The team traveled to Stanford University's renowned d.School for the Innovation Master Series. While there, Chen and his team also gained a better understanding of the West Coast's resurgent Maker Movement, a startup movement aimed at spreading the spirit of community garage-based innovation around the world.

Back at NTU, the planning team applied the concepts of the d.School and MakerSpace in establishing the D-School@NTU in 2015. In addition to incorporating design thinking and Maker Movement concepts into its curriculum, the school works closely with enterprises to lead students beyond the classroom and theory, and take them into the business community where they learn to deal with real-world scenarios. Students also take advantage of D-school's workshop to hone their maker skills and construct product prototypes.

Innovation is not just the foundation of entrepreneurship; rather, it is a powerful dynamic that propels society in the direction of positive change. At the same time, "design for real change" is not simply a slogan at the D-school, it is the guiding principle behind all of the school's endeavors.



The Life Education Center Collects Used Handwarmers for Junior High Baseball Field

The Life Education Center extended a warm helping hand to the baseball team of Miaoli Hegang Junior High School by supporting the team's campaign to collect used disposable handwarmers this past semester.

Concerned about the erosion of their red clay baseball field, the baseball players called on the public to donate their used handwarmers so the team could use the iron powder contained inside to maintain their baseball field. Not only would this significantly reduce the cost of purchasing clay, the team pointed out that the iron from the handwarmers causes a mild salinization of the soil.

Due to the unusually cold weather this past winter, the center managed to fill its donation box in just a short amount of time. Many students went out of their way to stop by the center's offices and drop off their handwarmers once they stopped generating heat. Some even wrote messages on the handwarmers, adding a personal touch to further encourage the young ball players.

While the center had already received donations from many members of NTU community, including students, faculty members, and even volunteer mothers, it took advantage of its popular annual film festival to further call on audience members to join the campaign.

In the end, the center succeeded in collecting three large boxes filled with 570 used handwarmers in just one month. After receiving this large shipment of donations, the members of the baseball team expressed their sincere gratitude for the enthusiasm and support demonstrated by the center and everyone from the NTU community.





ONLINE CALCULUS WORLD CUP ATTRACTS VIEWERS WITH COMBINATION OF E-SPORTS AND MATH

NTU's award-winning PaGamO, the world's first multiplayer online social gaming platform for education, attracted thousands of competitors and tens of thousands of online viewers to its Calculus World Cup this past spring. The event marked the world's first international competition combining e-sports and mathematics.

More than 2,000 teams from 300 universities in over 45 countries competed online in the preliminary round in February. The top 12 teams then traveled to Taiwan to battle it out in the semi-finals on April 8. After two hours of intense competition between the top teams from Indonesia's Bandung Institute of Technology, China's Xiamen University, and NTU, the three NTU Department of Electrical Engineering students emerged victorious, taking home the top prize of US\$10,000.

The finals were broadcast live online in both English and Mandarin to a total of more than 600,000 subscribing viewers around the world. Viewership peaked at 27,000 viewers during the broadcast and over 13,000 continued to watch until the announcement of the final scores.

