



Published by National Taiwan University  
Website: <http://ntuhighlights.ntu.edu.tw/>

# NTU

February 2018  
No. 64

## HIGHLIGHTS



### Calls Over Ridges: Student NGO in Nepal

### VP Joins King of Spain to Celebrate Academic

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Student Ambassadors Visit  
Japan

New Program Connects  
University & Industry

Teaching Resource Expo



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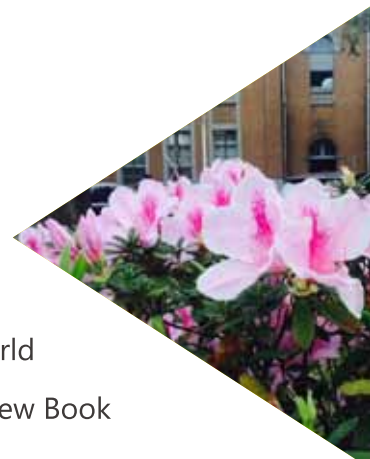
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## University Librarian

KUANG-HUA CHEN

Over the last half year, NTU Library has continued to pursue its long-term goal of serving as a leader among libraries in Taiwan and even the ethnic-Chinese world as a whole. In addition to pursuing its core mission, which includes acquiring academic resources, managing library materials, and planning the utilization of library space, the library has also actively developed a range of arts and culture activities aimed at a broader audience.

The library has made many new improvements to its facilities in order to make it more convenient for students to access library resources. The installation of automatic doors and card reading sensors on the first floor mean students don't need to push open a single door to enter the library. Other improvements include upgraded computer facilities, self-checkout machines, and book sterilizers. The library's staff has implemented these improvements based on the needs of users.

Moreover, the installation of a new Automated Storage & Retrieval Systems (ASIRS) is scheduled for completion in May. Boasting the capacity to archive one million volumes with optimal efficiency, the new system will be the first of its kind among Chinese-language libraries.

Besides making improvements to its physical facilities, NTU Library also hopes to provide students with high-quality reading materials. The library works ceaselessly to expand its archives and acquire periodicals. Some of the library's valuable resources are unique not just in Taiwan but in the world. Among these are historical diplomatic documents from Okinawa, which have drawn numerous researchers from Japan.

On another front, NTU Library is working to be more than just a place for learning, research, and reading and has therefore recently organized a number of arts and culture exhibitions on the first floor. In the future, the library intends to contact government agencies, such as the Ministry of Culture, Ministry of Education, Council of Indigenous Peoples, and Hakka Affairs Council, in order to jointly discuss approaches for more effectively using public resources for the promotion of arts and culture.

While NTU Library has always provided quality services to international students and faculty members, it is committed to working to create an even better basic foreign languages environment. At the same time, we hope international students and faculty members have more contact with Mandarin and experience the local culture so as to gain a deeper understanding of Taiwan.



# Economics Students' NGO Helps Nepalese Schoolchildren after Quake



▲ The volunteers lead the students along the road of education.

A magnitude 7.8 earthquake struck Nepal on April 25, 2015. Causing more than 7,600 deaths and property losses in the hundreds of millions of US dollars, the quake was the most powerful one to strike Nepal in over 80 years.

Located near the earthquake's epicenter, Nepal's Gorkha District suffered especially heavy losses. The local population, long dependent on agriculture, had already experienced an exodus of young workers and was severely impacted by the natural disaster. Many families became less willing to permit their children to spend time and expense on schooling, preferring that their

children become laborers as early as possible to help support the families economically. As a result, over one-third of schoolchildren in Gorkha were left unable to continue their education.

When Tzu-Chun Lin and Wan-Ting Tsai, students of the Department of Economics, heard about the predicament faced by the schoolchildren of Gorkha, they founded the non-governmental organization, Calls Over Ridges, to improve the educational environment in Gorkha. Lin and Tsai's organization has provided substantial assistance since initiating its first funding support project in 2015.

Besides helping over 100 students attend school, Calls Over Ridges set up libraries for two local schools and built up a teaching assistance system that serves more than 1,000 students and teachers.

From tuition and fees to promoting effective teaching methods, Calls Over Ridges provides practical support to the local schoolchildren. In a region where many youth become overseas migrant workers or young brides, the organization enables children to realize other possibilities for their lives by helping them pursue the "alternative" route of education.

Lin says, "The children of Gorkha

can imagine only a narrow range of possibilities for the future. Many local people can name no more than five occupations."

Lin first traveled to Nepal as a short-term volunteer in 2009. He made his way back in early 2015 to help poor children in remote areas. However, he began to feel doubts about his volunteer trip after leaving.

Lin says, "International volunteers teach students English, Chinese, and simple handicrafts. Yet, after we leave, the children are unable to continue learning Chinese and

Gorkha. That year, they helped 40 students affected by the earthquake to continue their schooling.

Putting their Department of Economics lessons into practice, Lin and Tsai not only provided financial aid for the students, they also set their volunteers to work conducting needs exploration surveys to ensure that their funding and resources were put to the best use. The volunteers also surveyed over a thousand students to better understand the factors impacting learning outcomes.

Lin and Tsai say the crucial point

of needs exploration is to gain an understanding of the local circumstances rather than simply rush to "solve" a problem based on an initial impression.

During the past three years, Calls Over Ridges has worked closely with the community. Gorkha's dropout rate has fallen from 42% to just 2%, while the enrollment rate from elementary school through high school has climbed from 10% to over 90%. Students at one elementary school with an enrollment of 200 students now turn in up to 300 book reports each week. Moreover, while parents' day was once a deserted affair, the parents of 90% of the students attended the event last semester.

Lin and Tsai have also set up an education seed project for the schoolchildren of Gorkha based on continued needs exploration. The project aims to improve the area's learning environment by working in four main directions: raising educational funds, establishing learning resources, encouraging parental involvement, and enhancing learning motivation.

► The volunteers give the students the opportunity to follow their dreams and escape poverty.



▼ A participating high school principal

English, and they lack materials for making handicrafts. Is it possible for an international volunteer service like this one to improve the lives of the children in a real way?"

When Lin expressed such doubts during an experience-sharing meeting after his return to Taiwan, he found a like-minded partner in his classmate, Tsai.

The pair adopted the name Calls Over Ridges and succeeded in raising funds from 350 students at 44 universities. Circumventing Nepalese government agencies, which take a cut at each level, Lin and Tsai delivered the funds directly to school principals and community leaders in





## Calls Over Ridges: A Chronicle of Events

**2009:** Tzu-Chun Lin visits Nepal as a volunteer for the first time during his second year of high school. He has a pleasant and fulfilling experience while there, but after returning to Taiwan can't help but wonder about the real effect international volunteers have on the local people.

**February 2015:** Lin and Wan-Ting Tsai exchange views following a volunteer activity. Both believe short-term international volunteers can achieve only limited results and that resources must be used more effectively.

**April 2015:** The earthquake strikes Nepal. Lin and Tsai decide to found Calls Over Ridges and work to collect donations from university students with the goal of helping the impoverished schoolchildren of Gorkha who have been seriously impacted by the earthquake.

**2016:** The NGO commences; it needs exploration work to gain a deeper understanding of the educational environment in Gorkha. In addition, the organization initiates its Project Aurorato appeal for volunteers and book donations. By this time, Calls Over Ridges has helped over 200 local children continue their schooling.

**2017:** Lin and Tsai begin promoting an education seed project that aims to enhance the educational conditions of the schoolchildren of Gorkha. The project sets out to build a local learning ecology based on needs exploration results so as to make improvements in four main areas: raising educational funds, establishing learning resources, encouraging parental involvement, and enhancing learning motivation.

**February 2018:** The education seed project comes to an end, having raised NT\$1.2 million. During the coming three years, the funds will be dedicated to helping three elementary schools and high schools near the location of the earthquake's epicenter, thereby enabling 900 students to continue their studies and improving the area's educational environment.

## Q&A with Tzu-Chun Lin and Wan-Ting Tsai

**Calls Over Ridges' service project goes deeper than most of the international volunteer programs we see in Taiwan. What was the motivation for starting it?**



**Lin:** Just as in the program I participated in nine years ago, the schedules of most volunteer programs tend to include foreign languages, art, and hygiene. The volunteers teach with passion and complete their service within the timeframe of the program. Still, after we leave, the local children have no one with whom to practice a foreign language, and they will certainly forget

the vocabulary and grammar they had learned. Lacking art supplies, they can only look, with longing in their hearts, at the creations they made during the volunteer program. The hygiene concepts we teach are unable to genuinely change the habits of the poor children within a short time.

**Tsai:** Indeed. As I have previously participated in a service program with a community association, I share the same doubts regarding short-term service. This is probably due to my education at the Department of Economics. We want to ensure that committed resources produce results effectively rather than be wasted on repeated short-term volunteer trips that end without having achieved any lasting improvements in local conditions.

**Having performed deep service up to this point, have your impressions and goals changed?**



**Lin:** I often say that, in Gorkha, the Koreans plant coffee, the Chinese plant tea, and we Taiwanese have come to plant education. My main reason for staying committed is the same as it was at the beginning: I want to prove that Taiwanese are also capable of performing deep, long-term service and making true improvements to the local environment, that we don't only let volunteers

come in rotation just to gain experience for themselves.

I used to imagine that service projects are about feeling, but my experience has taught me to be more rational. This is because real public service projects are actually more complex than business projects. We always discover new problems and thus must strive to establish new approaches. Business models, on the other hand, are simpler and easier to replicate.

**Tsai:** The greatest change is probably that I discovered I have truly started to have the attitude and expectations of learning as well as to join the local people in gaining understandings of different aspects and needs of their society. As to impressions about service work, many international volunteers say they have gained more than they have given. Frankly, I think this type of impression implies that you still believe you have, on balance, given, and that you occupy a higher status or possess greater prosperity. For my part, I feel I have continued to grow through service.



## NEW PROGRAM PROMOTES CLOSE COLLABORATION BETWEEN INDUSTRY AND UNIVERSITY

▲ The opening ceremony for the launch of the NTU Global Research and Industry Alliance

**N**TU formally launched the NTU Global Research and Industry Alliance on December 20, 2017.

The Global Research and Industry Alliance (GLORIA) is a program that was launched by the Ministry of Science and Technology in 2017 to facilitate close collaboration between business and university research programs with the goal of enhancing the nation's economic vitality.

The honored guests invited to attend the opening ceremony included Taiwan's most influential business figures, including Chairperson of Fubon Financial Holdings Richard M. Tsai, Chairperson of Quanta Computer Barry Lam, Chairperson of Etron Technology Nicky Lu, Chief Technology Officer of Acer Group Rwei-Chuan Chang, and Deputy Director of Microsoft Research Asia Peter T. Poon.

NTU Interim President Tei-Wei Kuo declared that NTU, in taking on the responsibility to innovate an effective new development model for academia-industry cooperation, is initiating a new economy of knowledge integration. This new economy would be the first in Taiwan to take the perspective of the business community as its core driver, and would upend the economic model of the past, erecting in its place a cross-sector and multidimensional platform for dialogue between business and university. Kuo said that NTU, as the leader of the nation's elite universities and one of the top 100 academic institutions to be granted US utility patents in 2015, would strive to realize the creative integration of the vitality of Taiwan's academic research

community and the development of industrial technology in order to create new opportunities for the Taiwanese economy.

Vice President for Research and Development Fang-Jen Lee said, "NTU is a research university that focuses on putting the fruits of scholarship to good use. The establishment of NTU GLORIA today marks a major improvement by expanding and encouraging research and development across all disciplines, constructing high-quality research infrastructure, and building an industry-academia research environment that is both foresighted and of practical value."

Executive Director of NTU GLORIA Eric Jiang noted that, among the universities to be selected to participate in the GLORIA program, NTU stands out as the one with the most comprehensive range of academic research and the most extensive influence across both industry and academia. Jiang said that, by taking a complete inventory of the needs and resources of industry and academia, NTU GLORIA would initially promote industry-academia cooperation projects for a new economy of knowledge integration that will utilize the systems of artificial intelligence plus (AI+), new financial technology, and the Internet of things (IoT) to produce applications in the areas of new medicine, new consumption, new entertainment, new agriculture, and new smart cars.



*Members of a student autonomous study group lead participants in making handi-crafts.*

# THOUSANDS ENJOY FUN AND SCIENCE AT TEACHING RESOURCE CENTER EXPO

The Second Northern Taiwan Teaching Resource Center (SNTRC) held a special exhibition to showcase the organization's amazing accomplishments over the last eight years at the Huashan 1914 Creative Park in Taipei last November. The SNTRC is a consortium of 15 universities—including NTU—that serves as a platform for the integration and sharing of resources among its member universities.

Held on November 25 and 26, the two-day expo featured a variety of fun and fascinating hands-on activities that allowed visitors to experience the pleasures of science. The activities included assembling a multi-colored LED tornado simulator, constructing a DIY 3D hologram projector, and shaping wire in the quaint style of Taiwan's vintage window grills. In another program, a scholar/magician used physics to explain his magic tricks. All of the activities were booked to capacity.

Drawing thousands of visitors and participants over its two day run, the exhibition was a festive affair that helped stimulate the public's motivation to learn as well as promote the concept of flipped classrooms.

In organizing the event, the SNTRC focused on the two themes of teaching and learning in introducing the university resource sharing



platform it developed to the general public as well as the ways it has integrated technology into its projects. The event showcased innovation in education and diversity in learning in its presentation of the new face of higher education in Taiwan.

The center's chief executive officer, Han-Yi Chou, a professor at the NTU School of Dentistry's Graduate Institute of Oral Biology, spotlighted the SNTRC's Summer College,



# Special Report



▲ Vice President for Academic Affairs Hung-Chi Kuo speaks during the exhibition's opening ceremony.



▲ While attending the expo, representatives of the Ministry of Education's Department of Higher Education witness the 15 universities' commitment to the continued implementation of resource sharing.



which is the center's most successful and popular program, as an example of its efforts to make its resources available to students from different institutions and academic backgrounds. Prof. Chou pointed out that the college adopts cooperative learning and interactive learning to enable students from different universities, disciplines, and academic levels to work together on exploring their common interests. Moreover, the college uses a discussion-oriented teaching assistant system as well as a teaching resources and interactive learning multimedia platform for the integration of classroom discussion and feedback.

The SNTTRC's innovative approach assists the teaching and learning of the traditional classroom to achieve a greater degree of diversity, and produces a win-win outcome in which professors continue to hone their teaching skills and students develop a deeper interest in the subject matter.

One of the most popular attractions during the exhibition was the program, Physics and Creative Thinking, in which Prof. Chung-I Chou

shared his creative talents and love of science. Besides serving on the faculty at Chinese Culture University's Department of Optoelectric Physics, Prof. Chou is also an avid magician. Prof. Chou's program centered on a magic show in which he applied the principles of physics to analyze the sleight of hand and smoke and mirrors that enabled him to perform his magic tricks. By giving life to physics in such an entertaining performance, each of Prof. Chou's magic shows drew nearly 100 visitors. The audience members, old and young alike, sat with their eyes glued to the stage as they followed Prof. Chou through his routine.

The vintage window grill wire-shaping activity was organized by a student autonomous study group and proved to be a highlight of the expo, attracting a steady stream of participants interested in handicrafts. A physics activity led participants, including young children, to assemble a multi-colored LED tornado simulator, which provided an opportunity for them to learn about the formation of tornadoes.

The DIY 3D hologram projector activity integrated complex scientific education and stimulate the motivation to learn.

# FOUR-UNIVERSITY ALLIANCE OPENS INDUSTRY-ACADEMIA RESOURCE CENTER IN THAILAND

*Vice President for International Affairs Luisa Shu-Ying Chang led a delegation of 13 high-level officials and faculty members from four elite national universities on an important mission to Thailand last December. The mission was organized to give Taiwan's academic community a deeper, on-the-ground understanding of the state of economic and trade conditions and industrial development in Thailand. While in Thailand, the delegation attended the ribbon-cutting ceremony for the opening of an industry-academia resource center, and participated in a joint Taiwan-Thailand forum.*

**N**TU joined National Taiwan Normal University, National Taiwan University of Science and Technology, and National Cheng Kung University in forming an alliance to establish and operate the Taiwan-Thailand Resource Center for Economics, Trade, and Industry-Academia Cooperation on behalf of the Ministry of Education.

The university alliance decided to establish the center at the Taiwan Association of Thailand, which has served Taiwanese people and interests in Thailand for 70 years, in order to provide relevant services to Taiwanese businesspeople in Thailand. The mission of the new center will be to collect economic and trade data on Thailand and cultivate professionals in economics and trade; it is aimed to become an important base in Thailand for graduates of Taiwanese universities and graduate schools who seek opportunities in Thailand.

The ribbon-cutting ceremony was held on December 9, 2017. Besides the university delegation and Chairperson Wen-Ping Chang of the Taiwan Association of Thailand,



▲ The grand opening of the Taiwan-Thailand Resource Center for Economics, Trade and Industry-Academia Cooperation

15 honored guests took part in the ceremony, including Deputy Representative Puo-Suz Shih of the Taipei Economic and Cultural Office in Thailand, President Yao-Lang Chang of Everclever Education Group, and Director General Patima Phanthapirat of the Chinese Association in Thailand.

The first Taiwan-Thailand Forum for Economics and Trade and Industry-Academia Cooperation was held on December 10. The forum addressed talent cultivation, industry upgrading, industry-academia cooperation, and fostering startup enterprises in the context of globalization and the Taiwanese government's New Southbound Policy. It also provided opportunities for Taiwan's academic community and Thailand's business community to engage in direct exchanges and gain a deeper understanding of market trends in Southeast Asia.

Eminent forum participants included Representative Chen-Yuan Tung of the Taipei Economic and Cultural Office in Thailand as well as a number of Thai businesspeople and academics.

NTU's Deputy Vice President for International Affairs Bennett Fu expressed his hope that the new center would take advantage of the integration of the four universities' academic and talent pool to create a useful platform for Thai enterprises, explore opportunities for industry-academia cooperation, as well as prepare participating students of the four Taiwanese universities to become leaders in the development of markets in Thailand.

Following the forum, NTU's Office of International Affairs (OIA) Director for Global Engagement Andrew Tsung and Manager Yi-Lun Tung attended the 2017 Conference of the Association of Southeast Asian Institutions of Higher Learning at Thailand's Naresuan University. While presenting his Country Report of Taiwan, Director Tsung discussed NTU's pioneering success in international exchanges and promoted the "power of partnerships" approach.

# Online Buddhist Library Listed in World's Top Digital Libraries



The NTU Research Center for Digital Humanities is responsible for maintaining and operating the Digital Library and Museum of Buddhist Studies (DLMBS), a website devoted to compiling bibliographies, full-text articles, and other research resources in the field of Buddhist studies.

The DLMBS was established by Prof. Heng-Ching Shih of the NTU Center for Buddhist Studies in 1995, and remains one of NTU's major contributions to the development of scholarly digital resources for the international academic community.

The DLMBS has been chosen by the National Central Library four years in a row as the representative website for religious and social studies in its annual publication *Selected Digital Resources for Chinese Studies in Taiwan*. Furthermore, the website is also the only Chinese-language, religion-related, and Taiwan-based digital library to gain a ranking among the "100 Extensive University Libraries from Around the World that Anyone Can Access," compiled by CollegeDegree.com.

The library maintains a bibliography consisting of over 400,000 entries and more than 40,000 full-text articles in 45 languages and 15 types of data. Besides this exhaustive list of publications in Buddhist studies, the library also offers online sutras, language lessons, a Buddhist museum, as well as the Buddhist Author Authority Database, which provides a list of nearly 100,000 authors. With this abundance and variety of archives and resources, the DLMBS is second to none among international websites devoted to religious studies.

Currently, the DLMBS's users represent 212 countries worldwide, and the site receives 7,000 visits per day. Having accumulated nearly 20 million visits since its launch in 2006, the website is recognized as a highly valuable research resource by international academia and scholars in Buddhist studies.



# Student Ambassadors Represent NTU on First Overseas Mission to Japan



▲ NTU Student Ambassadors pose for a group photo along with the Student Staff of the University of Tokyo.

A delegation of nine NTU Student Ambassadors represented the university on a mission to four NTU partner universities in Japan last November. The student expedition to Japan was the first overseas mission by NTU Student Ambassadors since the Office of International Affairs (OIA) launched the student ambassador program over 10 years ago in 2007.

The student delegation's visit during November 14-17 was organized as part of a series of activities, called "OIA X: A Golden Decennium 2007-17," that was arranged in celebration of the 10th anniversary of the OIA's founding.

Having stood out in the OIA's selection process, the nine student ambassadors were tasked with holding exchanges with student organizations and international groups at the University of Tokyo, Keio University, Waseda University, and Sophia University, all located in Tokyo. Prior to their journey, the students prepared

by taking part in the planning of the mission and compiling reports. They also received training on official visits and exchange activities to enhance their formal experience and knowledge of cross-cultural and international diplomatic protocol.



▲ NTU Student Ambassador and Master's student at the Graduate Institute of Chemistry Zi-Jie Yan introduces the NTU Student Ambassadors system to the Student Assistants of Keio University.

Among the four student groups with whom the NTU Student Ambassadors held exchanges while in Tokyo was the Student Staff of the University of Tokyo, a group established by that university's Division of International Affairs in August 2017. The six inaugural members of the group as well as their Division of International Affairs advisors all know how to play various musical instruments, which helps them to infuse creative energy of music into the promotion of international exchanges.

Four members of the University of Tokyo's Student Staff visited the NTU campus to meet with their counterparts here on January 31 this year. Their visit continued exchanges initiated in Tokyo, and strengthened the friendship between the two universities.

The OIA selects NTU Student Ambassadors and conducts training sessions each October. The 64 current student ambassadors represent each of the university's 11 colleges. Made up of local students, international students, and overseas ethnic-Chinese students, the group is able to speak more than 10 languages in total.

The student ambassadors' regular duties include helping the OIA receive international visitors and guest scholars, hold international conferences, and implement special projects. These outstanding and talented students provide vital support to the OIA in promoting the internationalization of higher education on the NTU campus.



## Engineering Professors Visit Kuwait University in Search of Common Research Interests

▼ Vice President for International Affairs Luisa Shu-Ying Chang represents the NTU College of Management in signing an agreement with Dr. Meshari O. Al-Hajri, Dean of Kuwait University's College of Administrative Sciences.



Vice President for International Affairs Luisa Shu-Ying Chang and Director for Global Alliances Linda Chang of the Office of International Affairs (OIA) accompanied a delegation of professors from the College of Engineering on an official visit to Kuwait University during December 10-13. This was the fourth time an NTU delegation had visited the campus of Kuwait University since the two universities formally established a partnership in 2011.

The main purpose of the NTU delegation's visit was to promote cooperation on academic research. The partners hope to create a new model for international research by integrating the strengths of NTU's outstanding faculty and deep research capacity with the development strategies and needs of Kuwait University. The partners plan to jointly submit collaborative research projects to the Kuwait Foundation for the Advancement of Sciences (KFAS) to obtain research funding.

The delegation attended a chemical engineering symposium organized especially for their visit by Dr. Bader Al-Anzi and Dr. Fawaz Al-Anzi of the Kuwait University College of Engineering and Petroleum. The symposium provided an opportunity for the faculty members of the two universities to discuss in person areas of chemical engineering in which they share common research interests.

Dr. Bader Al-Anzi is Kuwait University's convener in charge of academic cooperation with the Massachusetts Institute of Technology. His organization of the matchmaking research symposium laid a solid foundation for subsequent research cooperation between the two universities.

The College of Engineering's delegation included Profs. Bin-Juine Huang, Jyh-Ping Hsu, Chung-Hsin Lu, Kuo-Lun Tung, and Chia-Wen Wu.

The two universities have held multiple exchanges over the years. Kuwait University has sent a total of 50 members of its administrative staff in three separate trips to NTU to observe NTU's administrative staff in action and attend administrative workshops.

The OIA and the Office of Student Affairs have led two delegations of NTU students to Kuwait University to take part in exchanges. Moreover, in April of 2016, the then NTU Executive Vice President for Academics and Research Liang-Gee Chen led a delegation to Kuwait University. During that trip, former Executive Vice President Chen visited KFAS and the Kuwait Institute for Scientific Research to gain a better understanding of Kuwait's research organizations and strategies for international cooperation.

Besides the exchanges in chemical engineering that were discussed on the latest visit to Kuwait, the NTU College of Management and the Kuwait University College of Business Administration recently signed a college-level cooperation agreement.

# Vice President Chang Celebrates with King Felipe VI of Spain



▲ King Felipe VI of Spain presides over the release of the *Hispanic Judicial Dictionary* and the University of Salamanca's 800th anniversary celebration.

Vice President for International Affairs Luisa Shu-Ying Chang traveled to Spain to join in the celebration of two major higher education events on December 15, 2017: the 8th centenary of the venerable University of Salamanca and the publication of the new *Hispanic Judicial Dictionary*.

Vice President Chang attended the events at the invitation of the Spanish Royal Academy, an organization to which she was elected as a correspondent foreign academician in 2016. During the celebrations, the vice president, who is a scholar of Spanish and speaks fluent Spanish, had a conversation with King Felipe VI of Spain, who presided over both events.

The 800-year-old University of Salamanca is the oldest university in Spain and one of the oldest and most prestigious universities in Europe. In 2010, that university's vice president for international relations visited NTU to strengthen the partnership between the two universities.

Vice President Chang met with King Felipe VI at the anniversary ceremony. The king, age 49, was impressed by Chang's NTU pin, which was designed by the Office of International Affairs, and noted that his daughters Princess Leonor, age 12, and Princess Sofía, age 10, were learning Mandarin.

Chang told the king that in 2012, as Associate Dean of the College of Liberal Arts, she had joined a group of Chinese-language instructors to pay visits to the University of Salamanca, Complutense University of Madrid, Pompeu Fabra University, and University of Santiago de Compostela to help enhance Chinese-language instruction. The vice president also stressed that NTU was actively engaged in international collaboration with its Spanish partners, under which a growing number of Spanish-speaking students come to study in Taiwan.

Moreover, since the ceremony was attended by the current and the newly elected presidents of the University of Salamanca, Vice President Chang not only conveyed her

congratulations to the presidents but also invited them both to attend NTU's 90th anniversary festivities in 2018.



▲ Vice President Chang joins King Felipe VI of Spain for a photo.

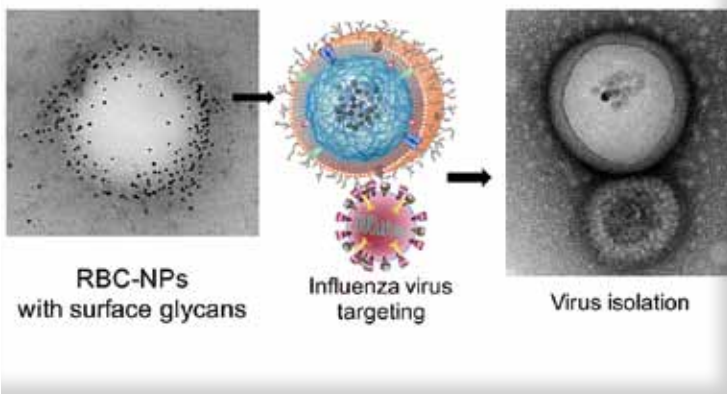
As a correspondent foreign academician, Vice President Chang is invited to participate in academic events of the Spanish Royal Academy according to royal decree. Her membership in the academy permits her to offer advice and suggestions regarding academic research and the usage of Spanish vocabulary.

The Spanish Royal Academy was founded in 1713 under the leadership of the king, who chairs significant academic events and award ceremonies to highlight the importance of such occasions.

The compilation of the *Hispanic Judicial Dictionary*, published in two volumes, 2,220 pages in total, was a joint effort conducted by 400 judicial experts and academicians under the coordination of the Spanish Royal Academy.

The publication ceremony drew the attendance of the world's leading Hispanic academics, including 22 directors and representatives from Latin American academies.

# Research Achievements



▲ Influenza virus targeting and isolation in the study

## Red Blood Cell-Mimicking Nanoparticles Enhance Flu Virus Detection

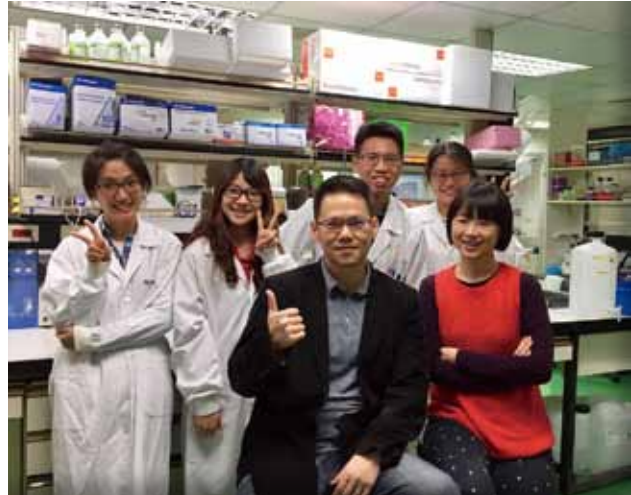
**D**r. Hui-Wen Chen, an assistant professor of the NTU Department of Veterinary Medicine, and Dr. Che-Ming Jack Hu, a principal investigator of the Institute of Biomedical Sciences at Academia Sinica, have applied advanced nanotechnology to develop virus-capturing nanoparticles that may facilitate the clinical diagnosis of infectious diseases.

Their study, titled "Targeting and Enrichment of Viral Pathogen by Cell Membrane Cloaked Magnetic Nanoparticles for Enhanced Detection," was published in the journal *ACS Applied Materials & Interfaces* on November 8, 2017.

The diagnosis and treatment of influenza viruses is an important issue in public health. Every year, infection by flu viruses causes critical disease in at least three million patients and leads to the loss of half a million lives. Due to the high variability of the flu viruses, tens of billions of US dollars are spent every year on virus diagnosis, treatment, and vaccine preparation.

The flu season in Taiwan starts in October. Early detection can improve influenza management by enabling patients to seek timely treatment and avoid severe complications. The development of new strategies to improve influenza detection is conducive to containing the infectious pathogens.

▼ The research team's members include: (from left, front row) Dr. Jack Che-Ming Hu, Prof. Hui-Wen Chen, (from left, back row) graduate researchers Zih-Syun Fang, You-Ting Chen, Bing-Yu Yao, and Dr. Chen-Ying Chien.



Prof. Chen is dedicated to developing influenza virus detection systems, therapeutics, and vaccines, while Dr. Hu is a pioneer in the area of cell-mimicking nanoparticles.

Due to the inherent affinity between influenza viruses and red blood cells, the research team decided to design a magnetic nanoparticle coated with the membranes of red blood cells. The researchers subjected the interaction between the nanoparticles and influenza viruses to a thorough analysis.

The team's results showed that the red blood cell-mimicking nanoparticles effectively bound to the influenza viruses. Upon sample enrichment by a magnetic field, the virus concentration could be increased by more than 15-fold. Furthermore, these nanoparticle-enriched samples exhibited enhanced signaling in the commercial rapid test.

More importantly, the enriched viruses retained their infective activity in cell cultures, meaning they could be subjected to downstream analyses including subtype identification and drug resistance studies.

This study was jointly conducted by investigators from the NTU Department of Veterinary Medicine and Academia Sinica, including graduate researchers Zih-Syun Fang, You-Ting Chen, Yuan-I Chen, Bing-Yu Yao, Ju-Yun Cheng, Dr. Chen-Ying Chien, and Dr. Yuan-Chih Chang.

Dr. Chen and Dr. Hu's interdisciplinary research team was supported by the "National Taiwan University and Academia Sinica Innovation Joint Program."



## EXHIBITION FEATURES NTU-HELD ARTIFACTS AND SPECIMENS FROM THE SOUTH PACIFIC

The Gallery of NTU History is currently hosting a long-term special exhibition of treasured NTU-held artifacts and specimens from different places and cultures in the South Pacific region. For the exhibition, "Cabinet of Curiosities: A Brief Glimpse into the Southeast Asian and Oceanic Collections of the NTU Museums Group," numerous remarkable items from the collections of the 10 members of the NTU Museums Group have been put on display.



The exhibition opened last year on November 15 and will run until September 30 of this year.

Highlights of the exhibition include a tapa cloth made from paper mulberry bark from Fiji, a wood sculpture of a monitor lizard from Australia, the skeleton of a dugong from the Philippines, a 100-million-year-old nugget of amber containing the vestiges of an insect from Myanmar, and a 15th-century celadon plate from Thailand.

Besides aiming to pique viewers' curiosity about the university's fascinating museum holdings, the exhibition showcases items brought to Taiwan during the era of Taihoku Imperial University (1928-1945). NTU's institutional predecessor acquired and collected a wide range of scientifically valuable assets and resources from South Pacific colonies then controlled by the Empire of Japan.

Measuring over three meters in length, the dugong skeleton is the centerpiece of the exhibition. Shigeru Motoda, a member of Japan's Palau Tropical Biology Research Institute, purchased the dugong

carcass from a Filipino fisherman after the marine mammal was asphyxiated in a fishing net in 1937. Motoda shipped the dugong to Taihoku Imperial University, where it was dissected and prepared as a specimen. More than 80 years later, it remains here on campus as the most prized possession of the NTU Museum of Zoology.

The exhibition includes large specimens of fossilized coral provided by the NTU Geo-Specimen Cottage. The coral was collected during the 1930s and 1940s from locations in the South Pacific by Ting-Ying Ma, who became the first chair of the Department of Geology of NTU.

Ma was the first paleontologist to note that the internal growth rings of ancient coral could be used to determine the climate of past ages, a finding that was far in advance of its time.

The tapa cloth displayed in the exhibition comes from the collection of the NTU Museum of Anthropology, which possesses bark cloth from Fiji and Samoa. The cloth was made by pounding the inner bark of the paper mulberry tree.

Molecular phylogeny analysis conducted by plant taxonomists indicates that all of the paper mulberry trees growing in places around the South Pacific may have originated from Taiwan. This finding is consistent with other research showing that the Austronesian peoples who dispersed the paper mulberry also originally came from Taiwan. Visitors who compare the South Pacific tapa cloth sample with Taiwanese indigenous clothing at the NTU Museum of Anthropology will discover that they share similar design patterns, as well.



# Teaching and Learning



▲ Dr. Arthur Lander provides patient guidance to his students.

## Systems Biology Students Learn Mechanistic Modeling in English



▲ Students take part in a workshop on the Mathematica computational programming tool.

As NTU continues its drive to internationalize the campus, both local and international students are offered a growing number and expanding variety of courses taught in English.

Last July, the Center for Biotechnology and the College of Life Science offered the short-term summer program, "Mechanistic Modeling for Systems Biology." Conducted completely in English, the five-day course was taught by Arthur D. Lander, the Donald Bren Professor of Developmental and Cell Biology at the University of California, Irvine as well as a distinguished chair professor at the Center for Biotechnology.

Along with the advent of the revolution in biological sciences and the development of biotechnology, the computation of biological models is becoming increasingly important to biological research. Systems biology is a quantitative approach to biology and biomedical science that relies on a range of

disciplines, including mathematics, physics, engineering, and programming languages and tools, to facilitate the study complex biological systems.

Prof. Lander taught the participating students the skills necessary for modeling and exploring the principles of systems biology. The course centered on mechanistic modeling for molecular biology and physiology. The students learned to combine mathematical modeling with their knowledge of biology through the systems biology approach to better understand biological problems. They also devised hypothetical and experimental models to predict the verifiable and possible reasons for changes in the molecules of their models.

The core framework of the course involved introducing biological mathematical modeling through the concepts of systems biology, and then using the Mathematica computational programming tool to master the concepts of higher-order mathematical functions. The course focused on five main topics: (1) Introduction to Dynamical Modeling in Systems Biology and Mathematica Programming Language; (2) Biochemical and Signaling Pathways; (3) Gene Expression and Regulation; (4) Spatial Dynamics, from Cells to Tissues; and (5) Control of Growth, from Development to Cancer.

A total of 26 students attended the course, including 6 Bachelor's students, 11 Master's students, 5 PhD students, 1 postdoctoral fellow, 2 professors, and 1 doctor. Each day the program participants attended two hours of classroom lectures and undertook one hour of practical modeling work. In addition, Prof. Lander devoted two afternoons to offering mathematical modeling training and providing one-on-one guidance.

Prof. Lander and his students engaged in enthusiastic discussions during the lectures and practical sessions. By using English, the students expanded their international outlooks in biological sciences. Moreover, through the process of conducting modeling computations, they advanced their scientific knowledge and skills and sharpened their ability to solve problems by critical thinking.



# Exoneration Practicum Uses Real Cases to Bring Legal Research to Real World

In recent years, public dissatisfaction with and lack of trust in legal professionals, from lawyers and prosecutors to judges, has become a major social concern. Although the pejorative "dinosaur judges," which describes judges who are out of touch with the realities of the common people, might not stand as an accurate representation of the situation, it does serve as an indicator of perceived shortcomings in the current professional legal system in Taiwan.

Legal education in Taiwan has always been focused on abstract interpretations of theory and legal requirements while placing little emphasis on the initial verification of facts and the process of legal subsumption. Consequently, a major element of recent reforms to legal education has involved the introduction of concepts like clinical legal education, which offers exposure to real-life cases to provide the students with a deeper understanding of the workings of the current legal system.

In keeping with such reforms, the College of Law partnered with the Taiwan Innocence Project to open an exoneration support practicum, titled "Wrongful Conviction," during the first semester of the 2014 academic year. The course was taught jointly by Prof. Yu-Wei Hsieh of the College of Law and the then Director of the Taiwan Innocence Project, Attorney Bing-Cheng Lo. By June 2017, the course had been held for six consecutive semesters and attended by over 110 students.

The conditions for gaining admission to the course are extremely strict. Only Master's and PhD students of the College of Law may enroll, but students who have passed examinations to be lawyers, prosecutors, or judges have priority. In fact, over 90% of the course attendees have passed such national examinations; moreover, some practicing lawyers and judges have taken the course, as well.

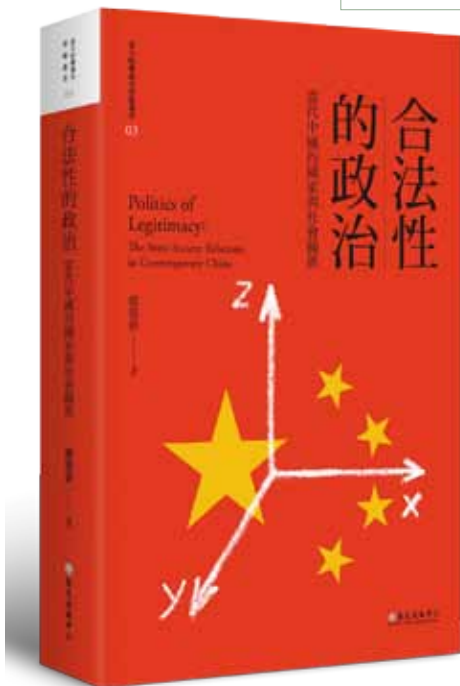
While the exoneration of wrongfully convicted people has been a significant social issue throughout history around the world, a number of cases in recent years have prompted Taiwanese society to show concern about this issue. Still, support for exoneration, not to mention exoneration research, remains underdeveloped here.

Students enrolled in the course are tasked with handling real-life cases and receive guidance from experienced professionals and scholars. The primary materials used in the course are cases and files provided by the Taiwan Innocence Project.

It is hoped that, by dealing with and researching real cases, students will explore new possibilities for academic research that are closer to real-life legal issues and concerns. At the same time, it is hoped that academic theory will benefit real legal operations, and that new energy will be injected into the promotion of legal reforms.

Ultimately, the course aims to cultivate well-rounded legal professionals who are sensitive to the nation's social context, understand the issues impacting contemporary society, and possess humanitarian spirit.

# Teaching and Learning



## Political Sociologist Explores Foundations of Chinese State Legitimacy in New Book

NTU Press teamed up with the Harvard-Yenching Institute to publish the book *Politics of Legitimacy: The State-Society Relations in Contemporary China* in December 2017. The book is the third book to be released as part of the National Taiwan University and Harvard-Yenching Institute Academic Book Series.

Written in Mandarin Chinese and authored by political sociologist Dingxin Zhao, the book is a compilation of essays addressing the basis of state legitimacy and state-society relations written over the last two-plus decades.

Zhao is the Max Palevsky Professor of the Department of Sociology at the University of Chicago and a professor at Zhejiang University in China. His research interests lie in the areas of political sociology, social movements, and comparative historical sociology.

The author argues that the basis of the legitimacy of state power can only be established in three ideal-typical ways: ideological legitimacy, procedural legitimacy, and performance legitimacy. Zhao's theory holds that different foundations of state legitimacy lead the public to form different political cognition models and behavioral characteristics.

In the book, Zhao applies his theory to analyze various aspects of contemporary Chinese politics. Among the issues he addresses are: Why did the Cultural Revolution initiated by Mao Zedong end in violence and factional politics? Why was it difficult for nationalist movements to develop in the China of the Deng Xiaoping era? Why was the 1989 student pro-democracy movement dispatched through violent repression? Why has performance legitimacy always occupied a highly important position in both the traditional and modern politics of China? What are the key reasons for the soaring economic development of China over the last few decades? Why, despite its excellent economic performance, have political tensions increased in China? Why do the Chinese mass media and social media display strong anti-establishment tendencies while the official media have difficulty forming Chinese public opinion? What are the potentials and limits for developing democratic institutions in contemporary society?

The articles compiled in the book comprise a broad analysis of many aspects of Chinese society since the reforms and opening initiated by Deng at the end of the 1970s. Taken as a whole, the articles not only provide a compelling account of the nature of the state and the current status of state-society relations in contemporary China, they also offer specific insights into the current state of world affairs.



## Student Choir Sings “Green Island Serenade” in Beijing



A 26-member NTU student choir traveled to China to perform at Tsinghua University last November. Organized by the NTU Center for the Arts, the student choir joined student choirs from Hong Kong and China to display their impressive a cappella skills at the 2017 Pine League Student Choir Festival, which was held on November 25.

The other participating

choirs came from the Chinese University of Hong Kong, Peking University, and Tsinghua University.

The festival opened with a performance by the Chinese University of Hong Kong's Lee Woo Sing College Choir, which presented several stunning vocal pieces, including “Joyful Songs We Sing in Celebration” and “Why We Sing.” Next, the Peking University Student Choir presented their rendition of “Claviante Brillioso” among other beloved songs.

After the intermission, the NTU students performed “Green Island Serenade” and other songs. The student choir of the festival host Tsinghua University boldly sang songs in German, such as “Tzigane,” as well as Mandarin, notably “The Moon Leans to the West.”

The festival ended with the nearly 100 members of the four student choirs taking the stage en masse to present the festival's closing numbers with feeling.



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臺北字第4272號

Publisher: Tei-Wei Kuo  
Editorial Consultant: Lin-lin Ku  
Editor: Ta-Te Lin  
Executive Committee: NTU Secretariat  
Published by National Taiwan University  
Tel: 886-2-3366-2032  
Address: No.1, Sec.4, Roosevelt Road, Taipei, 10617 Taiwan  
Website: <http://ntuhighlights.ntu.edu.tw/>  
臺灣郵政臺北雜字第1146號執照登記為雜誌交寄