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NTU

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HIGHLIGHTS

Seven Up: Newly Elected Academicians

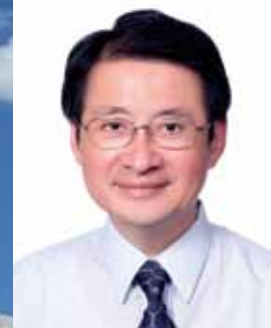
Students to Develop Global Leadership Skills

Oceanographers Capture Data on Super Typhoon

Student Hackathon

Special Report

400-Year Agriculture





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Students Organize Largest Hackathon in Asia





Tei-Wei Kuo

EXECUTIVE VICE PRESIDENT FOR ACADEMICS AND RESEARCH

Executive Vice President for Academics and Research Tei-Wei Kuo, who took up his vice president post in August, says he will focus on two major goals during his term: first, internationalization and, second, the promotion of interdisciplinary excellence. Kuo's aspiration is to continue to promote NTU on the international stage.

Addressing the approaches NTU is pursuing in its drive for internationalization, Executive Vice President Kuo says the university is currently planning the establishment of a College of International Studies and an undergraduate program in international studies, which are expected to help attract more international students to campus. Furthermore, NTU has responded to the new Southbound Policy of President Tsai Ing-Wen's government by boosting its student recruitment efforts in Southeast Asia. This past summer, NTU teamed up with National Taiwan University of Science and Technology, National Taiwan Normal University, National Yunlin University of Science and Technology, and National Formosa University in order to hold student recruitment seminars in Malaysia, Thailand, and Indonesia. The university is also preparing to hold recruitment seminars in Vietnam in the near future.

Besides its efforts in Southeast Asia, NTU is also working to establish new strategic academic alliances in Australia and other regions. While numerous NTU departments and graduate institutes have already formed partnerships with universities around the world, the university is seeking to expand both the number and depth of its international partnerships. Moreover, NTU is actively working to establish local NTU Centers in countries and regions around the globe, which will help the university more directly promote the excellent opportunities offered at NTU to international students.

Speaking on interdisciplinary excellence, Kuo says the Office of Academic Affairs is currently formulating curriculum adjustments and expanding resources in order to achieve the university's goal of producing graduates who possess knowledge across multiple disciplines. As part of these efforts, NTU President Pan-Chyr Yang and Vice President for Academic Affairs Hung-Chi Kuo are actively promoting the Core Abilities Curriculum, which aims to ensure students receive adequate instruction in the areas of writing composition, computers and networking, communication skills, and ethics. The university also plans to introduce a reclassification of courses within the existing curriculum and relax the long rigid class selection system in order to afford students greater flexibility to pursue their interdisciplinary interests.

In 2015, NTU established the Stanley Wang D-School@NTU, which provides a rich and diverse offering of design courses. In the future, the university plans to integrate the resources of the Creativity and Entrepreneurship Program and NTU Garage as well as develop an investment fund and the NTU Accelerator Co. It is also working to transform the Shui Yuan Campus into an integrated creativity and entrepreneurship park. Executive Vice President Kuo says he has thrown himself fully into working with Executive Vice President Shu-Hsing Li and the NTU Accelerator Co., which, when combined with the resources of the NTU@Silicon Valley Center, will introduce entrepreneurship facilitation mechanisms directly from overseas and enable viable startups to smoothly achieve their potentials.

Kuo emphasizes that these resources will not be offered to only NTU students, as the university is considering making them available to off-campus entrepreneurs as well. Expressing his hope that NTU assumes a leadership role, the new executive vice president points out that the university's academic and research accomplishments as well as its academic resources all have the potential to create a positive influence on Taiwanese society.



President Yang Calls on Freshmen to Cultivate Interdisciplinary Capacities



The NTU Sports Center was filled with fresh faces in the afternoon of August 28 as the university welcomed the freshmen class of the 2016/2017 academic year by holding the First-Session Opening Day Ceremony and Freshmen Orientation Camp Opening

Convocation. All of the new students and faculty members in attendance wore class shirts specially designed for the occasion. Featuring an image of the NTU Main Gate and emblazoned with the letters "NTU," the shirts were designed to reflect the eternal qualities of our venerable alma mater.

The ceremony and convocation were held jointly in two separate sessions in order to accommodate the size of the freshmen student body; the second session was held on September 4. The events brought together students, parents, and faculty members for the purpose of celebrating the momentous occasion of the students' becoming NTU students.

The students and parents joined in amusing welcoming and orientation activities and attended information sessions and academic advisor forums designed to give them a deeper understanding of the operations and activities of NTU's colleges and departments. This year, in addition to university students, graduate students and their parents also participated in the Opening Day Ceremony, bringing greater scale and meaning to the event.

The scene of the Opening Day Ceremony unfurled as the new students, standing shoulder-to-shoulder in their identical shirts, practiced singing NTU's university song with youthful enthusiasm. The university presented the class shirts to the students as an expression of good fortune.

The shirt's eye-catching design was chosen from among student submissions by a vote of the NTU student body. The winning design emulated classic designs of prestigious universities in Europe and North America and coupled a welcoming image of the NTU Main Gate with the letters "NTU" in engraved lettering. The minimalist lines of the design mirrored the eternal qualities and classic atmosphere of the NTU campus.

NTU President Pan-Chyr Yang, who joined the students and faculty members in wearing the class shirt, opened the ceremony by welcoming the students and offering words of advice and encouragement.

President Yang called on the students to confront this era of knowledge explosion, warning that they would easily fall behind if they failed to keep pace with the expanding knowledge of times. Speaking as an NTU graduate himself, President Yang said the students must cultivate new empowering capacities and develop them throughout their lives, such as language, computer, communication, and creativity and design skills as well as their ethical character and aesthetic sensibility, adding that such abilities rely on an adeptness at working across disciplines that can be interactive any area of specialization.

President Yang pointed out that Uber, Facebook, and Pokemon Go have brought enormous breakthroughs and changes to contemporary society and wondered if members of the NTU community could innovate new business models by examining these examples and go on to establish novel approaches to providing solutions to social, environmental, and energy problems.

Special Report

President Yang also urged the first-year students to define goals for everything they study and to determine what problems they aim to solve by learning new skills. Finally, he emphasized to the students that, beyond their studies, they should make many friends because their friends might turn out to be partners that accompany them in their lifetime endeavors.

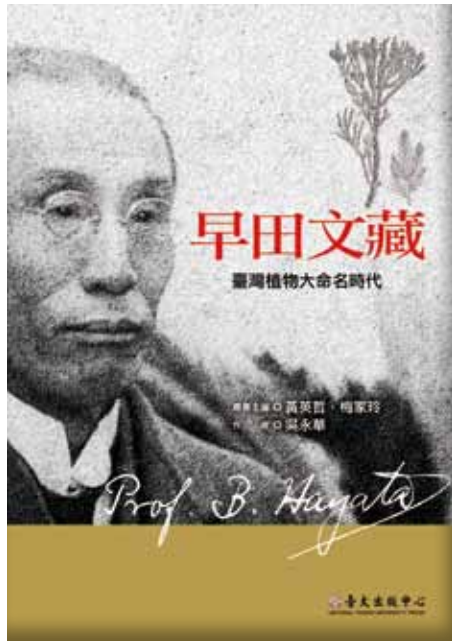
After President Yang presented awards to the students who had received the most votes in the class shirt design contest, NTU Student Association President Wei-Li Chou and Graduate Student Association President Yun-Ching Wu welcomed the students to become members of the NTU family and contribute their efforts to Taiwanese society. Following the speeches, the ceremony came to a rousing conclusion as the students sang the university song.

The day's events continued with the Opening Convocation of Freshmen Orientation Camp, during which Vice President for Student Affairs Tsung-Fu Chen jokingly urged the students to return from the virtual world to the real world, and encouraged them to apply the spirit of courageously advancing toward their targets they use to play Pokemon Go to finding their own true Pokemon in their real lives.



NTU held its first orientation camp in 2008 as a special way to welcome new students and help them adapt to campus life. Besides helping students complete class registration, health exams, and English proficiency evaluations, the camp offers a full range of practical and informative activities and programs that introduce campus resources and aim to impart the guiding concept of substituting learning in place of play. In 2012, the university added overnight stays and nighttime activities to the camp so that the student might form stronger bonds by living and studying together.





a collection of ten volumes that drew international acclaim for documenting thousands of plant species in Taiwan.

In his later years, he grew more involved with religion and philosophy and went on to develop a unique system for plant classification called the Dynamic System, which did not accept Darwin's theory of evolution and influenced countless later scholars.

The pioneering botanist played an major role in the history of the natural sciences in Taiwan, achieving his greatest accomplishments during the glory years of modern botany in Taiwan. The large conifer *Taiwania cryptomerioides* (Hayata, 1906) remains among the most well known of the plants he named.

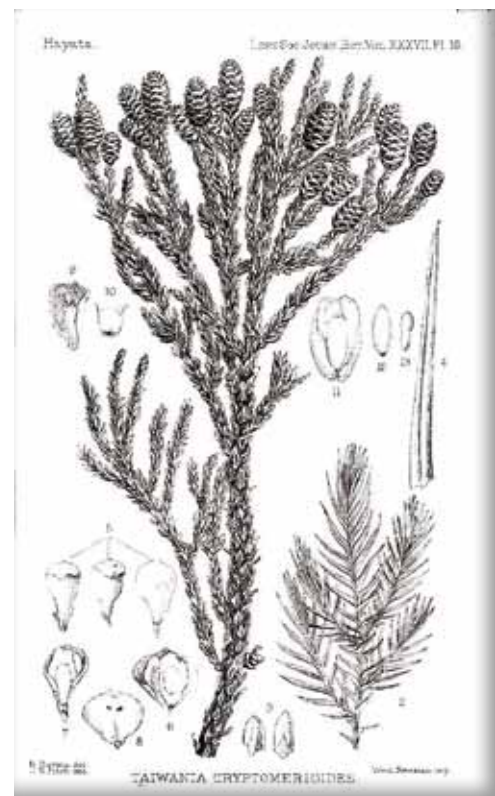
BIOGRAPHY SURVEYS LIFE OF JAPANESE BOTANIST WHO NAMED PLANTS DURING COLONIAL ERA

The new biography fills an important gap in our understanding of the long-neglected subject of the study of Taiwan's natural history during the Japanese colonial era.

Bunzo Hayata (1874-1934) is regarded as the founding father of the study of the flora of Taiwan for having given scientific names to 1,636 new taxa of plants from Taiwan. From 1905, when he took on a commission from the Japanese Governor-General of Taiwan to identify plant specimens collected by government botanists, to 1924, the Japanese botanist spent 19 years devoted to pursuing his profound fascination with the plants of Taiwan.

In August, NTU Press released the first biography of Hayata to be published in Taiwan. Titled *Bunzo Hayata: The Making of Plantarum Formosanarum*, the book surveys the course of the botanist's life, demonstrating how the atmosphere of the times he inhabited served to provoke his interest in botany and how a chance job led him to devote nearly two decades of his life to surveying and documenting the flora of Taiwan and become a major figure in the establishment of Taiwan's plant taxonomy.

Hayata focused on many aspects of botany, including taxonomy, morphology, anatomy, and cytology. Over the ten-year period of 1911 to 1921, Hayata compiled and published his masterwork, *Icones Plantarum Formosanarum*,



▲ A sketch depicts details of *Taiwania cryptomerioides* (Hayata, 1906)



DOCUMENTS AND ARTIFACTS TELL STORY OF AGRICULTURE'S FOUR-CENTURY HISTORY IN TAIWAN

The Agricultural Exhibition Hall hosted an opening ceremony and press conference for a special exhibition celebrating Taiwan's agricultural history on August 18. Titled "Agriculture is the Foundation of the Nation--Taiwan Agricultural Archives Exhibition," the exhibition featured fascinating historical documents and artifacts that told the story of the development of agriculture in Taiwan from the time of Koxinga nearly four centuries ago to the present day. The opening ceremony and press conference attracted an audience of more than 100 guests.

The exhibition was jointly organized by the Council of Agriculture, National Development Council, and National Archives Administration with support from NTU's Department of Bio-Industry Communication and Development, Department of Library and Information Science, Agricultural Exhibition Hall, and Committee of Agricultural Extension as well as additional help from the NTU Museums Group, College of Bioresources and Agriculture, and NTU Library.

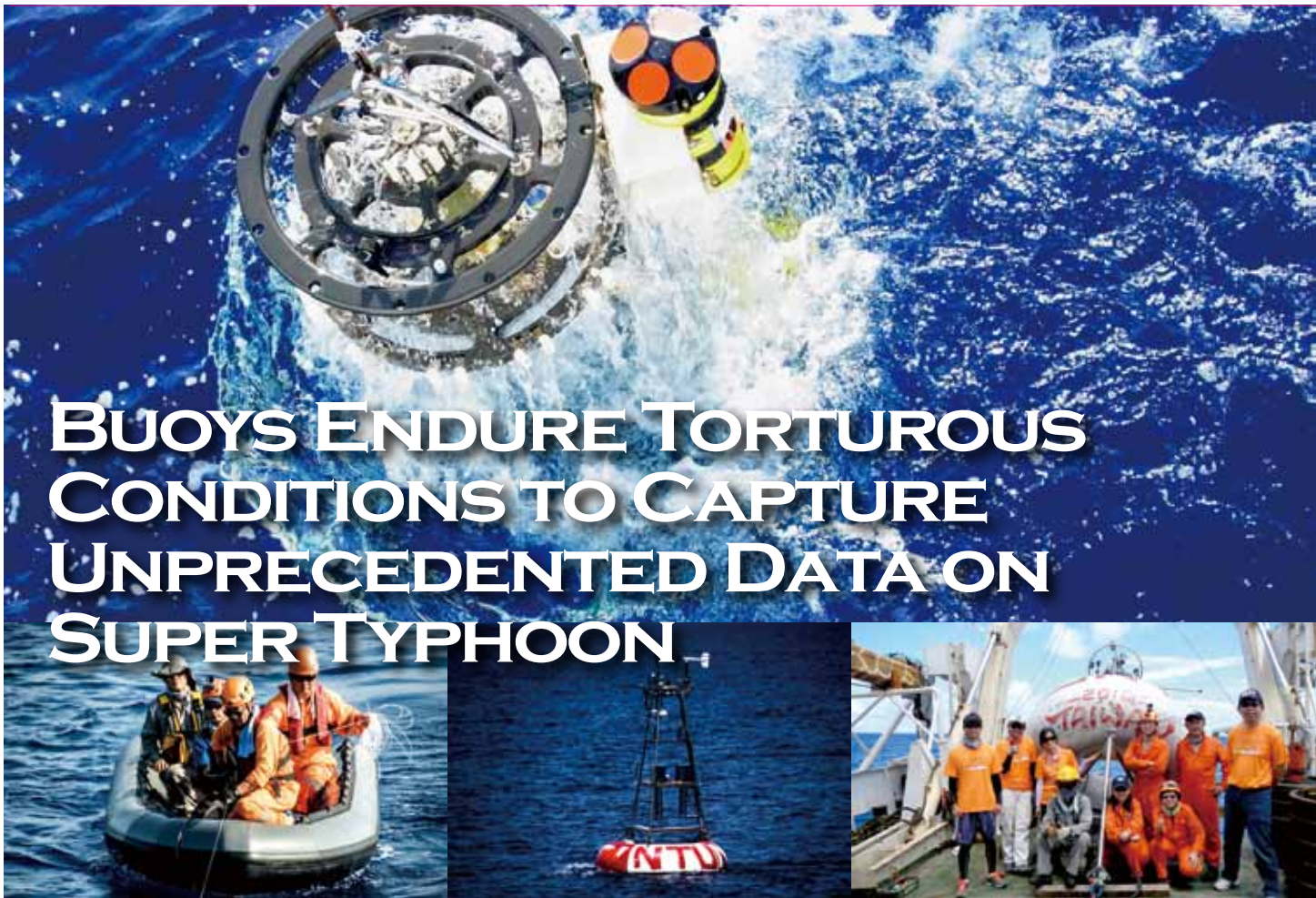
Aiming to create a connection with visitors of all ages, the exhibition presented numerous agricultural implements and recreations of farm life scenes from

Taiwan's past as well as that high-tech instruments that sustain modern agriculture in Taiwan.

Following the opening events, Director Hsiu-Ping Yueh of the Agricultural Exhibition Hall acted as a tour guide, leading the guests on a tour of the exhibition's documents and artifacts. As they took in the displays, the guests stopped in front of a historical reconstruction of a Joint Commission on Rural Reconstruction scene to take a group photo and sampled NTU milk and tea provided by the NTU Experimental Farm while checking out the exhibition's livestock and traditional tea displays. The visitors came away from the tour feeling nostalgia for the farm life of yesteryear as well as feeling amazement at the accomplishments of modern agriculture in Taiwan.

During the opening events, Director Hsiu-Ping Yueh reminded the audience that holding the exhibition in the Agricultural Exhibition Hall held special historical significance because, after the building's construction in 1964, it became the most important venue for agricultural diplomacy during the era of the Joint Commission on Rural Reconstruction.

Executive Vice President for Administrative Affairs Ching-Ray Chang added that agriculture is not only the foundation of the nation, but also the foundation of NTU as well, pointing out that the Faculty of Science and Agriculture played a crucial role in the early years of the university.



BUOYS ENDURE TORTUROUS CONDITIONS TO CAPTURE UNPRECEDENTED DATA ON SUPER TYPHOON

Two second-generation weather and ocean observation buoys that were designed and deployed by a team of researchers at the Institute of Oceanography endured torturous weather conditions to relay unprecedented real-time readings as a super typhoon crossed their positions hundreds of kilometers off the southeast coast of Taiwan in early July.

After forming as the first powerful typhoon in the Northwest Pacific Ocean this year, Typhoon Nepartak headed towards Taiwan, delivering intense winds and torrential rainfall. Described as the strongest first typhoon of the year in history, Nepartak impacted Taitung County on July 8, causing over NT\$700 million in losses. As disaster relief efforts continued in the typhoon's aftermath, weather forecasters once again became the target of criticism for the inaccuracy of their typhoon forecasts.

The Institute of Oceanography team had set off aboard the NTU research vessel Ocean Researcher I to deploy the observation buoys at the end of June. Led by Prof. Yiing-Jang Yang, the mission was aimed to provide real-time data to weather forecasting organizations to improve the accuracy of typhoon forecasting.

Based on historical records of typhoon paths, the team chose to position the buoys 175 kilometers to the east and 375 kilometers to the southeast of the southern tip of Taiwan. Within a week of the deployment, Typhoon Nepartak formed and began to develop into a super

typhoon as it veered towards Taiwan, the buoys moored directly in its path.

On July 6, as the typhoon encroached on the more eastern buoy, called NTU 1, the researchers remained glued to their monitors as the data rolled in. They immediately sent the valuable data to weather forecasters at the Central Weather Bureau who were tracking the typhoon.

Approaching from the north, Typhoon Nepartak skirted past NTU 1. At the typhoon's closest point, the buoy's instruments recorded an air pressure of 940 hPa and maximum wind gusts of 41 meters per second. The data also showed that the typhoon's extreme agitation of the upper layer of the ocean caused the seawater temperature to fall sharply from 31°C to 28°C.

Just a few hours later, as the team continued to track the startling intensity of Typhoon Nepartak, the storm's eye passed just seven kilometers to the south of the buoy named NTU 2. Wind speeds reached a maximum of 44 meters per second, while the air pressure dropped below 900 hPa at one point. These powerful winds caused the upper 150 meters of seawater to churn and mix thoroughly.

The amazing in situ real-time data captured by the buoys set numerous precedents in the history of typhoon observation. International buoy observation specialists, besides recognizing the value of the data, praised the buoys for their demonstrated durability in surviving the ravages of a super typhoon.

Honors

Seven NTU Faculty Elected New Academia Sinica Academicians

Seven NTU faculty members are among the new academicians elected to Academia Sinica in 2016.

In the Division of Mathematics and Physical Sciences: Distinguished Chair Prof. Tai-Chang Chiang, Department of Physics; Prof. Sun-Lin Chung, Department of Geosciences; Prof. Chung-Yuan Mou, Department of Chemistry; and Distinguished Chair Prof. Fan Chung, Department of Mathematics; in the Division of Engineering Sciences: Prof. Lin-Shan Lee, Department of Electrical Engineering and Computer Science; in the Division of Life Sciences: Distinguished Chair Prof. Howard Yuan-Hao Chang, Graduate Institute of Clinical Medicine; and in the Division of Humanities and Social Sciences: Jointly Appointed Prof. Yu-Shan Wu, Department of Political Science.



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1 Prof. Tai-Chang Chiang

2 Prof. Sun-Lin Chung

3 Prof. Chung-Yuan Mou

4 Prof. Fan Chung

5 Prof. Lin-Shan Lee

6 Prof. Howard Yuan-Hao Chang

7 Prof. Yu-Shan Wu



▲ Department of Mechanical Engineering students Hung-Chen Yu (left), Chien-Yen Hsu (second from right), and Chih-Yu Chen (right) are all smiles after winning the Best Overall Simulation award in the ASME Innovative Design Simulation Challenge.

A team of three juniors from the Department of Mechanical Engineering won the Best Overall Simulation award in the commercial software category in the ASME Innovative Design Simulation Challenge (IDSC) this year. Organized by the American Society of Mechanical Engineers, the annual competition attracts outstanding mechanical engineering students from elite universities around the world.

Chih-Yu Chen (team leader), Hung-Chen Yu, and Chien-Yen Hsu traveled with their faculty advisor Prof. Jia-Yang Juang to Charlotte, North Carolina, in the United States to join the other finalists in presenting their entries before a panel of judges on August 21. The NTU team claimed the competition's top award for their simulation "Soft Transformers: A Versatile Platform for Extreme Shape Transformation."

Relying on design methodology and advanced computer simulations, the Soft Transformers

SHAPE- CHANGING SOFT TRANSFORMERS WINS DESIGN SIMULATION COMPETITION

simulation investigated the possibility of producing major shape changes by warping a simple flat two-dimensional design into a complicated three-dimensional structure. The students also developed their own platform to verify their simulation.

The team's design simulation method and platform has potential applications for manufacturing intricate three-dimensional objects. Moreover, this type of concept can serve in the development of "soft robots" that use the transformation of soft materials to achieve movement. This would enable designers to avoid the complicated metal structures and joints of traditional robots.

Of the three competition categories at the IDSC this year, the commercial software category drew the most entries and witnessed the most heated competition. Twelve finalist teams were selected by a panel of judges from entries submitted online in the preliminary round.

During the final round in Charlotte, each team was required to present their design concepts and results and respond to queries from the judges entirely in English. The NTU students demonstrated courage and team spirit as they discussed the ideas, innovations, and theory that went into their project on a major international stage.

SUMMER PLUS STUDENT ADVISORS SEE LARGER WORLD WITHOUT LEAVING CAMPUS

NTU Plus Academy offers customized short-term programs that allow international students to experience such topics as art, Mandarin learning, laboratory research, natural sciences, social sciences, and law while living in Taiwan.

Since its introduction in 2010, the Plus Academy has continued to grow in popularity year by year. This year's Summer Plus Programs enrolled a record-high 396 students from 34 countries, 20% more than last summer.

Yet, it is not only international students who expand their knowledge and experience through the program. Local students who work with the program also enjoy the opportunity to broaden their international outlook by spending time with students from around the world.

This summer, the Office of International Affairs recruited and trained nine local students to serve as student advisors tasked with helping the program's international students adapt quickly to their new environment, experience Taiwanese culture, and interact with local students. The student advisors provided daily living and academic support to the international students and assisted in the organization of such activities as cultural excursions. The OIA also arranged for the advisors to live along with the international students in Shui-Yuan Dormitory so that they would remain available to provide immediate assistance and could develop closer friendships with their new friends from abroad.



▲ Students from different countries put their enthusiasm into their performances on Culture Night.

During the program's Farewell Party at the end of August, the NTU students who worked as Summer Plus advisors for two months this summer drew praise from the program administrators and instructors. The student advisors also spoke of how the program helped them see a larger world without leaving campus and even experience breakthroughs in their own personal growth.

Student advisor Huang-You Chen, a junior majoring in foreign languages and literatures, said he learned confidence and courage through the program. He said he experienced personal transcendence by gradually changing from being an extremely shy person who was afraid of talking to unfamiliar people into the person who served as the emcee for the Farewell Party.

Pei-Chun Kao, a junior majoring in law, and Ju-Chi Chen, a junior majoring in library and information science, both worked as advisors with mainly students from China. They lauded Summer Plus for creating opportunities for people from different cultures and historical backgrounds to come together on the NTU campus and engage in free conversation and exchanges.

Chyi Su, a senior majoring in physical therapy who is attending Waseda University as an exchange student this semester, recalled with pleasure how the program filled her with a sense of accomplishment by rolling a summer camp, travel, and work all into one.

DELEGATION SEEKS STUDENTS AT TAIWAN'S FIRST EDUCATION FAIRS IN MYANMAR



▲ NTU alumni from Mandalay, Myanmar

Deputy Vice President for International Affairs Bennett Fu and Office of International Affairs Manager Lily Hsu represented NTU at the first higher education fairs to be organized by Taiwan's Ministry of Education in Myanmar this past July. Coordinated by National Chi Nan University, the 2016 Myanmar-Taiwan Higher Education Fair was held in the cities of Yangon and Mandalay during July 2-7. Thirty-six Taiwanese institutions of higher education participated in the two fairs.

NTU took part in the events in step with the central government's New Southbound Policy. In addition to seeking outstanding international students to recruit, the university's goals also included establishing ties with NTU alumni in Myanmar.

The trip marked the first time that an MOE delegation has visited Myanmar since Taiwan extended visa-free entry to Myanmar citizens in March. Due to remaining restrictions on promotional activities in Myanmar, the organizers did not publicize the fairs through the local media, but relied instead on Facebook and other Internet channels, the University of Yangon and University of Mandalay, and NTU alumni and ethnic-Chinese schools in Myanmar.

Both fairs drew remarkable turnouts and the NTU booths enjoyed a steady stream of students who were eager to learn about NTU. Most of the students who attended the fairs were second- and third-year high school students and students of ethnic-Chinese schools. Medicine, management, and chemistry were the fields of student that the students expressed the most interest in entering.

Numerous NTU alumni in Myanmar turned up to assist the NTU delegation during the fairs. Most of these alumni were overseas ethnic-Chinese students who had graduated from NTU. As the NTU Alumni Association of Myanmar had just been established in June, the two fairs provided the first opportunities for contact between the association and NTU and so more alumni were enticed to join the association. The association's influence will help to raise the visibility and image of Taiwan and NTU in Myanmar.

While in Myanmar, Deputy Vice President Fu also met and exchanged words of encouragement with representatives of ethnic-Chinese schools, including Mandalay Confucius School, Lashio Guo Wen Chinese School, and Myitkyina Yu Cheng High School. These schools offer instruction in traditional Chinese characters and promote Chinese culture, so their graduates are proficient in Mandarin and well qualified to attend university classes in Taiwan.

NTU has not admitted any students from Myanmar for the last five years due to visa restrictions in Taiwan. Having broken the ice with the delegation's visit, however, NTU looks forward to developing closer ties and cooperation with the NTU Alumni Association of Myanmar in the effort to attract Myanmar students to study at NTU.

International Corner



Office of International Affairs student interns from the University of Southern California have a good time with other international students on Culture Night.

USC Interns Gain Real World Experience Working with OIA Staff

The Office of International Affairs continued its fruitful partnership with the University of Southern California's Global Fellows Internship Program this summer by hosting four outstanding USC interns with backgrounds in liberal arts, public policy, economics, and finance. The interns worked alongside their OIA colleagues for two months, sharing their learning experiences and offering innovative ideas. Through the eight-week internship program, they gained in-depth knowledge concerning international short-term programs, global alliances in higher education, and regional higher education.

Reflecting on her internship experience, Stephanie Kuwornu said that working overseas was a great opportunity because she gained professional as well as cultural experience. She also expressed gratitude that her first internship abroad was at NTU. While at the OIA, Ms. Kuwornu worked on branding and marketing initiatives for the SoNTU line of university merchandise. She also conducted research and made recommendations regarding potential exchange programs in Southeast Asia for NTU students.

Krystal Chavez said she appreciated that the internship program gives students a chance to immerse themselves in the cultures in which they are placed, all while learning to adjust to a new work environment. She helped the OIA by studying the factors that attract students to study-abroad programs and how NTU can

create its own successful internship program for international students.

Natalie Reyes pointed out that interning abroad allows students to strengthen their communication and problem solving skills as well as become more adaptable and flexible in this interconnected global age. Pleased that the program allowed her to meet renowned faculty members while at NTU, Ms. Reyes said she could see herself potentially expanding her research to outside of the United States in the future.

Eric Bae confessed he would be lying if he said his internship abroad had not been the best experience of his life. Not only was he able to immerse himself in Taiwanese culture, which he said he absolutely fell in love with, but he also gained his first real world professional work experience. Mr. Bae said he knew immediately on his first day that he was teamed up with a supportive and sincere group of peers and supervisors because they promptly helped him adjust to the sweltering heat and new office culture.

During the summer, the USC interns also enjoyed themselves outside the office by taking part in a wide range of campus activities. They made valuable contributions to the OIA by providing their perspectives on such topics as higher education in ASEAN nations, the internationalization of degree programs, higher education in the Middle East and North Africa, and international internship programs.



- ◀ The remains of a collapsed house at the Lajia village site
- ▼ Prof. David J. Cohen and his student advisees



STUDY UNEARTH SCIENTIFIC SUPPORT FOR LEGENDS OF CHINA'S GREAT FLOOD AND FIRST EMPEROR

Prof. David J. Cohen of the Department of Anthropology recently participated in a study that excavated materials that provide potential archaeological support for the historicity of the old legends of a Great Flood and the founding of China's first dynasty by Emperor Yu. Their report, "Outburst flood at 1920 BCE supports historicity of China's Great Flood and the Xia dynasty," published in the August 5 issue of *Science*, captured the attention of anthropologists and news outlets around the world. The study involved a geological survey of the upper reaches of the Yellow River in Qinghai Province, China, that revealed that an enormous flood had engulfed the Yellow River basin around 1920 BCE. The deluge was estimated to rank among the largest freshwater floods in the world of the last ten millennia.

While undertaking their dig, Prof. Cohen and his colleagues reconstructed a series of natural events that led to the outbreak of the flood. Indications show that a powerful earthquake caused a massive landslide that drove debris into the Yellow River, creating a natural dam. Spanning the river gorge, the dam of debris blocked the river's flow and eventually created a deep lake. Unable to withstand the pressure of the lake water, the dam suddenly gave way, releasing an enormous volume of water that caused catastrophic flooding down the Yellow River basin.

Based on a comparative analysis of the timing, force, and impact of the flood, the team surmises that this natural phenomenon was the historical basis for the tales of the Great Flood and Emperor Yu taming the flood and establishing the Xia dynasty that were handed down in traditional legends about the origins of ancient Chinese civilization.

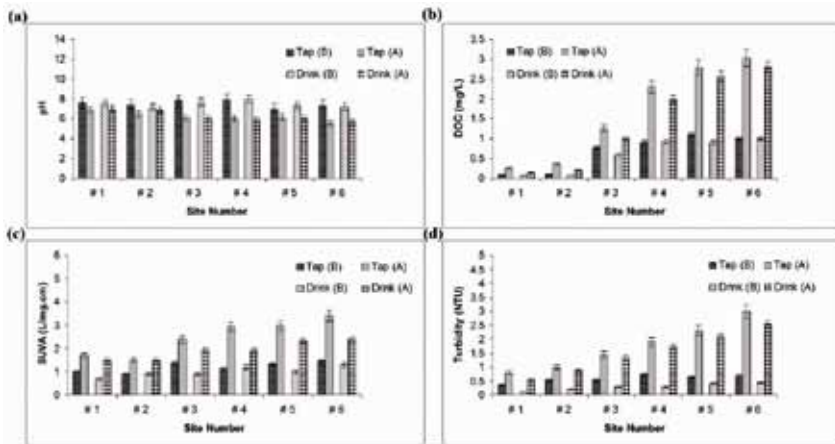
Twenty-five kilometers downstream from the dam, the village of Lajia was destroyed by the earthquake and subsequent landslides which toppled homes, burying the village residents alive. The area was then inundated by the devastating floodwaters. This human tragedy provided the researchers with crucial data that allowed them to determine the timing of the flood. Radiocarbon dating performed on the skeletons of three children buried in the village showed that the children had died in about 1920 BCE.

Furthermore, the team identified fissures caused by the earthquake that remained filled with floodwater sediment. Analysis of the layers of sediment provided an estimate of the river's flow rate and indicated that the flood occurred during the dry season, dating it to within a year after the earthquake.

The river gorge was 1.3 kilometers wide and 249 meters high at the site of the dam. Prof. Cohen and his research partners estimate that, prior to the dam's collapse, the lake had accumulated six to nine months of the Yellow River's flow, reaching a depth of 185 to 210 meters. They estimate that, when the dam finally burst, the enormous volume of water it had held back inundated the downstream basin of the Yellow River and its tributaries for a distance of 2,000 kilometers.

Research Achievements

STUDY REVEALS HARMFUL IMPACTS OF TYPHOON RAIN ON DRINKING WATER SAFETY



▲ pH (a), DOC (b), SUVA (c), and turbidity (d) variation before (B) and after (A) typhoon Soudelor at the six studied sampling sites

A team of researchers led by Prof. Shang-Lien Lo, a distinguished professor of the Graduate Institute of Environmental Engineering, recently conducted the world's first study to look into the effects of heavy short-term rainfall delivered by a super typhoon on the quality of municipal drinking water. The study report drew international attention when it was published under the title "Impacts of Typhoon Soudelor" (2015) on the water quality of Taipei, Taiwan" in *Nature-Scientific Reports* in April.

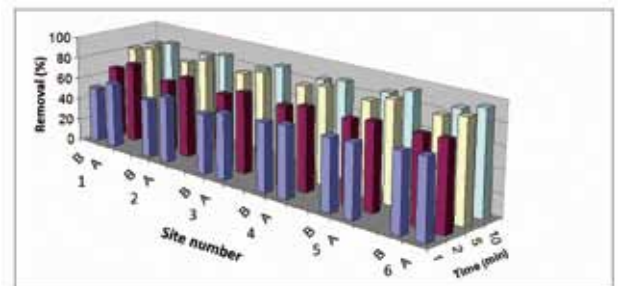
While previous research studies had investigated long-term changes in concentrations of carcinogenic disinfection by-product (DBP) precursors in water sources, the effects of DBP precursors or dissolved organic matter (DOM) precursors on the water quality of reservoirs during short-term torrential rains had not been examined.

As scientists still do not fully understand changes in DBP precursors and DOM characteristics caused by surface erosion during torrential rains and extreme weather conditions, it is important that further research be conducted on the relationship between DOM concentrations and DBP formation potential during periods of heavy rain.

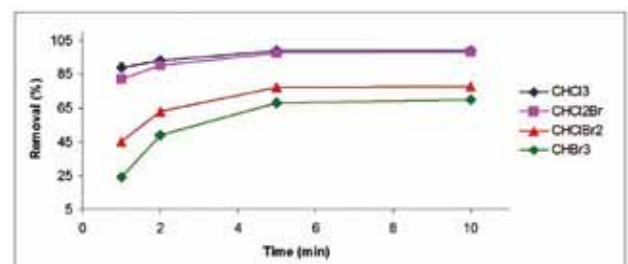
Two-days before and two-days after Typhoon Soudelor, which hit Taiwan on August 8, 2015, a member of Prof. Lo's team collected samples of drinking water from taps and public drinking fountains fed by water mains from the Zhitan Purification Plant to measure levels of pH, turbidity, dissolved organic matter (DOC), specific ultraviolet absorbance (SUVA), and total trihalomethane (TTHM). The results revealed that TTHM, DOC,

and SUVA rose dramatically by 40% to over 200% in the samples taken after the typhoon compared with the samples taken before the storm, severely impacting the safety of the drinking water.

However, the team also demonstrated that boiling could be an effective strategy for lowering THM in drinking water. Although a two-minute boil achieved a removal rate of only 45% for the THMs bromoform (CHBr_3) and chlorodibromomethane (CHClBr_2), a five-minute boil cut TTHM by 70%.



▲ The effect of boiling time on the removal efficiency of TTHM in tap water samples before (B) and after (A) typhoon Soudelor



▲ Effect of boiling time on removal of each THM species in post-typhoon tap water samples

SOCIAL SERVICE CLUB HELPS SCHOOL STUDENTS IN REMOTE SOUTHWEST CHINA



◀ Models of mouths crafted by students share their smiles following a dental hygiene class.

child who at first could only roll a ball of clay, to my surprise, soon molded a star covered with curious animals and plants."

Menglian Comprehensive Elementary School is situated an arduous twelve-hour drive beyond Tengchong City in the far west of China's southwestern province of Yunnan. Living closer to Myanmar than to Yunnan's capital, Kunming, the school's students occupy a remote area of a remote province.

This summer, members of the NTU Social Service Club teamed up with their counterparts from the social service clubs of China's Peking University and Yunnan University for the purpose of organizing five days of fun and educational classes for more than one hundred students who attend the remote school. The classes covered a wide range of subjects, including music, art, and science as well as hygiene and world history.

A member of the NTU club surnamed Mo, who was in charge of the service project, said the purpose of the project was to provide the students with information they would not normally encounter in their regular school classes and daily lives. While the NTU students were surprised that the elementary school offered no music or art classes, they found it even harder to imagine that the school's students live in an environment in which there are very few Internet media offerings.

For many of the elementary school students, the project gave them their first opportunity to learn musical notes and scales. It also gave them their first opportunity to sculpt clay and make sketch and paint pictures. Club member Mo said that, although the students got off to a bumpy start in the music and art classes, as practice makes perfect they were soon able to give expression to their creativity. Mo said, "With a little instruction and guidance, one

Not only do the students lack regular art and music classes, they also face limited access to outside information and stimulation. A member of the NTU club surnamed Wong, who had volunteered for two previous club service projects in remote areas of China, said, "The only occupations the local children can imagine are singer and soldier, because that is what they see on television. Besides that, there are just the occupations of their parents, that of farmer or road paver." Wong believes that the service project helped to open the children's imagination to new possibilities for their future, not only through the art and music classes, but also through the science and hygiene classes.



▲ Social Service Club members lead a world geography class.

Teaching and Learning



International Speakers to Help Students Develop Global Leadership Skills



The Career Center is launching the Global Leadership for Tomorrow program this semester. Scheduled to be held in three sessions, the program aims to help students develop their capacity for leadership and expand their international outlook. The sessions will be conducted in English and are open to all local and international NTU students.

Global leaders from multinational companies have been invited to share their valuable experience and insights in management and leadership. The speakers will help to strengthen the students' knowledge of international leadership, personal branding, and cross-cultural communication.

The first session will be held on October 20. During the session, speaker George Hallenbeck, group director of global product development at the Center of Creative Leadership in the United States, will share his ideas concerning "The Fundamental Four Leadership Competencies for New Leaders."

The second session is scheduled for November 17. Clare Forrester, the group learning and training director, Asia, of the AS Watsons Group, will discuss "How to Build Your Personal Brand."

The invited speaker for the third session, to be held on December 1, is Peter Hatti, the site leader of the Hsinchu factory of Pfizer (Taiwan). He will address the topic, "Developing a Global Mindset."





New Master's Program Cultivates Sports and Fitness Professionals

The Department of Athletics began recruiting students for its new Master's Program for Sports Facility Management and Health Promotion during the 2016 academic year. The program integrates research resources from such professional and academic fields as management, medicine, and social sciences and focuses on areas that demonstrate future development potential and competitiveness.

In line with NTU's university affairs development plan, the foremost goals of the Master's program are to develop students' professional capacities in the field of sports facility management and health promotion and establish the university as a leading teaching and research institution for sports facility management and health promotion in Taiwan.

Courses are designed in consideration of current trends in the domestic sports and physical fitness industries and existing social conditions and aim to achieve the Physical Education Office's mission to integrate knowledge and technologies from across different disciplines. The program uses holistic education to cultivate service professionals for the sports and fitness industry as well as academic training to educate scholars for higher education.

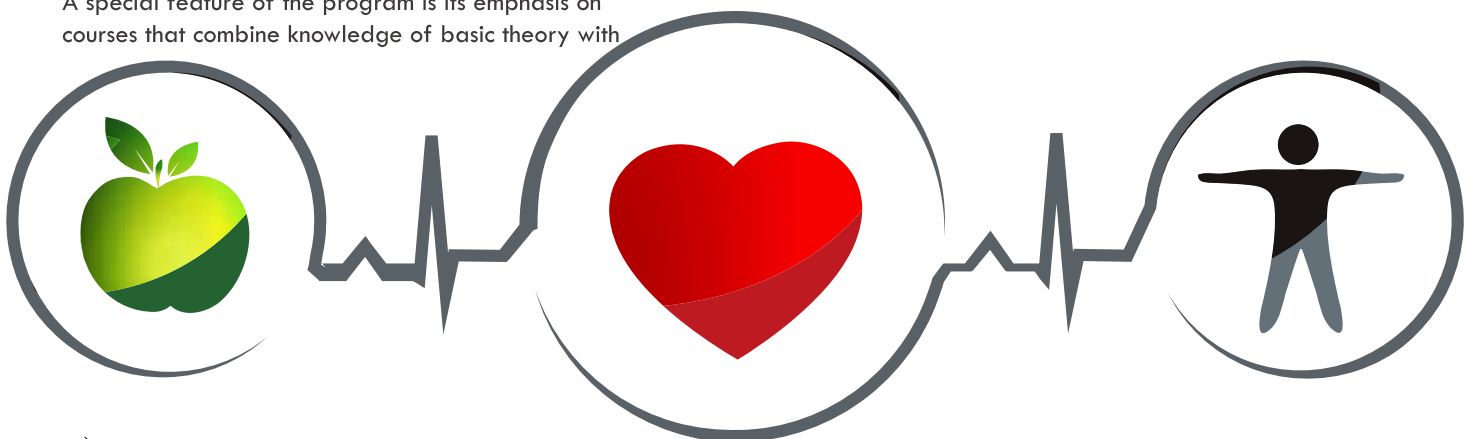
A special feature of the program is its emphasis on courses that combine knowledge of basic theory with

real world applications in order to enhance the connection between academics and practice.

The program offers courses covering basic theory in academic subjects related to the physical fitness industry in order to cultivate students' academic knowledge. In addition, it coordinates with the operations of the NTU Sports Center in order to assign students real world projects through which they can develop their project management skills and gain practical experience.

The program's industry internships primarily involve the operation of the NTU Sports Center and the planning of recreational activities and sporting events. Performed in tandem with a series of academic courses, the internships help students establish professional skills and develop their awareness of practical knowledge and issues.

Aiming to promote industry-academia cooperation and strengthen students' professional knowledge and real world performance, the Master's program also arranges for students to perform internships at enterprises operating in the physical fitness industry and takes advantage of team teaching that puts students in direct contact with the industry.





Students Organize Largest Hackathon in Asia



▲ The awards ceremony of the 2016 HackNTU

The 2016 HackNTU was held at the NTU Sports Center during August 19-21. Jointly organized by the Taidah Entrepreneurship Center and HackNTU Student Preparatory Team, the three-day/two-night hackathon attracted over 600 participants from around the world, including students as well as industry professionals, which made it the largest hacking event in Asia.

On the third day of the event, 160 teams presented their hacking projects before a panel of judges. In the end, the judges selected thirteen teams from across the five competition categories of gaming, financial technology, smart living, social design, and blockchain and big data to present their demonstrations on stage.

HackNTU is a non-profit community established by students that promotes world exploration and the application of technology to innovate solutions for the world's problems. HackNTU held the first hackathon at NTU, which was also the first student-organized hacking event in East Asia, in 2013.

Hackathons have gained popularity in Taiwan in recent years. These events have expanded beyond the world of techies to incorporate elements from diverse fields and address social issues, such as education, community service, and citizen participation.

Besides receiving support from the university, the 2016 HackNTU also enjoyed the support of numerous corporate sponsors, including Chunghwa Telecom, Cathay Financial Holding, TutorABC, CTBC Bank, Nogle, and Samsung Taiwan. Moreover, government agencies, including the Taipei City Government, the Information Management Center of the Ministry of Economic Affairs, and the Food and Drug Administration of the Ministry of Health and Welfare, also played an active role in the hackathon. This trilateral support of academia, industry, and government helped to ensure the success of the event.



Taipei City Government to Join Azalea Festival

The NTU Azalea Festival will celebrate its 20th anniversary next March. Besides extending special invitations to NTU alumni who graduated 50 years ago to return to campus for the festival, NTU President Pan-Chyr Yang also reached an agreement with Taipei City Mayor Ko Wen-je under which the Taipei City Government will work together with the university in organizing the month-long event.

The city plans to participate in the festival by offering cultural events and guided city tours and displaying imagery of azalea blossoms.

President Yang is optimistic about the city government's involvement. Pointing out that the NTU campus is open not to only NTU students and faculty but is a resource for all people in Taiwan, President Yang extends a warm welcome to the general public to visit the campus during the Azalea Festival.

President Yang says the campus has much to offer the public, from beautiful natural scenery to public art and guided tours offered by the NTU Museums Group.



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