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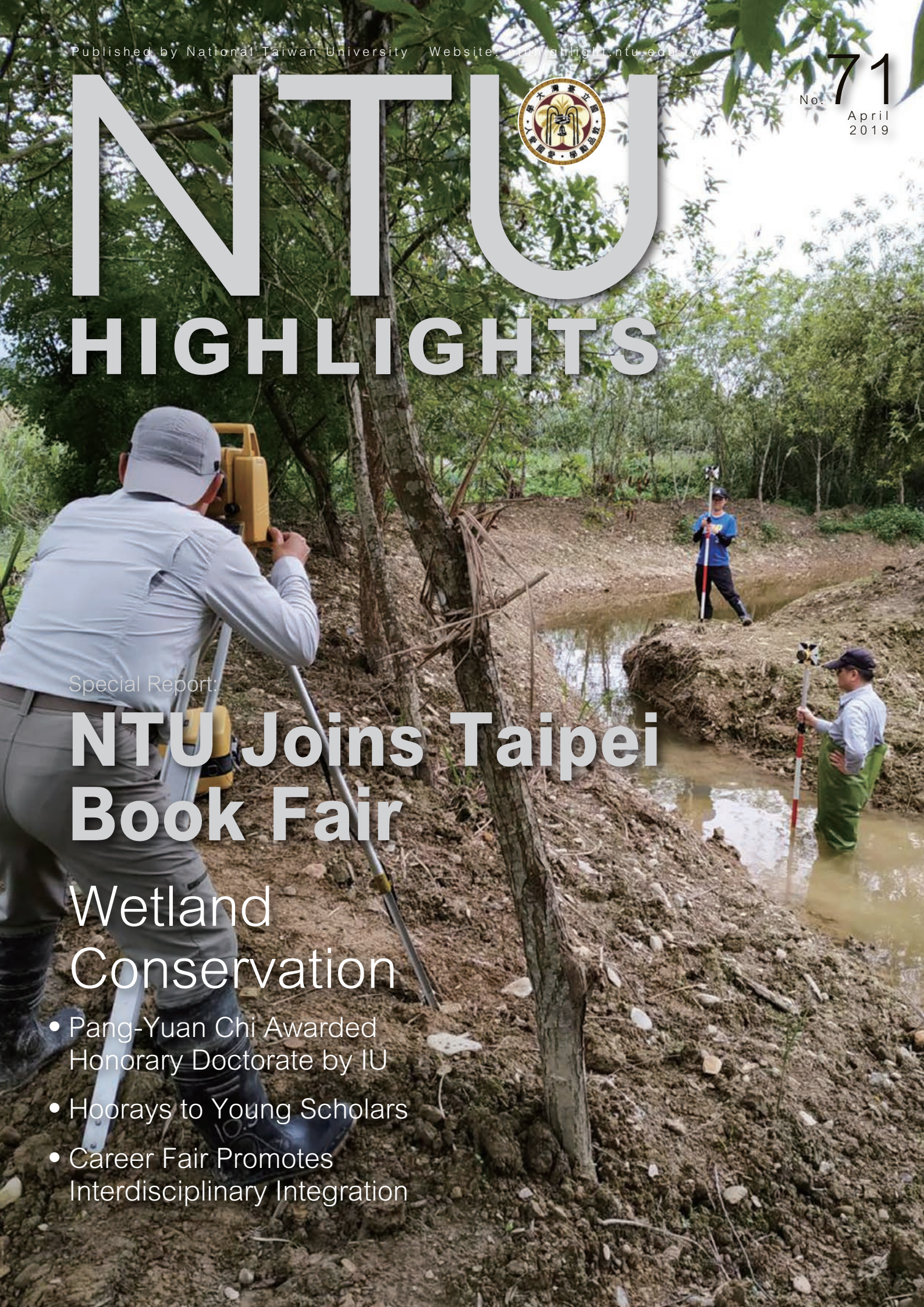

Special Report:

NTU Joins Taipei Book Fair

Wetland Conservation

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- Career Fair Promotes Interdisciplinary Integration

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‘Let Us Put NTU on the Map,' Proclaims Executive Vice President Chiapei Chou

Internationalization has always been a major mission of National Taiwan University (NTU). The number of international partnerships and students participating in our exchange programs has increased annually. NTU currently provides more than 1400 exchange slots per academic year that allows more than one-third of our undergraduate students to have the opportunity to study abroad. This growth in our international partnerships has contributed to the enrichment of education and research with our partner universities around the globe. The Office of International Affairs (OIA) is dedicated to creating new opportunities for international collaboration, aiming to put NTU on the map. This goal can be pursued in a variety of ways. Besides enhancing the student exchanging programs, NTU also has signed dozens of international Dual Degree agreements with world renowned universities that not only involve the students’ academic degrees but also the researcher’s profound collaborations.

As to academic research, we have demonstrated our research potential and participated in such major international organizations as the Association of East Asian Research Universities (AEARU) and the Association of Pacific Rim Universities (APRU). The school fully supports the organizing of international conferences, helping our units become the research hubs in leading academic organizations, further enhancing NTU’s academic luster and global visibility.

The OIA also improves the quality of education by establishing international programs that are operated in accordance with the Sustainable Development Goals of United Nations and making sure the different programs address a wide range of different goals. A typical example is the Global Innovation Joint-degree Program with The University of Bordeaux and The University of Tsukuba, designed to cultivate and train more agro-biomedical talents. Program students from the three partner universities pay their tuition through their home institutes but study abroad together, moving from campus to campus to receive more comprehensive academic and research training. We have observed solid win-win achievements for the university partnerships as well as for the students.

In our efforts to enhance NTU’s competitiveness, we seek to recruit the best talents. For example, we host NTU admission seminars in Southeast Asia and Taiwan and encourage the exchange of ideas between our President and principals of local high schools. Our goal is to help the students understand the resources that NTU has to offer and attract the top students to study here. Through our commitment, devotion, and hard work, we aim to make NTU’s academic strengths and research capabilities known to the world. Moreover, the OIA staunchly supports our professors, providing them with the necessary resources to conduct their research on an international scale. We sincerely hope that students from home and abroad will recognize NTU’s values and strengths and regard NTU as their top choice.

Executive Vice President Chiapei Chou

Fun NTU, Azaleas in Full Bloom!

In the month of March, the gentle breezes and warm sunshine ushered in spring, and the azaleas on the NTU campus exploded like fireworks-- as if to celebrate the arrival of NTU's annual Azalea Festival. This year, the theme of NTU's Azalea Festival was: Fun NTU, Azaleas in Full Bloom. The Festival was launched on March 16 during a ceremony presided over by NTU President Chung-ming Kuan. The Department Expo and Student Club Expo were formally launched on the same day, with dance performances by the NTU Pop Dance Club and NTU Ballroom Dancing Club.

Every year a plethora of activities are held at NTU during March, including campus tours, maker workshops, farm visits, lectures, exhibitions, and performances. The events bring thousands of high school students and their parents as well as the general public to the NTU campus. This year the Department Expo was held at the Sports Center, providing prospective students with the latest and most detailed information about the various departments at NTU. The Student Club Expo took place at the plaza in front of the Sports Center, Banyan Avenue and Fan Palm Avenue, showcasing NTU students' artistic flair, cultural competence, and proactive attitude towards extracurricular activities.

Adding to the festive atmosphere of the Azalea Festival, NTU sponsored a series of events to draw attention to the beauty of azaleas. Professors and students of the Department of Horticulture offered themed walks around the NTU campus, giving visitors a chance to learn about the culture, history and azalea species on campus. Volunteer student ambassadors offered cultural and historical tours of NTU. The NTU Experimental Forest put on an exhibition at the Agricultural Exhibition Hall demonstrating how furniture and utensils are made from domestic timber and bamboo. Special souvenirs, such as coasters designed for the NTU Azalea Festival, were offered for sale. The NTU Farm presented DIY sessions to teach people how to make panna cotta, Irish soda bread, as well as DIY classes for raising bonsai trees and potted succulents. Farm visits were also offered and visitors were invited to experience the life of a vegetable farmer toiling away in the fields. Fresh livestock products, farm products, and garden products were also sold on campus.

A calligraphy exhibition showcasing the award-winning works of calligraphy by NTU students was held at NTU's History Gallery. The Graduate Institute of Art History and NTU Library co-organized the exhibition, "Reflection of Huai-Su's Autobiography," to present the reproduction and creation of the calligraphy paradigms via rubbings and the calligraphy of the Ming and Qing dynasties, high-resolution full-scale reproductions, and modern calligraphic works. The 2018 Openbook award-winning books in Taiwan were also put on display at the NTU Library, as well. The main library of the NTU Library opened its doors to visitors aged 12 or above without requiring visitors to apply for a temporary card from March 16-17 to celebrate the NTU Azalea Festival.

NTU's Center for Artificial Intelligence and Advanced Robotics (AIROBO) hosted a series of activities on March 16 at the Barry Lam Hall during which speeches were given by prestigious researchers and scholars in the morning, followed by an Open House Day in the afternoon, giving the public a glimpse into the exciting research taking place at the AIROBO.

Known as the "City of Azaleas," NTU is famous for the abundance of azaleas. The colorful and vibrant azaleas have become synonymous with NTU. The NTU Azalea Festival was first organized in 1997 along with the Department Expo and Student Club Expo to offer aspiring high school students an experience of the top university in Taiwan. The Azalea Festival has evolved

The opening ceremony of the 2019 NTU Azalea Festival

over the years into a multi-faceted festival embodying vitality, youth, art and culture, nature, technology, and intellectual pursuits.

Every year countless students and the general public alike attend the myriad activities and events of the NTU Azalea Festival to experience the varied and stirring ambiance of the university, to have fun, to learn, and just to enjoy the beautiful NTU campus. Thanks to the NTU Azalea Festival, the blooming azaleas on campus no longer belong exclusively to NTU. The general public can also enjoy what NTU has to offer. And NTU also has the opportunity to open its doors to the general public in the spirit of openness and magnanimity.

Mascots

Academia Sinica and National Taiwan University Join Forces at the Taipei Book Fair

Academia Sinica and National Taiwan University Press collaborated in hosting a joint book exhibition titled, "When Academics Converged in a Garden," at the 2019 Taipei International Book Exhibition from February 12-17.

Both Academia Sinica and National Taiwan University were founded in 1928, and the two institutes of higher learning have long been the two pillars of academic research and teaching in Taiwan. The two institutes joined forces in at the TIBE to harness resources and share knowledge with the reading public. The joint exhibition also showcased Taiwan's recent academic publications.

Addressing the opening ceremony of the exhibition, NTU President Chung-ming Kuan said that this joint venture between Academia Sinica and NTU Press represents the academia's firm resolve to contribute to society in a positive way, to step out of the ivory tower and assume social responsibility. Knowledge can be transmitted in the form of high quality publications, enabling readers from home and abroad to appreciate recent academic research conducted by scholars in Taiwan.

Chin-hsing Huang, Vice President of Academia Sinica, remarked that it is difficult to maintain a university press in this day and age, due to the limited readership and market of academic publications. NTU Press, however, has managed to do quite well over the years, and has become an exemplary publisher of academic books. He mentioned that even though the various research institutes at Academia Sinica have endeavored to publish the fruits of their research, concerted effort is lacking. Through the NTU and Academia Sinica alliance, both institutes can create momentum in academic publishing here.

Tay-sheng Wang, Director of NTU Press, noted the long-standing collaboration between Academia Sinica and NTU Press, but added that by joining forces at the 2019 TIBE, greater synergy would be created, and

Exhibits at the TIBE

readers could expect to have access to more titles. During the joint exhibition, more than 40 scholars and experts were invited to discuss a wide range of topics ranging from the biodiversity in the seas surrounding Taiwan to an examination of Taiwan's laws during the period of Japanese occupation based on an analysis of historical Russian documents. NTU Press invited faculty members from the Department of Philosophy to revisit the development of philosophy in Taiwan from the Japanese occupation to the post-war period. Dr. Georg Northoff, a Canadian neuroscientist and philosopher, discussed the link between brain and self.

The joint exhibition provided a garden of knowledge that was aimed to encourage people to read for knowledge, and to find out what riches academic publications have to offer.

Exhibits at the TIBE

The opening ceremony of Vision 2019

NTU Career Fair: VISION 2019

Commenced on March 9, VISION 2019 raised the curtain on a series of activities and events. President Kuan Chung-ming presided over the opening ceremony and invited a distinguished guest, Mark Liu, the chairman of Taiwan Semiconductor Manufacturing Company (TSMC), to address the ceremony on behalf of the industrial enterprise. Chairman Liu is an alumnus of NTU Department of Electrical Engineering who made important contributions to the industry by improving the yield rate for semi-conductors. For his accomplishments, he was awarded the title of 2017 NTU Distinguished Alumnus. In his address, Liu encouraged students to engage in interdisplinary studies as well as life-long learning in order to better prepare to face future challenges.

With the advent of Big Data, Artificial Intelligence (AI), Internet of Things (IoT), and cloud computing, a host of new technologies are impacting every sphere of human life and reshaping the workforce. Against this background of rapidly evolving new technologies, the theme for this year's career fair is "Interdisciplinarity, Innovation, and Integration: Drivers of Future Careers." In his remarks to the ceremony, President Kuan shared his vision for the university. With "NTU 2028, marching towards the centennial" as a blueprint, NTU's development will be focused on two key areas: globalization and transformation.

As the nation's most prestigious education institution, NTU will draw on its research and development capabilities to drive innovation. Under the auspices of the Ministry of Science and Technology (MOST), the National Taiwan University Industry Liaison Office (NTU ILO) was established with the mission of providing a platform for industrial academic cooperation. By leveraging the expertise of professional executive teams and managing teams from industry, NTU ILO aims to invent a new academia-industry cooperation model based on the values of interdisciplinarity, innovation, and integration.

NTU Career Fair: VISION 2019 received full support from business enterprises and students. 297 enterprises participated in the event. 283 businesses set up a total of 423 booths in hopes of attracting future talent. The event also featured employer presentations by 68 companies as well as opportunities to visit 21 corporations. At VISION 2019, students learned about the latest developments and trends in industry as businesses seized this opportunity to recruit potential talent. The event successfully connected students and employers and had over twenty-five thousand career opportunities on offer.

Thirteen NTU Scholars Awarded MOST Young Scholar Fellowship

The Ministry of Technology and Science (MOST) hosted the 2019 MOST Young Scholar Fellowship Award Ceremony on March 13. On this auspicious occasion, the young scholars who undertook prize-winning projects were awarded the prestigious title from Chen Liang-gee, Minister of MOST. In Chen's remarks, he encouraged young scholars to venture into the world of academic research with passion and curiosity. He expressed the hope that these innovative young scholars would bring new blood to university campuses and invigorate the academic world with their discoveries.

MOST stresses the imperative work of cultivating young scholars in Taiwan. In order to encourage and support young scholars with innovative ideas and global vision, MOST commenced the Young Scholar Fellowship Program in September 2017. The Program includes the Einstein Program and the Columbus Program. These two programs are aimed to increase the number of young scholars in Taiwan, especially in the vital domains of scientific and technological research. This year marks the second year of the program, and MOST received a total of 406 proposals during the application period, September 7 through October 31. Following a rigorous screening process, MOST approved 44 proposals for the Einstein Program and 38 proposals for the Columbus Program.

Thirteen young scholars from National Taiwan University were awarded the 2019 Young Scholar Fellowship Program. The seven awardees for the Einstein Program include: Thomas Wei, Assistant Professor of the Department and Graduate Institute of Pharmacology; Li Yen-huan, Assistant Professor of the Department of Computer Science and Information Engineering; Lin Chung-wei, Assistant Professor of the Department of Computer Science and Information Engineering; Hsu Kuan-lun, Assistant Professor of the Department of Mechanical Engineering; Chang Shu-wei, Assistant Professor of the Department of Civil Engineering; Tsai Hsieh-chen; Assistant Professor of the Department of Mechanical Engineering; Cheng Lung-pan, Assistant Professor of the Department of Computer Science and Information Engineering.

The six awardees for the Columbus Program include: Pai Chi-feng, Assistant Professor of the Department of Materials Science and Engineering; Hsu Cheng-chih, Assistant Professor of the Department of Chemistry; Tsai Chung-jun, Assistant Professor of the Department of Mathematics; Kang Dun-yen, Assistant Professor of the Department of Chemical Engineering; Ko Chia-ying, Assistant Professor of the Institute of Fisheries Science; Chen Shih-kuo, Assistant Professor of the Department of Life Science.

At the ceremony, Dr. Ko Chia-ying gave an acceptance speech on behalf of the winners of the Columbus Program. The long list of recognized young scholars bears testimony to NTU's research capabilities and potential. It is hoped that these young scholars will continue to conduct bold and creative research and achieve important breakthroughs.

Executive Vice President Ming-syan Chen and the awardees

NTU Acknowledged for Wetland Conservation Contributions

On January 26, 2019, the Construction and Planning Agency, Ministry of the Interior (CPAMI) held a "World Wetlands Day" event to raise public awareness about wetland conservation as well as to honor the commitment and hard work of the organizations and institutions dedicated to this effort. This year, NTU's performance assessment of the implementation of the "Taipei River Basin Wetland's Long Term Monitoring Model Construction Project" was rated as outstanding. Dr. Gwo-wen Hwang of National Taiwan University's Hydrotech Research Institute and his research team collaborated with The Wilderness Society to develop the "Taipei River Basin Wetland's Long Term Wetland Monitoring Model Construction Project," commissioned by the Hydraulic Engineering Office of Taipei City Government.

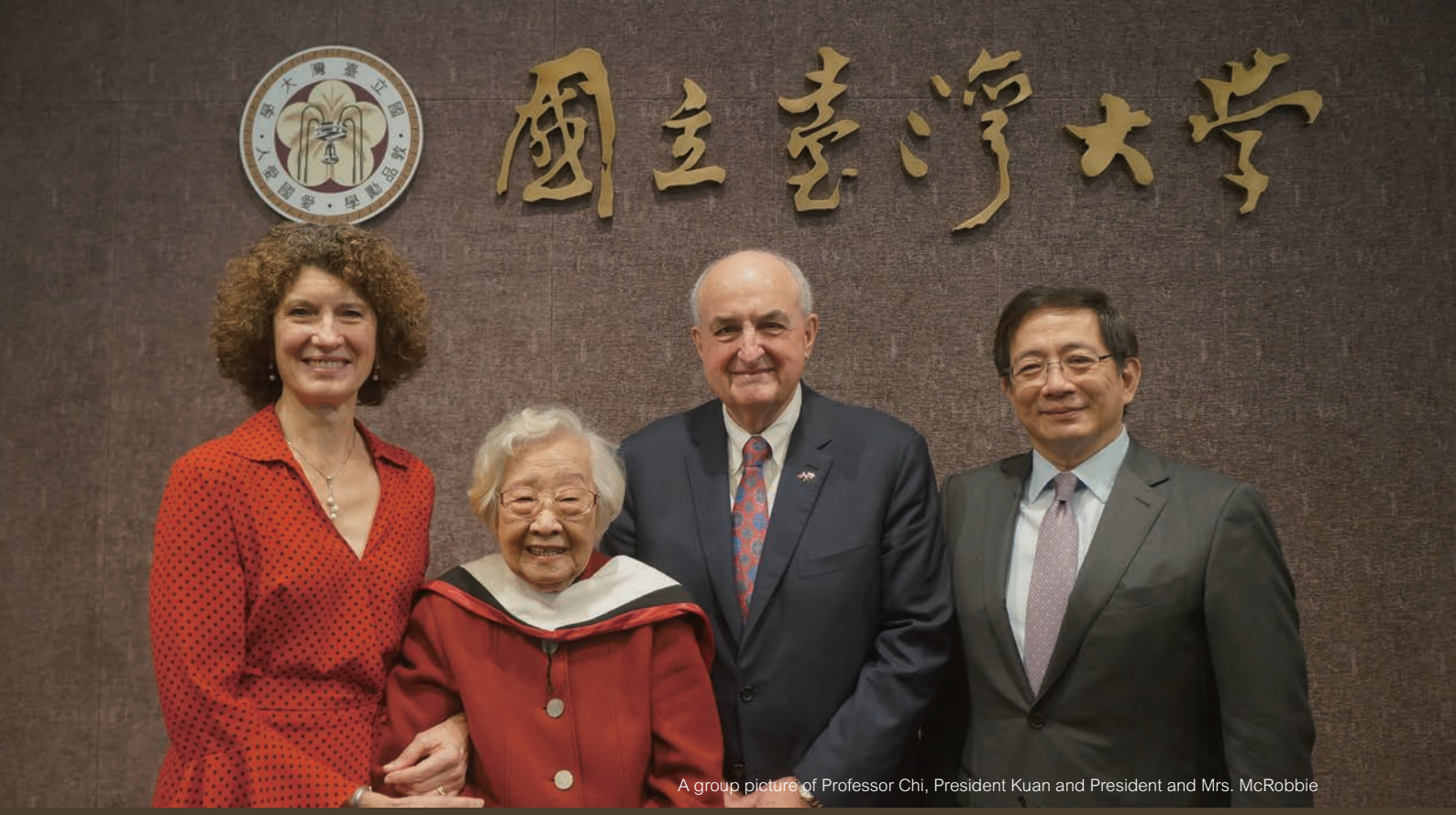
The project assessed the entire river corridor and used a Sedimentation and River Hydraulics-2D model (SRH-2D) to conduct a driving force analysis of the wetlands. The model can also be used to identify and analyze the changes of the landscape and their impacts on animal life and the environment over time. The information acquired thereby then can be used in the design and construction of Taipei River Wetland's Long Term Monitoring Model.

The team also conducted another investigation of the same region, assessing the impact of environmental factors on Mortonagrion hirosei (an endangered damselfly species). The Habitat Suitability Index (HSI) was utilized to examine the species-habitat relationship between the damselfly and the wetland; then the SRH-2D model was used to predict and analyze future habitat and wetland changes. The team's research findings will be an important reference for future habitat management and animal restoration work.

According to Hwang's Long Term Monitoring Model, another four years of monitoring is required for researchers to begin to fully understand the population of Mortonagrion hirosei in the area and its habitat characteristics. Hwang also suggested a restoration experiment of the damselfly. A comprehensive study should be conducted to understand the relationship between the Mortonagrion hirosei (the number of imagos, nymphs, vegetation, and benthos) and environmental factors such as the topography, water quality, and hydrology. Findings can then be analyzed and combined with field surveys and laboratory research to provide information on the distribution and life history of the animal.

The wetlands in Taipei are located in river basin areas where floodplains and lowlands diverge. Due to the water salinity and the abundance of wetland vegetation, most estuaries contain high biodiversity and ecological value, making the areas home to many scarce and rare species. Taipei's high population density has increased the need for open space, and the poor management of the wetlands has negatively impacted the ecosystems. It is hoped that the findings of this project can provide useful scientific data and assist the government to conserve and manage Taiwan's precious wetlands.

The construction of the intertidal habitat in the Wuwei Harbor Wetland



A group picture of Professor Chi, President Kuan and President and Mrs. McRobbie

Emeritus Prof. Pang-Yuan Chi Awarded Honorary Doctorate by IU Bloomington

The NTU campus received a rare visitor on February 25, 2019. Emeritus Prof. Pang-Yuan Chi—a distinguished writer, educator, translator, and scholar who wrote the masterpiece and bestseller *The Great Flowing River: A Memoir of China, from Manchuria to Taiwan* in 2009. Professor Chi graced the campus to receive an honorary Doctor of Letters degree from Indiana University (IU) Bloomington.

Professor Chi, a former distinguished faculty member at NTU, has been instrumental in introducing Taiwanese literature to the western world through translations. For these efforts, she is often called the "Guardian Angel of Taiwanese Literature." Besides compiling and overseeing the publication of An Anthology of Contemporary Chinese Literature: 1949-1974 (1975), Prof. Chi took on the editorship of The Taipei Chinese PEN Quarterly after retiring from her teaching position at NTU. The Taipei Chinese PEN translates and introduces contemporary Chinese literature from Taiwan to the world.

Chi spent time at IU's Bloomington campus as a student in the late 1960s and mid 1970s, which she positively describes in a chapter of her recent book *The Great Flowing River: A Memoir of China, from Manchuria to Taiwan*. Heralded as a literary masterpiece and a bestseller, the book has won a number of awards and has been translated into several languages.

The conferral ceremony was opened by NTU President Chung-Ming Kuan (管中閔) and IU President Michael McRobbie. President Kuan expressed sincere appreciation to Prof. Chi for her dedication to education in Taiwan and her significant role in pushing the 15-year partnership between NTU and IU. President Kuan also thanked President McRobbie and the IU delegates for flying all the way to Taiwan while expressing his hope to see more substantial collaborations between the two schools.

Associate Dean of Liberal Arts, Prof. Ya-Feng Wu (吳雅鳳), presented an account of Prof. Chi's inspiring contributions to education, translation, and literature at home and abroad. At the end of her address, she quoted three stanzas from Percy Shelley's "To a Skylark" to express everyone's respect and gratitude toward this great mentor. The ceremony concluded with the presentation of gifts and bouquets. One of the bouquets was composed of colorful peonies—Prof. Chi's favorite flower and Indiana's state flower—the flower that has always reminded her of her fruitful life on IU's campus in the "Blooming Town."

Alex Ma Wins the 2019 Technical Achievement Awards

Wan-Chun Alex Ma, an alumnus of National Taiwan University, received the 2019 Technical Achievement Awards given by the Academy of Motion Picture Arts and Sciences (AMPAS) at Wilshire Hotel in Beverly Hills on February 9th. Ma was part of a team that was honored for its development of the Polarized Spherical Gradient Illumination Facial Appearance Capture Method, a facial appearance capture and modeling technology used in filmmaking.

In the past, it was difficult to capture the shape and reflectance of an actor's face when filming detailed shots. The Polarized Spherical Gradient Illumination method, a high-resolution facial scanning process using a customized sphere of computer-controllable LED light sources, allows digital cameras to digitize every detail of the facial expression. The technology can portray the actor's face in submillimeter detail, detecting subtle expressions and illustrating the fine lines, dimples, skin texture, geometry and light properties of the human face. The Technical Achievement Awards noted that the Polarized Spherical Gradient Illumination method was a breakthrough development in facial capture technology, which enables a more faithful and realistic recreation of faces in film production.

Every year, the Academy of Motion Picture Arts and Sciences honors individuals who have contributed to the progress of motion picture industry at its Scientific and Technical Awards Presentation. The Academy forms a committee of nearly 60 experts and professionals from diverse fields to propose the list of nominations based on the tools that artists use to create films. This year, Paul Debevec, Tim Hawkins, and Wan-Chun Ma were jointly awarded for the invention of the Polarized Spherical Gradient Illumination facial appearance capture method. This revolutionary facial digitization technology has been used in the production of several blockbusters, including, "Avatar," "The Curious Case of Benjamin Button," "Furious 7," and "X-Men," and to scan various famous actors, including, Angelina Jolie, Brad Pitt, Dwayne Johnson, Hugh Jackman, Tom Cruise, and Zoe Saldana. The technology was recognized for its significant contributions to cinema and the visual effects industry.

Ma, who received his doctorate from National Taiwan University's Department of Computer Science in 2008, is now working as a software engineer at Google. His research includes facial animation, image-based modeling and rendering, and machine learning for graphics.

President Kuan and Alex Ma

iChiba English Language and Cultural Program

Short-Term Programs at NTU, Connecting Schools in the Asia-Pacific Region

The 2019 Winter and Spring NTU Plus Academy Short-term Programs for international students were launched in January and March by NTU's Office of International Affairs (OIA). The programs are open to university students from all corners of the world. The Winter Program included a Chinese Language & Culture Program and a Research and Culture Program. The Spring Program included the EDGE-NEXT Exploration and Development of Global Entrepreneurship for NEXT Generation with Japan's University of Tsukuba, a Chinese Language & Culture Program, and the iChiba English Language and Cultural Program with Japan's Chiba University.

The Winter Chinese Language and Culture Program offered this year was very special, because eleven students from New Zealand applied through New Zealand's Ministry for Maori Development and were offered full scholarships by the Center for Asia-Pacific Excellence (CAPE). During the program, the students had the precious opportunity to meet with local indigenous people from Hualien on the east coast of Taiwan. Arranged by Taiwan's Council of Indigenous Peoples, these meetings enabled the Maori students to establish cultural and, more importantly, "people-to-people" connections with some indigenous people of Taiwan. Since there is a genetic link between the New Zealand Maoris and some indigenous tribes of Taiwan, the exchanges were especially meaningful.

The majority of students who participated in the Winter Research & Culture Program were from China and Indonesia. They took courses in such fields as the life sciences, chemistry, agriculture, psychology and foreign languages. The students worked in small research groups under the guidance of their professors, and were able to learn effective research methodologies within four short weeks. Besides learning how to engage in cross-disciplinary research, the students also did a lot of academic networking within their research groups.

The EDGE-NEXT Exploration and Development of Global Entrepreneurship for NEXT Generation with Japan's University of Tsukuba entered its second year. This year the curriculum was designed by NTU's Creativity and Entrepreneurship Program (NTUCEP). Through customized professional courses, venture capital panels, and visits to entrepreneurship accelerators, the students were trained to become future entrepreneurs and leaders. They also worked on their presentation skills and fund-raising skills.

NTU's short-term Chinese Language & Culture Program is world famous. This year, students came from eleven top Japanese universities. While at NTU, the students learned about Taiwan and Chinese culture, and had access to top-notch language teachers and language-learning facilities.

The Spring iChiba English Language & Cultural Program was tailor-made for Chiba University. Chiba University has been sending its students to NTU for five consecutive years in order to improve their English. The program pairs up each student with a study pal from NTU, enabling the students to learn about each other's cultures and to work on improving their English skills together.

Group picture

The National Eye Bank of Taiwan: A World Class Eye Bank

In the past, 60% of the corneal implants carried out in Taiwan had to depend on corneas imported from eye banks overseas. The imported corneas had to be transported long distances and were vulnerable to changes in temperature or damage during transport, which often led to a decrease in the number of endothelial cells in the cornea and adversely impacted the corneal transplant. Furthermore, patients had to pay for the corneal implant out of their own pocket, which could range from 50,000 NTD to 100,000 NTD or more. Thus, patients who were economically disadvantaged were sometimes deprived of the chance to regain their eyesight. In the days when there was no national eye bank in Taiwan, the corneal donations were handled by individual hospitals, following different procedures and protocols. There was no gatekeeper to ensure the quality or fair distribution of the donated corneas. In an attempt to rectify the situation, in 2013, the Ministry of Health and Welfare provided funding to set up the National Eye Bank of Taiwan, and the NTU Hospital was given the mandate to carry out the task.

In order to strictly control the quality of the donated corneas, the National Eye Bank of Taiwan established a stringent set of standard operating procedures and adopted various strategies to increase the number of donated corneas. Two medical breakthroughs were introduced: 1) Instead of extracting the donor's entire eyeball, only the cornea is removed, and a false eye is implanted to maintain the basic integrity of the donor's appearance, making it easier for the donor's family members to agree to the cornea donation. 2) A microbial culture is conducted immediately after the corneal extraction, followed by a microbial screening to increase the usability of the corneas donated by donors with bacteremia. From 2014 to 2017, the National Eye Bank received 697 donated corneas in total, with a usability rate of over 98% and a transplantation success rate of 99%. The results were published in the globally renowned British Journal of Ophthalmology.

To date, cornea donations in Taiwan have increased steadily from 220 cases in 2013 to 537 cases in 2018. Emergency corneal reconstruction procedures have been administered, sparing more than 60 patients the fate of having their eyeballs extracted. The Ministry of Health and Welfare also amended its Human Organ Transplant Act so that priority is no longer given to recipients who are under 65 years of age. The government also pays for the corneal transplantations under the National Health Insurance Plan. The gift of sight has been given to many who have been blind, thanks to the National Eye Bank of Taiwan.

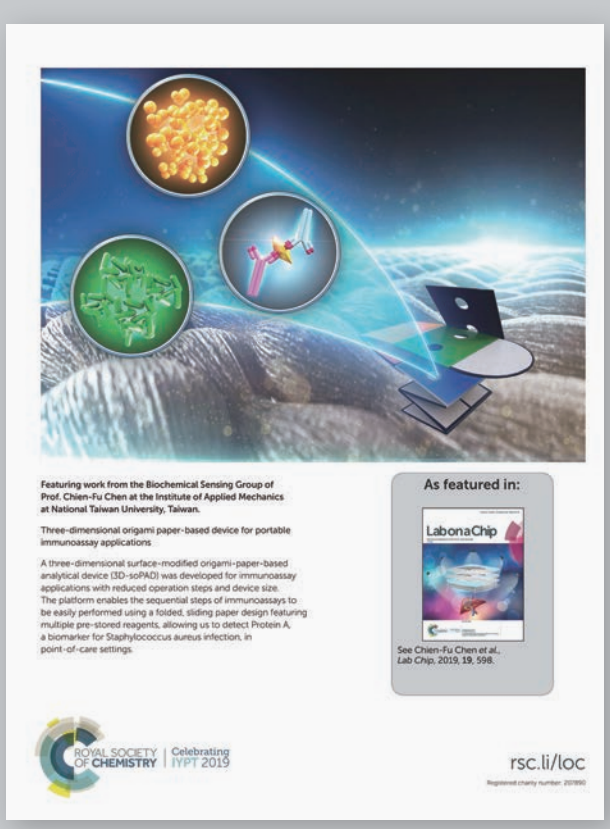
NTU Designs a Three-Dimensional Origami Paper-Based Device for Portable Immunoassay Applications

A research team led by Dr. Chien-fu Chen, an Associate Professor at the Institute of Applied Mechanics, developed a three-dimensional surface-modified origami-paper-based analytical device (3D-soPAD) for immunoassay applications. The detection platform utilizes a folded, sliding paper design featuring multiple pre-stored reagents. This special design facilitates the performance of immunoassays by streamlining the process and reducing the size of the device.

Chen's team demonstrated how 3D-soPAD can detect Staphylococcus aureus infections in human synovial fluid. This research was designated for the February 2019 cover issue of the Royal Society of Chemistry's journal: Lab on a Chip.

Infections are often caused by the invasion of infectious agents, such as bacteria, viruses, and other microorganisms. Severe infection can lead to sepsis, bacteremia, pyaemia, toxic shock syndrome, and even death. In order to provide treatment and prevent the development of antibiotic resistant bacteria, diagnostic tests play a crucial role in clinical diagnosis. However, diagnostic tests tend to be costly and inaccessible in many parts of the world. In hopes of improving the screening time and the test results, Chen's team developed an efficient, affordable, and portable microfluidic immunoassay device which only requires a small volume of sample specimen.

According to Chen, the platform is mainly composed of modified carboxymethyl cellulose instead of the more expensive nitrocellulose. After applying chemical surface treatment, the detection area's carboxymethyl cellulose provides covalent bonding sites for bio-recognition molecules, which enhances the sensitivity and specificity of the device. In the storage antibody test, trehalose and sucrose were added as stabilizing reagents and freeze-dried on the surface of the cellulose paper using a lyophilizer. This enables a longer preservation of the antibody and also increases the portability of the platform.

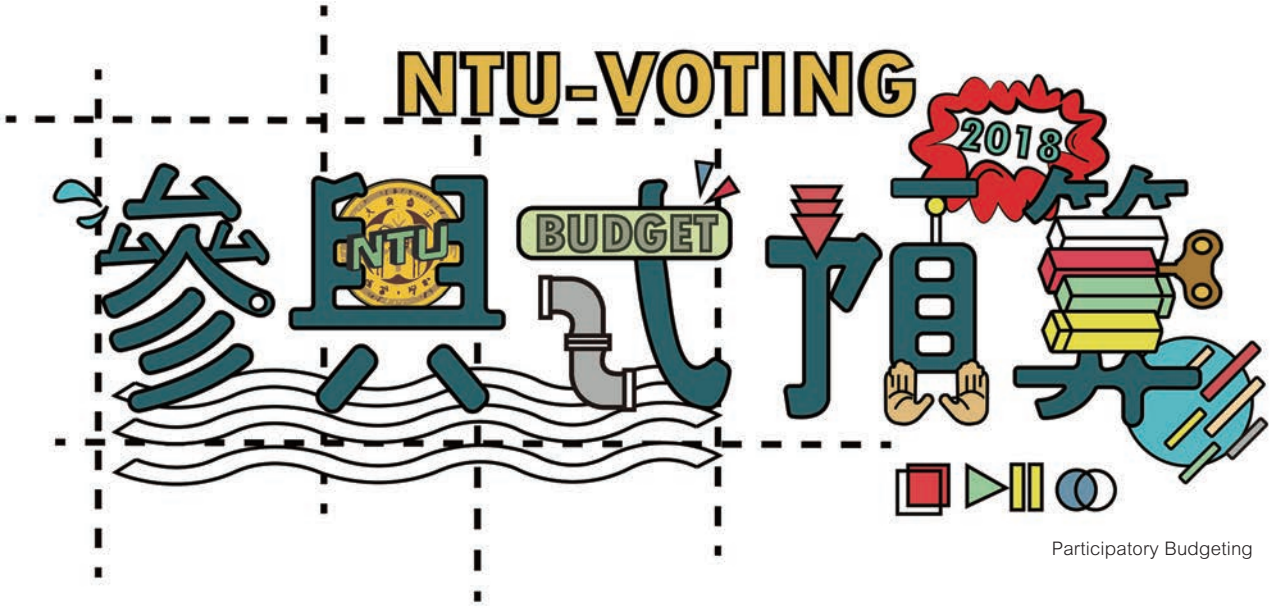


3D-soPAD selected as *Lab on a Chip's* back cover

Unlike conventional immunoassays, which require a greater number of reagents and a longer operation time, the vertical flow immunoassay achieves low dead volume, a shorter fluidic path, and uses a sliding strip origami design to minimize manual operation steps and the number of reagents required. This research targeted protein A (a biomarker for Staphylococcus aureus infection) to demonstrate the performance of the 3D-soPAD platform, yet the device can also be used to detect other bacteria after altering the combination of antibodies.

The origami-paper-based analytical device is easy to replicate and can provide sensitive, high throughput diagnosis with a small sample specimin. Chen and his team are dedicated to continuing their research on point-of-care testing and developing new approaches to promote personal medicine and prevent communicable diseases in resource-limited areas.

The team would like to acknowledge the financial support received from the Ministry of Science and Technology (MOST) and NTU's Higher Education Sprout Project.



Participatory Budgeting

Students Approve the "Bicycle Lights Scheme" Budget

In an effort to promote student autonomy on campus, the NTU Student Association (NTUSA) allocated a budget of twenty thousand NTD and gave the student body the opportunity to decide how best to spend the money. Over the past six months, NTU students conducted a long process of proposal discussions, selections, and voting. In the end, they approved and implemented the "Bicycle Lights Scheme," a proposal to subsidize the installation of lights on student bicycles. Students only need to fill out an online application to receive subsidy.

In recent years, local governments in Taiwan have been implementing participatory budgeting to encourage and facilitate public participation. Inspired by these projects, NTUSA hopes to empower students by making such proposals, deliberations, and decision-making for campus life more democratic. The participatory budgeting process can be categorized into four phases: proposition, revision, exhibition, and voting. In the initial phase, students propose ideas for new projects. All proposals are then collected and assessed by a committee of professional reviewers and evaluated on public utility, lawfulness, and feasibility. The committee then selects the final proposals and offer feedback. Next, all of the proposals are made public for wide discussion. Finally, all student members vote to decide which proposal to adopt.

Eighteen proposals were submitted and thirteen of them were voted on. For example, some students proposed reward programs to encourage students from stop using plastic straws and utensils. Others proposed hosting campus bonding activities, such as mahjong or bubble football competitions. One proposal, which suggested providing a demand responsive transportation system (DRTS) for students commuting between Shuiyuan Campus and NTU's Main Campus, was widely discussed. In the end, the "Bicycle Lights Scheme" was most favored and stood out from the rest.

The mastermind of this proposal, Wang Jia-jun of the Department of Political Science, said that it dawned on him that nearly every student at NTU has a bicycle, and bicycle safety on campus is a constant concern. With this scheme, he hopes to encourage students install lights on their bicycles and improve bicycle safety at night. Now, the subsidy has been approved and all students are eligible to apply.

The chief executor of the participatory budgeting project, Li Yi-siou of the Department of Political Science, said that the whole project was rooted in the concept of building a student association of the students, for the students. At the same time, he stressed that student autonomy should not be a privilege of the few. Every student should be encouraged to participate and voice their opinion. Initially, Li was concerned that the project might not work out, however the project attracted student interest and resulted in a huge success. The "Bicycle Lights Scheme" has received much positive feedback and the number of applications for subsidized lights has exceeded expectations. While admitting there is still room for improving the program, Li feels proud of the association's work thus far and will continue striving to make NTUSA more inclusive and democratic.

"I'll do what YOU say"

Preparing Future Teachers: Embarking on a New Journey

National Taiwan University's Teaching Assistant (TA) Training Seminar and Excellent TA Award Ceremony were held at Tsai Lecture Hall on February 15, 2019. In total, 229 students attended the TA Training Seminar to receive their TA certifications and also joined the Excellent TA award to celebrate the accomplishments of more than thirty outstanding Teaching Assistants. More than 296 administrators, teachers, and students participated in this activity during the winter break.

The Teaching Assistant System was designed to train future teachers and improve the quality of teaching. In the process of assisting professors, TAs have the chance to learn the basics of instructional and course design. Every year, NTU's Center for Teaching and Learning Development (CTLD) hosts a TA Training Seminar and an Excellent TA Award Ceremony. The former equips students with fundamental teaching skills while the latter recognizes teaching excellence among NTU's TAs.

During the TA Training Seminar, trainees were introduced to the TA system as well the roles and duties. of TAs at NTU. NTU's Teaching Assistant System categorizes TAs into four types: Discussion Class TA, Experiment Class TA, Common TA, and Foreign Language TA. Trainees from each category attended their respective seminar courses. Unlike previous years, this year's TA Training Seminar offered two types of sessions: TA Concurrent Sessions and Teaching Skills Sessions. In the TA Concurrent Sessions, the outstanding TAs of 2019 shared their hands-on experience with the trainees, offering them useful tips. On the other hand, the Teaching Skills Sessions invited speakers and experts on and off campus to offer their insight on curriculum design.

A tea break was deliberately arranged in between the sessions to encourage interactions and exchanges of ideas among the participants. Flyers with education related information were also available to participants at the venue. A survey prize draw was conducted at the end of the event to encourage participants to complete the feedback survey. The innovative activities and design of the event were well received and nearly 90% of the students responded. The survey showed a positive feedback, with respondents rating the overall event 4.47 on a scale of one to five, making it the most successful event of the past three semesters.

Outstanding TAs were recognized during the Excellent TA Award Ceremony and their tutors, students as well as family and friends joined in the celebration. The heartwarming occasion and the delicacies provided during the tea break made the event especially meaningful and memorable.

As the outstanding TAs celebrated their achievements at the TA Award Ceremony, novice TAs began readying themselves to embark on their new teaching journey at the TA Training Seminar.

Outstanding Teacher Assistants (TA)

President Kuan and Vice President of Student Affairs Chiung visit the Sunflower Club at Dajia Elementary School

2019 NTU Volunteers: Building Communities Beyond the Campus

At NTU, giving back is part of our DNA. From January 17, 2019 until February 1, 2019, NTU dispatched 40 volunteer teams to serve local and global communities. Thirty-nine volunteer teams visited various regions of Taiwan, including the islets of Penghu, while one team ventured abroad to Northern Thailand. Their volunteer work included companion care for the elderly, afterschool programs, environmental volunteer programs, and themed camps. 1,126 students in total joined the teams, serving 3,751 people and providing 49,541.5 of service hours.

Before the volunteers embarked on their missions, NTU hosted a volunteer orientation to provide volunteers with the necessary skills. The orientation included first aid and volunteer work training, as well as a ceremony in which representatives were presented with the NTU flag. President Chung-ming Kuan and Vice President of Student Affairs, April Chiung, and staff members from NTU Student Activity Division visited different service clubs to show the school's support for the students' volunteerism.

April Chiung, Vice President of Student Affairs, appeared at Pingxi Elementary School to visit NTU Kind Kids on January 24. NTU Kind Kids is a club which shares their love and care with children through activities and lessons. Chiung joined the club members in teaching children and encouraged them to continue their meaningful work. On January 30, President Chung-ming Kuan and Chiung visited the Sunflower Club at Dajia Elementary School. They learned the details of the club's work and spoke with the school principal. Many members of the Sunflower Club are medical students who have been participating in the activity for seven years. Some members are alumni of Dajia Elementary School who wish to return to their alma mater to give back. Moreover, the NTU World Volunteer Society was visited by the Student Activity Division on January 28 and 29 at Chimei Elementary School and Ruimei Elementary School in Ruisui, Hualien.

This year marks the tenth year of NTU Service-Learning in Northern Thailand (NTU SLINT) and Chung-Hsi Chou, Deputy Vice President for Student Affairs, led the team to Chiang Mai and Chiang Rai to serve local communities there. The NTU student participants demonstrated their humanitarian spirit as they volunteered in schools and served veterans in Thailand.

The NTU Guangxi service program is a collaboration project between NTU's Student Activity Division and Guangxi University. Students spend their summer vacations volunteering in Guangxi and their winter vacations volunteering in Taiwan. This year, 29 students from both schools visited Tongfu Middle School in Nantou county. By designing a wide variety of courses ranging from cooking to spring festival customs, the team engaged the students' attention and motivated them to learn. As the volunteers worked, they also fostered friendships with their peers from Guangxi University.

NTU's motto is "Integrity, Diligence, Fidelity, and Compassion." The school encourages all its students to participate in social service and hopes that all students can exhibit their altruistic spirit and devote themselves to the school and society.

Central Javanese Music and Dance at National Taiwan University

As exotic gamelan music begins to echo down the corridors, four dancers clad in glittering costumes and elaborate headgear enter the foyer of the College of Liberal Arts. What a feast for the eyes and ears! They dance slowly to the music with downcast eyes and subtle gestures, focusing on each delicate movement of hand and foot. For ten minutes, the audience feels as if time has ceased as the dancers dance, and they sit mesmerized by the music and the dance. When the gamelan music comes to a stop, the dancers continue to walk, and the audience continues to hold their breath. It isn't until the dancers move out of sight that the audience breaks into thunderous applause.

This was the end-of-semester music and dance performance by students who took the Central Javanese Music and Dance course during the 2018 fall semester. Besides a few students from the Graduate Institute of Musicology, most of the students who took the course were undergraduates from National Taiwan University and National Taiwan University of Science and Technology. The class was co-taught by Ms. Melati, an expert of central Javanese ceremonial dance and Professor Ying-fen Wang of NTU's Graduate Institute of Musicology.

This course was offered as a part of the Asian Music and Dance Culture and Implementation Program, launched by the Graduate Institute of Musicology in 2017. It was the first Central Javanese Ceremonial Dance class to be offered to non-dance majors in Taiwan. The aim of the course was to offer students an opportunity to learn about Javanese culture through music and dance. Very few courses offered at NTU enable students to get to know their own bodies. College students nowadays engage more in cerebral activities than in physical activities and focus more on the outside than on the inside. The subtle, intricate gestures of central Javanese ceremonial dance require the dancers to pay attention to every dance move. That is possible only through total concentration. By learning the dance, students learned how to conduct a dialog with their own bodies. Under the guidance of Ms. Melati, the student dancers immersed themselves in the solemn grace of central Javanese ceremonial dance, finding peace for their bodies and their minds.

In the beginning, the students found the dance moves to be challenging, but by the end of the semester, most of them had mastered the basic moves. Many students who have completed the course claim that they had gained a better understanding of their own bodies and learned how to attain peace of mind by mastering the dance moves.

Students performing Javanese dance

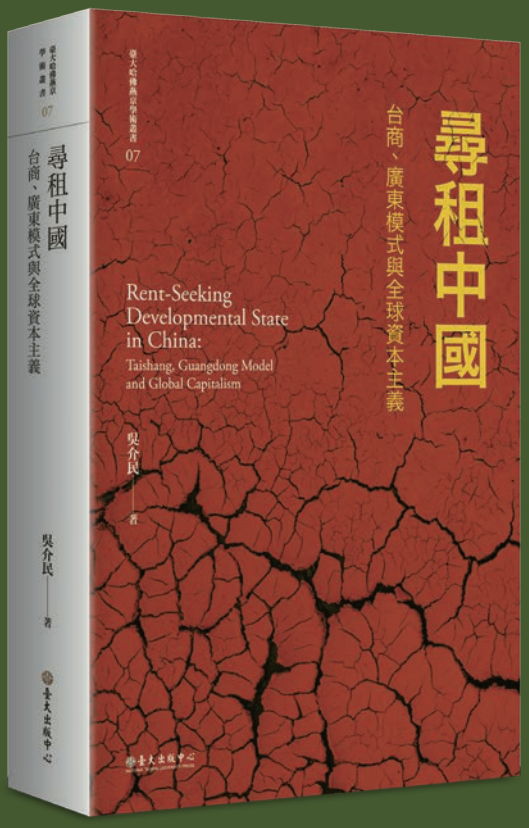
Rent-Seeking Developmental State in China: Exploring the Role of Taiwan's Businessmen in Global Capitalism

Will China escape the middle-income trap? Why are Western nations alarmed by the "China Threat"? What new challenges confront existing theories after China decided to re-embrace capitalist values? Wu Jieh-min's monograph, *Rent-Seeking Developmental State in China: Taishang, Guangdong Model and Global Capitalism*, presents a comprehensive explanation of the connections between China and global capitalism. According to the book, it was Taiwanese businessmen that, as intermediaries, helped the Chinese earn their first pot of gold in Guangdong province and indirectly spurred the rise of China.

The author, Wu Jieh-min, is an associate research fellow in the Institute of Sociology at Taiwan's Academia Sinica. His research interests include political economics, political sociology, democratization, and China's political and economic development. Most of his works focus on Taiwan's democracy, China's development, and Hong Kong's civic movement. Wu has spent many years visiting China, conducting fieldwork studies in the Guangdong Export Processing Zone (EPZ). By exploring the shifting relationship between workers, Taiwanese businessmen, and the local and central government, he has identified and studied the factors that contributed to Guangdong's economic success as well as the potential challenges that lie ahead.

In his book, Wu adopts a global value chain approach to explain how the "rent seeking developmental state" has played a crucial role in the process of economic development and value capture. This explanation includes the intricate relationship between government and business in China and links the global level to the local, the macro perspective to the micro. Wu deployed such concepts as "institutional rent-seeking," "locally embedded governance," and "differential citizenship" to help his readers comprehend the developmental logic of China's economy.

In the past, China has followed global value chains to become the factory of the world and enjoyed great economic success. However, China is now struggling to upgrade itself and transform its industry. What are the future prospects of China's economy? "Rent-Seeking Developmental State in China: Taishang, Guangdong Model, and Global Capitalism" presents the studies and research of Wu Jieh-min, offering readers some answers to these questions.



Rent-Seeking Developmental State in China: Taishang, Guangdong, Model and Global Capitalism Book Cover

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