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HIGHLIGHTS

Dream of the Red Chamber Reinterpreted

New Statistics Program to Meet Growing Demands

NTU, Hokkaido U Become Partners

Learning by Playing, Students Help Autistic Children

Special Report

Nobel Physics Laureate Speaks





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NTU at a Glance

New Forestry Story House Shares History of Forestry School





Vice President for International Affairs

LUI SA SHU-YING CHANG

A new semester is underway and quite a few fresh faces have arrived on campus. Whether you plan to be at NTU for a semester, a year, or even four years, I earnestly recommend that you set aside any biases or burdensome baggage you might have and let yourself go. Then, you may give free reign to your boundless sense of curiosity and experience firsthand the extraordinary relationship between NTU and Taiwan.

Looking around the world, we see that top universities play a clear role in leading the cultivation of domestic talent. In Japan, for instance, the University of Tokyo strives to produce future Japanese leaders, while Kyoto University tends to focus on the development of scientists. Taiwan is different, however, and here at NTU we endeavor to both cultivate the future leaders of Taiwan as well as provide a high-quality research environment, making NTU a comprehensive educational institution.

In addition, our open, liberal academic atmosphere has made NTU a bellwether for public opinion in Taiwan. NTU not only routinely offers policy recommendations for the nation, the university also serves as a place of experimentation for implementing new policies. Many domestic universities look to NTU as the standard for higher education in Taiwan. Once NTU began to promote campus internationalization, other universities followed suit. When we recognized teaching assistants' eligibility for labor and national health insurance, many other universities also introduced these benefits for their TAs. NTU enjoys an exceptional significance and status in Taiwan.

However, NTU will never rest on its laurels. We pursue a range of approaches aimed at making the university even better. At the Office of International Affairs where I work, my team and I have been aggressive in promoting campus internationalization. Each year, NTU sends more than 1,000 local students abroad for overseas studies, while the university welcomes nearly 5,000 international students to the NTU campus. Yet, it is insufficient to simply encourage local students to study abroad and international students to come to NTU. We have organized our Mixer Program, which invites NTU's local and international students to participate together in orientation events and student clubs in order to make international experiences a regular part of daily campus life.

Although NTU's international family members come from different backgrounds, we believe that even in areas in which there are differences, such as daily routines, lifestyle, recreation, and professional development, all of us will find it possible to engage in life in Taiwan in ways similar to those of our own country. By seeking mutual understanding and learning from each other's strengths, the world becomes our personal database and we come to discover a more expansive world view and broader potential for living.

Regardless of where you hail from, we welcome you to become a part of NTU. By joining the NTU community, you not only make NTU a more fulfilling and diverse institution, but reap the rewards of your own wonderful journey.



ORIENTATION CAMPS HELP NEW STUDENTS ADJUST TO CAMPUS LIFE

To welcome the many students joining the NTU community this 2015/2016 academic year, this year's NTU opening day ceremony and an orientation camp for new students were held on August 30 and September 6, respectively.

With all of NTU's colleges and departments participating, the new students and their parents met with their professors and classmates for the first time in amusing activities that informed them about their new home away from home. In addition to the undergraduate freshmen, this year's incoming graduate students also joined the orientation activities, bringing greater scale and significance to the events.

Offering words of encouragement during the ceremonies, NTU President Pan-Chyr Yang called on the students to demonstrate the courage to try new things, pursue serious explorations, enjoy their university life, and find joy in sharing and treating others with honesty. President Yang also urged the students to live by the NTU motto of "Integrity, Diligence, Fidelity, and Compassion," learn to show compassion to their family members and peers, and extend such care and concern to the people around them, the environment, society as a whole, and ultimately the entire world.

Both sessions of the opening day ceremonies commenced with the new students singing the NTU university song. Moreover, all participating students and faculty members were decked out in limited-edition polo shirts designed especially for this year's freshmen and given to them as a good luck charm. The shirts' logo was chosen from designs submitted by students through voting by the NTU student body. Inspired by a map of the NTU campus, something all new students find handy, the



Special Report



design featured a collage of famous campus landmarks as well as the squirrels often seen around campus. President Yang presented an award to the shirt's student designer during the ceremony.

During the opening ceremony, the presidents of the NTU Graduate Student Association and the NTU Student Association were invited to share their experiences of studying at NTU with the new students. The ceremonies ended with the participants joining together to sing

a special, rousing rendition of the university song. Following the ceremonies, the students were entertained with programs and performances as a warm-up for the five-day/four-night orientation camps. These included student Yuan-Che Hsu singing his song "NTU Dream" as well as a speech by Vice President for Student Affairs Tsung-Fu Chen.

When it was first introduced in 2008, NTU's student orientation program offered a variety of practical classes aimed to encourage students to prioritize their studies over play. The event also sought to let the new students feel welcome and help them adjust to college life. In 2012, the university expanded the program by adding overnight stays and evening classes. The goal of this expanded program was to create an environment in which the students lived and studied side by side to foster closer interpersonal interaction.

In addition to helping the students select courses and complete registration, this year's orientation events also introduced the newcomers to NTU's abundant campus and library resources. The activities hoped to impart useful study skills to the new students while promoting positive interpersonal relationships.



NOBEL LAUREATE DELIVERS LECTURE ON INVENTION OF REVOLUTIONARY BLUE LEDs

NTU had the sublime honor of hosting a lecture by the 2014 Nobel Prize in Physics laureate Shuji Nakamura on September 3. Known as the Father of the Blue LED, Dr. Nakamura, who works at the University of California, Santa Barbara, earned the prestigious award jointly with Isamu Akasaki and Hiroshi Amano, both of Nagoya University, for the invention of the efficient blue light-emitting diode which has “enabled bright and energy-saving white light sources.”

This extraordinary opportunity to attend Dr. Nakamura’s lecture was made possible by the efforts of the NTU Center for the Advancement of Science Education. Interest in the event was so high that CASE announced the completion of online registration on the same day it opened. A capacity crowd of 330 science fans, including students and professors, engineers and industry representatives, as well as members of the general public, filled the lecture hall to hear Dr. Nakamura personally relate how, after years of experimentation, he finally achieved his breakthrough using gallium nitride as the core material for his revolutionary bright blue LEDs.

On the day of the lecture, Dr. Nakamura was first warmly welcomed by NTU President Pan-Chyr Yang before receiving an introduction from CASE Director Yeong-Chuan Kao. In addition to delivering his lecture, Dr. Nakamura also took part in a press conference conducted by Executive Vice President for Academics and Research Liang-Gee Chen, as well as a post-lecture discussion forum moderated by Prof. Yuh-Renn Wu and Chairperson Gong-Ru Lin of the Graduate Institute of Photonics and Optoelectronics.

In his lecture, called “The Road toward the New Light—The History of Bright Blue LEDs,” the Nobel laureate recalled the critical technological



1 2 Dr. Shuji Nakamura, the 2014 Nobel Prize in Physics laureate, presents his lecture at the GIS NTU Convention Center.

bottlenecks he encountered in his mission to create the bright blue sensation. He also discussed how the tiny creations of the laboratory lead to major turning points in the development of modern society. The incredible advances he accomplished in epitaxy quality as well as his invention of a method for p-type doping of gallium nitride are now recognized as the most significant breakthroughs in the history of solid-state lighting technology.

In addition to speaking about his scientific achievements, Dr. Nakamura also shared his insights into other issues, such as the advantages and disadvantages of the open liberal education system of the United States as compared to the diploma-oriented approach that predominates in Asia. In his conclusion, Dr. Nakamura advised the students of Taiwan to demonstrate greater enthusiasm and give free reign to their wildest ideas if they wish to face the rapidly changing world head on.





◀ The ceremony marking Breeze Charity Foundation's donation of a new ambulance takes place at the NTU Health Center.



BREEZE CHARITY DONATES NEW AMBULANCE TO HEALTH CENTER

Breeze Charity Foundation donated a new ambulance to the NTU Health Center in August. The donation was made under the instructions of Paul Liao, the major shopping mall operator's former chairperson, who passed away in May of this year. To honor the donation, a ceremony was held at the Health Center on August 12.

When Chairperson Liao learned in July 2014 that the Health Center's previous ambulance had reached the end of its five-year operational life, he immediately instructed the charity foundation to purchase a new one for the center to safeguard the health and safety of everyone in the NTU community. During the ceremony, the former chairperson's son Henry Liao, who serves

as Breeze Group's executive chairperson, recalled that his father had always taught him that if one benefits from society, one must use what one has gained to feed back and make society better.

Speaking at the ceremony, NTU President Pan-Chyr Yang pointed out that Paul Liao had always demonstrated a deep passion for charity. President Yang then expressed his deepest gratitude for the former chairperson's decision to provide such a high-quality ambulance to NTU, adding that the new ambulance would enable the university's emergency medical teams to shuttle quickly from NTU's various campuses to the appropriate hospitals.



Interdisciplinary Recognized with Prestigious Japanese Ecology Prize

Prof. Chih-Hao Hsieh of the Institute of Oceanography and the Institute of Ecology and Evolutionary Biology was presented with the 18th Biwako Prize for Ecology in Kusatsu City, Japan on July 18. The award's evaluation committee recognized Prof. Hsieh for his approach of integrating theory, empirical data, and analyses from across multiple disciplines in solving environmental issues, such as fisheries, eutrophication, as well as environmental changes that impact ocean and lake ecosystems.

Shiga Prefectural Governor Taizo Mikazuki personally presented Prof. Hsieh with the prestigious prize during an award ceremony and award seminar held at Lake Biwa Museum, which promotes awareness of the award's namesake. During the event, the prize winner delivered an acceptance speech as well as a lecture titled "Integrating Theory, Empirical data, and Analyses for Ecosystem Forecasting."

In his lecture, Prof. Hsieh discussed the interdisciplinary approaches he is applying in three of his research projects: 1) investigating fishing effects on unexploited fishes in the context of changing climate, 2) developing novel methods and theories of size-based approaches to assess the status of plankton communities, and 3) examining the effects of eutrophication and warming on the Lake Biwa ecosystem.

The prize was named after Lake Biwa (Biwako in Japanese), the largest lake in Japan, which is considered a flagship model of environmental conservation, management, and education. In the past, the lake suffered severe environmental degradation due to economic growth, eutrophication, and changes in land use; since the late 1970s, however, the local government has been working aggressively together with concerned citizens to restore and improve the lake's environment.

► Prof. Chih-hao Hsieh (left) receives the 18th Biwako Prize for Ecology from Shiga Prefectural Governor Taizo Mikazuki.



▼ Prof. Chih-hao Hsieh holds the 18th Biwako Prize for Ecology as he shakes hands with Prof. Kihachiro Kikuzawa.



▲ Prof. Chih-hao Hsieh poses for a group photo with the prize's evaluation committee and the governor of Shiga Prefecture, Taizo Mikazuki.

Students of the Department of Mechanical Engineering claimed the top prizes in two of the three competition categories at the 2015 ASME Innovative Design Simulation Challenge in August. The students, all of whom are women, demonstrated on a global stage that not only does NTU excel in basic research, it is also capable of innovatively bridging theory with practical applications.

▼ Students Yu-Han Cheng, Yen-Ting Wang, and Han-Yu Lee are all smiles as they receive the Best Overall Simulation award in the Commercial Software Category.



Working under her faculty advisor Prof. Pei-Chun Lin and competing as an individual, Pin-Yi Chen won the Best Overall Simulation award in the Custom Software Category for her entry “iLatte—A Superior Latte Art Learning Package.” Also, the team of Yu-Han Cheng, Yen-Ting Wang, Han-Yu Lee, who received guidance from Prof. Hao-Ming Hsaio, grabbed the Best Overall Simulation award in the Commercial Software Category for their “Novel Tapered-Strut NiTi Stent for Enhancement of Stent Fatigue Life.”

Designed for people learning the craft of latte art, Pin-Yi Chen’s iLatte is a computer assisted learning software that enables users to clearly observe their micro-movements with hardware that guides the users’ hand movements. Chen looks forward to her

Mechanical Engineering Women Win Top Awards at Design Simulation Competition



▲ (from left to right) Pin-Yi Chen and the team of Yu-Han Cheng, Yen-Ting Wang, and Han-Yu Lee show off their Best Overall Simulation awards at the 2015 ASME Innovative Design Simulation Challenge.

software replacing latte art teachers and hopes it can be expanded for uses in the fields of medicine and education.

Meanwhile, Prof. Hsaio’s students created their winning entry by integrating several pieces of commercial design and simulation software with a graphic user interface. Their system allows users to rapidly design vascular stents and forecast their clinical characteristics, cutting product development times in half. The same team also won a Red Dot Design Award in Germany in 2014.

The IDSC is an annual international competition organized by the American Society of Mechanical Engineers for mechanical engineering and multidisciplinary undergraduate students. The event challenges students to “demonstrate their skills in developing and deploying simulations or simulation frameworks and environments” in the three competition categories of Custom Software, Commercial Software, and Mixed Software. This year’s IDSC was held in Boston, Massachusetts,

INTERNATIONAL STUDENTS LIVE AND LEARN AT 2015 SUMMER PLUS



- 1 The students of Summer Plus 2015 huddle together for a massive group photo during their two-day excursion to Ilan.
- 2 International and Taiwanese students share a delicious meal while in Ilan.
- 3 Two international students in the Summer Plus Chinese Classics and Culture program show off their calligraphy.

NTU Plus Academy offers a fascinating variety of short-term and custom-designed programs for international students all year round. This year's Summer Plus programs, ending in late August, elevated NTU Plus Academy to a new level through a series of new and joint programs together with NTU partner universities, introducing more international students than ever to NTU's robust academic programs and Taiwan's intriguing culture and natural environment.

In addition to working with various NTU academic divisions to continue offering successful programs across the five categories of Arts, Chinese Studies, Laboratory and Engineering, Natural Science, and Social Science, NTU Plus Academy also introduced two new custom-designed programs with the University of Tokyo and NTU Triangle Alliance member, National Taiwan Normal University. In all, the academy provided a total of 16 short-term programs this summer.

In addition, this summer's "Chinese Translation" and "Chinese Classics and Culture" programs provided scholarships aimed at attracting students from overseas with backgrounds in Chinese studies and East Asian studies. The scholarships played a role in boosting enrollment in the 2015 Summer Plus program to 346 students, a 14% growth compared to last year.

To augment the students' coursework, each Summer Plus program includes field trips focused on the culture and natural environment of Taiwan. Students taking the "Biodiversity, Agriculture, and Culture of Taiwan" program, for instance, visited Yehliu Geopark, Taijiang National Park, Taroko National Park, and the 921 Earthquake Museum of Taiwan, deepening their familiarity with Taiwan's geology and natural environment.

Moreover, Plus Academy also features larger excursions and events for all Plus students. Designed to be fun and foster interaction among the international students, the events include orientation activities, trips to the Maokong tea area and National Palace Museum, a culture night, and a farewell dinner party. Also, as a way of bringing local and international students together and promoting campus internationalization, local students are trained as student advisors so they can help the international guests smoothly adapt to life in Taiwan.

Facing increasing competition from summer programs at universities in neighboring Asian countries, Plus Academy aims to continue expanding its enrollment numbers by cooperating with NTU academic divisions, NTU Triangle Alliance members NTNU and National Taiwan University of Science and Technology, as well as partner universities around the world in order to bring ever greater diversity to its selection of programs.



- ▲ NTU President Pan-Chyr Yang shakes hands with the winner of a bicycle in the party's Facebook selfie contest.
- ▶ The crowd spreads out across the grass beside Luna Pond during the 2015 NTU Welcome Mixer for New (Inter)national Students, which drew an estimated 1,200 international and local students.



INTERNATIONAL AND LOCAL STUDENTS FORM FRIENDSHIPS AT ORIENTATION PARTY

This year's orientation party for new international students was a rocking event like none other. Called the 2015 NTU Welcome Mixer for New (Inter)national Students, the party took place around Luna Pond on the evening of September 12 and was designed to welcome both NTU's new international students and local students by creating opportunities for them to form friendships in a festive atmosphere.

The massive party featured music and dance performances, delicious snacks and drinks, a lucky prize drawing, and a spectacular light show. The event drew a crowd of over 1,200 partygoers made up of international and local students, professors, and staff members of the Office of International Affairs. Also there to welcome the new international students and get in on the action were NTU President Pan-Chyr Yang, Vice President for Student Affairs Tsung-Fu Chen, and the College of Public Health's Dean Wei-Jen Chen and Vice Dean Chang-Chuan Chan.

Daniel Tang and Derek Han, alumni of the University of California and California State University, respectively, who had previously spent time at NTU as exchange students, served as emcees for the evening's festivities.

Radiating the warmth and vitality of the California sun, the pair stoked the parties' enthusiasm as they introduced the event's speakers and performers. The NTU-PDC dance club and NTU Tap Dance Club were among the hottest performers to hit the stage.



More excitement was provided by a selfie contest and a lucky prize drawing. The selfie contest invited international students and their local student companions, with whom they had been paired by the university, to snap fun selfies together and post them to the mixer's Facebook page. Chosen by lottery, the winners received colorful prizes, including hats, T-shirts, and bicycles. Students who entered their event ticket stubs in the drawing also had the chance to win a variety of cool prizes.

The party's festive finale pretty much summed up the celebratory vibe that evening. As the lightshow rose to a brilliant climax and a group of international students led a joyous chant of "NTU!, NTU!, NTU!," Vice President for International Affairs Luisa Shu-Ying Chang and Deputy Vice President for International Affairs Bennett Fu jumped on stage to dance together the happy students.



NTU and Hokkaido U. Engineering Colleges Enjoying Fruitful Partnership

▲ Photo by Hokkaido University Ambitious Leader's Program Participants in the Ambitious Leader's Program at Hokkaido University pose for a group photograph.

The College of Engineering and the Hokkaido University School of Engineering have enjoyed an active and fruitful relationship since the establishment of a special partnership aimed at cultivating global leaders in field of materials science in 2013. Through this partnership, the two engineering schools have established student and faculty exchange programs and held annual joint workshops for the past two years. HU has also designated the COE as an official learning satellite for its engineering students.

The NTU-HU student exchange program provides financial support enabling up to five students from each university to collaborate on joint research projects at the other university for two to four months each year. Over the last two years, seven COE graduate students have taken advantage of this program by attending classes at the Hokkaido Summer Institute.

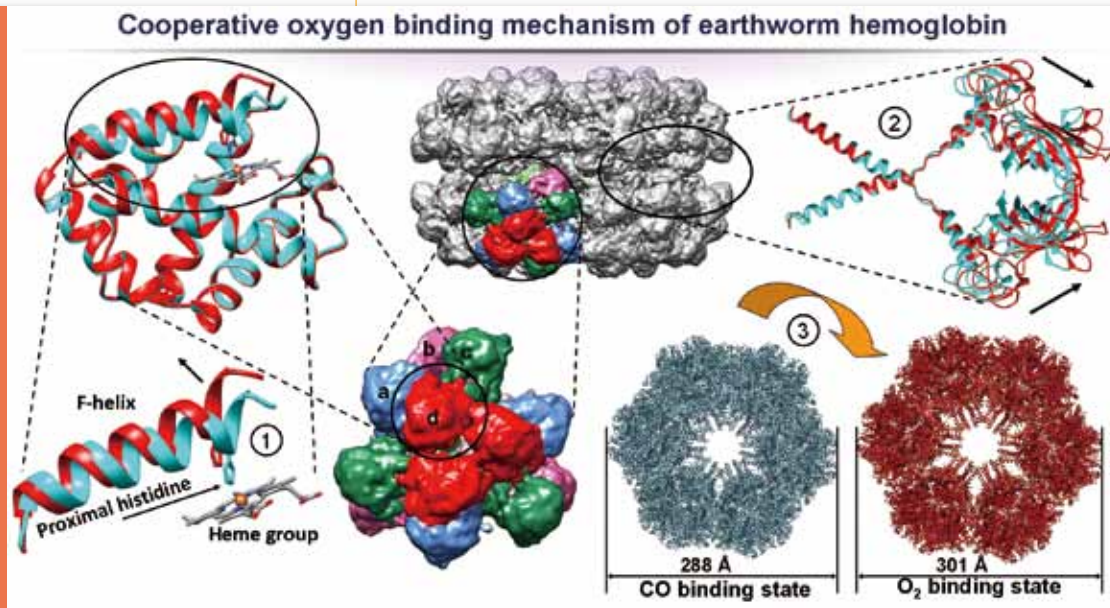
The summer program has also brought together world-class researchers and students to explore new frontiers in materials science. For instance, the COE's Prof. Wen-Chang Chen and Prof. Jye-Shane Yang were invited to lead a weeklong lecture class at the summer institute, where they worked alongside their counterparts from the University of Strasbourg, France, University of Montreal, Canada, Kansas State University, USA, and Nanjing University, China. In addition to the summer program, three HU engineering graduate students have visited NTU as interns to collaborate on research projects over the last two years.



As one of HU's primary learning satellites, the COE not only accepts HU internship students, but has opened joint classes with HU as well. In March of 2016, the college will welcome two HU engineering professors and ten students to our campus to attend a joint for-credit course together with NTU faculty and students. Moreover, the School of Engineering is formulating plans for the establishment of a dual-degree program with the COE.

The joint workshops, which are hosted by each university in alternating years, are not only venues for the presentation of research work and discussion of the latest advances in materials science, they serve as opportunities for participants to meet their international peers and learn about different cultures. Last year, Prof. Chen and Prof. Yang brought eight NTU graduate students to participate in the workshop in Japan. This year, the workshop will be held here at NTU on October 1-2.

Research Achievements



▲ A graphic depicting the cooperative oxygen binding mechanism of earthworm hemoglobin

Earthworm Hemoglobin Shows Promise for Development of Artificial Blood

A team of researchers led by Department of Physics Prof. Chih-Yu Chao has captured the most detailed high-resolution images of the structure of hemoglobin in its native oxygenated state. This valuable information is expected to facilitate the development of new life-saving artificial blood and emergency pharmaceuticals. Reflecting the significance of these first-ever images, the team's results were published in *Nature's* online journal *Scientific Reports* in April.

Through the use of cryo-electron microscopy coupled with image processing and 3D-reconstruction technology, Prof. Chao and his team were able to produce near-atomic resolution images of the complete structure of *Lumbricus terrestris* hemoglobin in its oxygenated form. They then used molecular dynamic simulation to compare the structural differences in this special type of hemoglobin when it binds with either carbon monoxide or oxygen. This revealed for the first time the allosteric effect of cooperative oxygen binding in this protein, which allowed the team to provide the first explanation of its assembly mechanism.

Just who is this *Lumbricus terrestris* and what makes its hemoglobin so important? It's none other than your friendly earthworm, and it turns out that this mud-loving creature possesses a giant hemoglobin protein characterized by the exceptional rate at which it binds with oxygen (36 to 144 times that of human hemoglobin) as well as its high resistance to oxidation.

The deeper understanding of this hemoglobin's molecular structure provided by Prof. Chao's team shows promise as a foundation for future clinical trials aimed at the development of artificial blood and transfusion medicine. By better understanding its oxygen binding mechanism, scientists might be able to use the earthworm's unique hemoglobin as an oxygen carrier to boost the efficiency of artificial blood in transporting oxygen.



▲ Prof. Chih-Yu Chao's team used this device to produce near-atomic resolution images of the complete structure of *Lumbricus terrestris* hemoglobin.

The team plans to use *Lumbricus terrestris* hemoglobin for the development of emergency pharmaceuticals targeting acute pulmonary failure and stroke patients. It has joined forces with doctors at NTU Hospital in applying for authorization to carry out phase-one human clinical trials. Taking advantage of the hemoglobin's high cooperative oxygen binding capacity, the researchers intend to inject it into patients to quickly release oxygen to oxygen-deprived tissue and prevent cells from dying. Prof. Chao is currently holding talks with two pharmaceutical firms concerning the feasibility of cooperating on the development of this type of emergency drug.

Research Achievements

▼ The study's team of researchers and physicians from the College of Medicine and NTU Hospital poses for a photo.

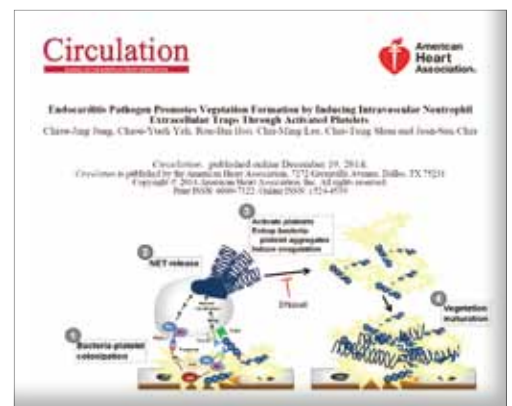


*A team of researchers and physicians at the College of Medicine and NTU Hospital has undertaken research that helps clarify the underlying pathogenic mechanisms of infective endocarditis, a common and highly fatal infectious disease of the heart commonly caused by oral streptococci. This important breakthrough also contributed to the understanding of molecular mechanisms and immunopathogenesis involved in the formation of arterial thrombosis, the most life-threatening cardiovascular disease. The journal *Circulation* published the study in February.*

Before the study, the researchers knew that endocarditis-inducing streptococci form multilayered biofilms with aggregated platelets on injured heart valves. They did not, however, fully understand the host factors that interconnect and entrap these bacteria-platelet aggregates when promoting the formation of vegetation, a septic thrombosis in the infected valve composed of fibrin, platelets, and bacteria. The study enabled them to conclude that neutrophil extracellular traps (NETs) promote and expand vegetation formation through the enhancing and entrapping of bacteria-platelet

Study on NET Reveals Immunopathogenic Mechanisms of Thrombosis

aggregates on the injured valves. This important finding not only indicates that NETs provide a scaffold for bacteria colonization, but also a platform for subsequent platelet aggregation formation. Such mechanisms may also account the formation of arterial thrombosis in general and that bacteremia induced by commensal bacteria maybe directly contributed to thrombosis formation.



▲ The team's study appears in the February issue of the journal *Circulation*.

Firstly, the study confirmed that streptococci-platelet aggregates can induce the formation of NETs, providing the framework for entrapping the streptococci-platelet aggregates into a well-organized biofilm as well as for activating the coagulation system to expand the size of vegetation. Furthermore, the team has found that bacteria play key roles in the coordination of pathway signaling through such elements as spleen tyrosine kinase, Src family kinases, phosphatidylinositol-3-kinase, and p38 mitogen-activated protein kinase. Such signaling up-regulates the expression of P-selectin in the platelets, and also induces reactive oxygen species-dependent citrullination in the arms of neutrophils. Neutrophil extracellular traps in turn serve as a scaffold that further enhances and entraps bacteria-platelet aggregate formation and expansion. Most importantly, it showed that prophylaxis with intravascular DNase I alone can reduce significantly the size of vegetation, diminish colonizing bacteria, and can also limit the functional defects of aortic insufficiency that result from valve injury. In other words, the intravenously administration of human DNase I may offer an efficiently adjuvant therapy with routine antibiotics to prevent and treat infective endocarditis.

In conclusion, for patients who require dental extraction or other surgical interventions, the disturbance of hemostasis by anti-platelet agents like aspirin is contraindicated. Therefore, targeting Neutrophil extracellular traps with agents such as DNase I could become an effective alternative to aspirin for patients undergoing surgery in clinics. In the future, this may also be applied to the treatment of other forms of arterial thrombosis.





▲ Prof. Chiang's team demonstrates that SSEA-1+ pulmonary cells are Two NTU Star Rain members play dress up with their student in order to teach daily tasks.

STUDENTS OF NTU STAR RAIN HELP AUTISTIC CHILDREN LEARN DAILY TASKS

A pair of NTU students accompanies a girl in her first year of primary school to the counter of a convenience store where she hands her coins to the cashier to pay for a bottle of soy sauce. The students are neither the girl's immediate family members nor helpful relatives; rather they are members of the student club NTU Star Rain, whose aim is to help autistic children adapt to the routines and requirements of daily life.

The children are referred to as "star children." This, according to club members, is due to their belief that children with autism should be treated with extraordinary tolerance and compassion, as if they were citizens of a distant planet who have found themselves living on Earth.

As part of their mission, Star Rain volunteers participate in one afternoon teaching session each week as well as one three-day/two-night weekend service project. The children they help are separated into the two groups of primary school students and junior and senior high school students. During classes and activities, each child is assigned two or three student volunteers who work as a team to provide instruction, counseling, and interaction to help the child learn to perform daily tasks.

For each teaching session, the student club devises an engaging topic based on the children's daily needs. Topics of previous classes and activities have included shopping, water conservation, and interaction

with classmates. Though the topics cover tasks that other people take for granted and regard as simple, the children require detailed and patient instruction.

One club volunteer relates her experience of learning about the unique needs of each child, "We once had an autistic boy whose abilities appeared to be all right. But, he would sometimes get angry and refuse to cooperate with a class or join an activity. One day he finally told us, teary eyed, 'It's hard to speak.' Only then did we realize that when he was acting out and seeking attention during those activities he was feeling a lot of psychological pressure inside."

▼ Prof. Chiang and his PhD students- Chien-Hui Chien (left) and Chiao-Juno Chiu (right). A member of the student club NTU Star Rain engages his student through calligraphy.





Prof. Li-Chuan Ou of the Department of Chinese Literature has published the second volume of a book series she is compiling as the culmination of her extensive research on the Chinese classical novel *Dream of the Red Chamber*. Released by NTU Press in September, *A Grand View of the Red Chamber Dream: Maternal Figures* follows the publication of the series' first volume, *A Grand View of the Red Chamber Dream: General Introduction*, last December.

While the respected Redologist laid out a broad overview of her ideas in the first book, in the second she delves deep into the meaning and significance of the female characters who inhabit the classic tome, providing new insights into this ancient text. In this new book, Prof. Ou reminds readers that *Dream of the Red Chamber* is not simply a tale of youth, but also an ode sung to the Great Mother.

Seeking cohesion between Western literary theory and the Chinese Confucian tradition,

Book Provides New Insights Into Maternal Figures of *Dream of the Red Chamber*

Prof. Ou presents her analysis of the mythical goddess Nuwa, the goddess of Disenchantment, Grandmother Jia, Lady Wang, Yuan Fei, and Granny Liu, six maternal characters that span the celestial world to that of humans, and explains their roles in the construction of a cyclical, interwoven narrative system. According to Ou, these figures at once grasp the source of the power of the world and serve as the thread that links the novel's framework. She calls them the "absolute goddesses of salvation and life" and the "most tranquil and steadfast power of maternal gentleness" in the classic book.

Considered one of NTU's most popular lecturers, Prof. Ou is using her new book as teaching material for a new NTU massive open online course (MOOC) offered through the Coursera platform. Called "Dream of the Red Chamber 2: The Worship of Maternal Figures," the course has won rave reviews from students since commencing on August 26. The high readability and abundant supplemental material of the new book is enriching Ou's online course presentation of new perspectives on the essence of ancient China to countless present-day lovers of *Dream of the Red Chamber*.

Teaching and Learning

New Master's Program in Statistics Aims to Meet Growing Demand for Statisticians

As we enter the era of big data, statistics is gaining new and expanded applications across a broadening spectrum of fields. NTU has responded to this trend by establishing its first Master's degree program in statistics to meet the growing demand for professional statisticians with interdisciplinary qualifications. The program enrolled its first students in the first semester of the 2014 academic year.

The new Master's program is founded on intercollegiate and interdisciplinary integration as well as cooperation with the business community. Drawing on the resources of 18 departments and graduate institutes across eight colleges, and pairing them with the expertise of 37 full-time professors, the program seeks outstanding university graduates from a variety of disciplines who demonstrate strong foundations in mathematics, science, as well as talent in statistics.

Depending on their areas of specialization, students are assigned to one of the program's three divisions—the Division of Biomedical Informatics and Biostatistics, Division of Engineering and Environmental Statistics, or Division of Management and Social Statistics—where they receive instruction and training in the theory and practice of statistics. The students are also introduced to businesses and government agencies and are encouraged to apply for internships. Students in the program have the option of writing their Master's thesis in either statistical methodology or statistical theory and research. Graduation requires 24 credit hours as well as a significant thesis.

Prof. Jen-Pei Liu of the Department of Agronomy's Division of Biometry has been appointed the program's first director. The renowned



- 1 Students attend a lecture as part of the new Master's degree program in statistics.
- 2 Students in the Master's degree program in statistics pose for a group photo during a field trip.

biostatistician has earned many accolades both domestically and internationally. Prof. Liu was also the first scholar from a Taiwanese university or institute to be elected as a Fellow of the American Statistical Association in recognition of his influential research, teaching, and consultation work with business and government.

With the rise of big data, major international internet and software companies, such as Google, have begun hiring more and more statisticians to work on cloud computing and business applications based on big data statistics. As a result, professional statisticians ranked as the third and fourth best occupation in the United States in 2014 and 2015, respectively. Here in Taiwan, Taiwan Semiconductor Manufacturing Company has begun to actively seek statistical analysts to work on big data.



Student Survey Leads to Campus Map of Vegetarian Food

The students who took Prof. Ning-Sing Shaw's general education course "Introductory Nutrition and Food Safety," offered by the Department of Biochemical Science and Technology during the 2014 academic year, worked together to create a precious map showing the locations of campus food vendors that offer vegetarian options. Called the "NTU Healthy Eats Campus Map," the students' handy guide is designed to encourage students and faculty members to increase their intake of vegetables by helping them find healthy foods on campus.

As part of their coursework, the students learned to examine and manage their eating habits and understand the foods they ate and those they didn't. They discovered the main food group that university students tended to consume the least was vegetables.

Aiming to help others know where they can eat more vegetables, the students began to share recommendations for campus eateries that provide good vegetarian choices and used the information in designing personal eating plans. Their records over a seven-week period revealed that quite a few students consumed an average of only one serving of vegetables per day. With steady practice, these students succeeded in doubling their vegetable intake to at least two servings per day.

Craving more vegetables, the students decided to divide into groups and spend three months conducting a comprehensive survey of the healthier options offered at campus eateries. Visiting 46 food vendors in all, the students rated each vendor on the

nutritional value of its offerings and the availability of four types of plant-based foods: vegetables, fruits, whole grains and roots, and bean-based foods. Afterwards, they compiled their results into the "NTU Healthy Eats Campus Map" that now helps everyone in the NTU community to locate healthy vegetarian food while on campus.

In their survey, the students found that buffet-style cafeterias remained the best choice in variety of vegetables offered as well as flexibility of portion sizes. Unsatisfied with the current offering of vegetarian food on campus, the students also voiced a number of criticisms and expectations. One student noted that, "Besides convenience, I wish the university would do its best to provide enough healthy vegetarian meals," while another one pointed out, "Many of the set meals offered by food vendors are severely unbalanced in terms of nutritional value." Another student criticism concerned the insufficient availability of fruit at campus food vendors.

► The NTU Healthy Eats Campus Map reveals the best spots for vegetarian food around campus.





On June 12, a new exhibition hall that is aimed to preserve and share NTU's rich history opened at the School of Forestry and Resource Conservation. Members of the NTU community and general public are invited to stop by the Forestry Story House to view its fascinating historical artifacts and rare plant and animal specimens, and learn about the school's role in forestry conservation and the development of forestry as an economic sector in Taiwan.

The Forestry Story House is located on the first floor of the Forestry Hall, a colonial-era building that NTU President Pan-Chyr Yang describes as "one of the most well-preserved department buildings along Royal Palm Boulevard," as well as "among the most representative of NTU's campus atmosphere."

The exhibition hall features displays introducing some of Taiwan's most important bird species. When removing the lids from the displays' wooden boxes, visitors can listen to the birds' melliferous calls. In another corner, glass display cases show specimens of various types of wood from Taiwan's forests as well as unique wood craftworks from around the country. The Forestry

NEW FORESTRY STORY HOUSE SHARES HISTORY OF FORESTRY SCHOOL

House also features exhibits of antique scientific instruments and equipment, as well as photographs that date as far back as the earliest days of the School of Forestry and Resource Conservation and the NTU Experimental Forest.

After checking out these displays, visitors can peruse the art corridor to the left of the exhibition hall and then go up to the third floor of Forestry Hall to inspect the thousands of plant specimens in the Herbarium of NTU.





TIME TO PICK APPLES!

High in the majestic mountains of Nantou County, apple harvesting season has come around again at NTU's Highland Experimental Farm, and everyone is invited to make the trip to join in the farm's annual apple picking activities from October 24 to December 6.

The farm's scenic terraced orchards are planted with 1,400 apple trees representing around ten varieties of apples, including the delicious Fuji apple. Though the orchard is normally used to train student interns, the farm has welcomed members of the public to harvest apples every fall since 2006.

In addition to picking apples, participants can learn about the traits and cultivation methods of different apple varieties. They are also welcome to take part in other horticultural and ecological experience activities, including guided tours of the farm and morning bird watching excursions. The farm has even designed lovely reusable apple baskets to ensure the annual harvest activities create no unnecessary waste.

