

# NTU, Mediatek to Develop 5G Wireless Technology

Kuwait U Delegates Seek Research  
Initiatives

Quality Service Training for Staff

NTU Observatory Captures Images of  
Supernova

**Azalea Festival**  
Special Report



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APRIL 2014 / NO. 41

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## NTU AT A GLANCE

Museum Built Around Asia's First Linear Particle Accelerator



### From VP's Office

As Taiwan's society changes, so do the functions of its universities. Before, the principal function of a university was the creation and transmission of knowledge; a university was a place for the production of new knowledge and new technologies. Today, the functions of a university have become more diverse; a university now aims to enable students to project their influence in society, while also emphasizing the realization of students' personal career plans and ideals. In addition to NTU's original eleven colleges, we have added three professional colleges in order to cultivate professionals in specialized fields. NTU's true strength is that besides professional training, it provides students accomplishments on a scholarly level, while creating space for the diversity of ideas students hold regarding the future.

NTU's outstanding traditions are not only a symbol for ethnic-Chinese people, but also a spiritual indicator for the ethnic-Chinese world at large. Students now enjoy more participation in society than in the past and should make good use of their time to think deeply and pass on NTU's traditional academic spirit. Simply participating in society actively without engaging in further self reflection is not necessarily beneficial to the progress of society. Confronting the intense competition of today, the functions of a university must also serve to inspire the future development of the nation. A university should not be the finish line of academics, but rather the starting line. Moreover, a university must orient itself toward the world and cannot confine itself to Taiwan.

At NTU's Chubei Branch, we are currently bringing the Bi-Chen Building to life, planning the sports area, professional park, Chubei Park and high-technology R&D industry-academia cooperation park. Also, introducing NTU's atmosphere of the arts and humanities, the Department of Drama and Theater has organized arts and culture activities and NTU Press has provided performances, exhibitions and publications. Our Chubei Branch also offers lectures broadcast simultaneously from the NTU Main Campus as well as continuing education courses in order to build good relations with local residents.

NTU has plans to cooperate with the American-Chinese entrepreneur Patrick Soon-Shiong, whose work overlaps with the genomics projects headed by NTU President Pan-Chyr Yang. Soon-Shiong has supported the USA Genomic and UK Genomic projects and hopes to establish a Taiwan Genomic project here at NTU. He is scheduled to visit NTU in July.

*Ching-Ray Chang*

Vice President  
Ching-Ray Chang

# FILMMAKER DISCUSSES POPULAR ENVIRONMENTAL DOCUMENTARY

*Director Chi Po-lin revealed that he chose to expose ecological destruction despite his worries it would hurt the farmers responsible*



Aerial photographer Chi Po-lin, director of the 2013 Taiwanese documentary film "Beyond Beauty: Taiwan from Above," delivered a talk at the NTU Public Forum on February 24 on the making of his film as well as the complicated motivations behind it. The film highlights Taiwan's natural beauty as well as environmental devastation, and has become the highest-grossing documentary of all time in Taiwan.

NTU President Pan-Chyr Yang expressed the hope that Chi's speech would further promote the sentiments and ideas behind "Beyond Beauty" and called on all students and faculty members as well as the public to work together to protect Taiwan's environment.

Chi, who has worked as an aerial photographer for two decades, revealed that his

initial motivation was simply to document the landforms of Taiwan from the air. However, he had contradictory feelings while making the film. He began to worry about exposing the scenes of ecological destruction because it would hurt the farmers on the front lines. Nonetheless, the damage was extreme, and he feared the onset of greater disasters to come.

Chi noted that a 90-minute documentary required a budget of NT\$60 million in 2008, adding that many said the effort was just a pipedream. Working as a civil servant, Chi realized NT\$60 million would allow him to retire, and he daydreamed about buying a house or traveling around the world. This caused him deep anxiety. He hoped to be realistic but also to fulfill his dream, and he remained unsure about retirement. Meanwhile, he also

watched his entire family finances deteriorate. It was only after witnessing the spanning swaths of damage caused by Typhoon Morakot that Chi mustered the motivation to proceed; he hoped to remind people to cherish Taiwan's land.

Regarding the closing scene of "Beyond Beauty" that shows a group of indigenous people waving Taiwan's national flag atop Yushan mountain, Chi said that it appears due to school principal Ma Pi-de's love of his land and country. Each time Ma would take his indigenous students overseas for competitions, they would be permitted to wave only Chinese Taipei flags; but, coming from Nantou County, they would ask why they had to use a flag from Taipei City. The principal therefore pledged to make a major contribution to promoting Taiwan within his lifetime.

# HIGH SCHOOL STUDENTS VISIT CAMPUS TO EXPLORE AZALEA FESTIVAL EXPOS

*President Pan-Chyr Yang declares confidence that NTU will continue to draw Taiwan's finest high school students*



Participants watch balloons set aloft during the opening ceremony of the Azalea Festival.



Visitors enjoy Azalea Festival activities, which included a variety of participatory activities and guided campus tours designed especially for alumni.

The 2014 Azalea Festival kicked off with an opening ceremony on the plaza of the NTU Sports Center in the morning of March 15. On the weekend of March 15 and 16, the annual NTU Departments Expo and NTU Student Clubs Expo were held in conjunction with the Azalea Festival. The parallel expositions provided a fascinating offering of things for visitors to do and see—from guided campus tours and arts and culture activities to musical performances and lectures—as they enjoyed the pleasant spring weather and strolled amid the campus' countless blooming azaleas.

During the opening ceremony, NTU President Pan-Chyr Yang stated that high school students and members of the public are invited to observe a different face of the NTU campus during the Azalea Festival. He said the visitors can check out the countless student clubs and learn about the university's outstanding accomplishments as well as the campus' unique culture. President Yang also told the visiting students he hopes that, after

observing and learning more about NTU, they would choose the departments of their dreams at NTU.

Later, in response to a question from the media regarding major initiatives on the part of Hong Kong universities to interview high school students in Taiwan and to offer scholarships to study in Hong Kong, President Yang said he believes there is no need to worry too much about this because talent is moving around the globe, noting that students can go to university in Hong Kong and return to NTU for graduate school. Yang added that he has confidence NTU is sufficiently attractive and will continue to draw Taiwan's finest high school students. He went on to state that he hopes the Ministry of Education will relax existing restrictions on the recognition of university credits so as to enable universities to develop their special characteristics and attract more outstanding students from abroad.

## JAZZ BANDS SWING ODEUM SQUARE WITH SPRING CONCERT



The NTU Riot Jazz Orchestra and SuperGotan Ensemble filled NTU's Odeum Square with pulsating swing melodies during a concert called "Kiss the Spring" on the night of March 15. Organized by the NTU Center for the Arts, the concert celebrated the NTU Azalea Festival as well as the recently-completed renovation of Odeum Square's wooden stage.

Under clear spring skies, an audience of over 300 spread out across the square to take in the sounds of jazz during the two-hour performance. Sitting or lying leisurely on the grass, everyone in the crowd swayed to the pulsing music.

Jazz-loving NTU students and alumni formed the NTU Riot Jazz Orchestra in 2009. Under the leadership of renowned jazz musician Shawna Yang, the big band has wowed audience after audience with its high-energy shows. Though formed as a student club, the band has gone on to prove its professional talent.

SuperGotan Ensemble was founded by pianist and retired NTU musicology professor Jia-Duo Kang together with three NTU graduates: erhu player Wen-Bin Liang, guitarist Shu-Yu Bruce Peng, and bandoneon player Chen-Chung Lee. To add visual spice to the "Kiss the Spring" concert, the ensemble invited NTU alumnus Daniel Liu and his wife Anna Chin, who are professional tango dancers, to accompany their performance.

NTU President Pan-Chyr Yang, Vice President Ching-Ray Chang and Chief Director Tung Shen of the NTU Center for the Arts also joined the audience to enjoy the jazz and pleasant weather. Addressing the audience, President Yang expressed his aspiration to build NTU into an ever more beautiful and interesting campus and to make beauty an integral part of campus life.



Student military enthusiasts show off their hobby during the Student Clubs Expo.

First held in 1997, the NTU Departments Expo and NTU Student Clubs Expo now have returned to campus each spring for 18 consecutive years. The Departments Expo provides an excellent opportunity for the university's departments to present their curricula, faculties, and plans for future development. The NTU Student Clubs Expo features exciting performances and activities that highlight the rich variety of extracurricular activities at NTU.

This year's Azalea Festival offered a range of exclusive events especially for alumni, including an alumni card application event at the NTU Main Gate, campus tours and participatory activities. These special activities give alumni the chance to return to the campus of their youth and reunite with old friends and schoolmates.

## Exhibition and Concert in Remembrance of the King of Formosan Song



⊗ Hong Wei-Ting shares memories of her father Hung Yi-Feng, who is revered as the King of Formosan Song.

NTU Library held an opening ceremony and memorial concert to kick off the month-long exhibition "The One We Yearn For—The King of Formosan Song Hung Yi-Feng" on March 5. Members of Hung's family, including Ai-Ling, Hong Jing-Yao, Hong Rong-Liang, and Hong Wei-Ting, were joined by renowned celebrity and master of ceremonies Peng Wei-Shao and singer and national treasure Ji Lu-Shia in cutting the ribbon to officially open the exhibition. During the concert, called "Remembering Hung Yi-Feng," Peng Wei-Shao served as MC while Ji Lu-Shia and Hung family members Ai-Ling, Hong Rong-liang, and Hong Wei-Ting took turns singing Hung Yi-Feng's classic Taiwanese songs and sharing anecdotes that recalled his illustrious life.

Hung Yi-Feng is revered as the King of Formosan Song for the central role he played in the history of Taiwanese popular music. The course of Hung's life and musical career reflect the historical development of early Taiwanese pop music.

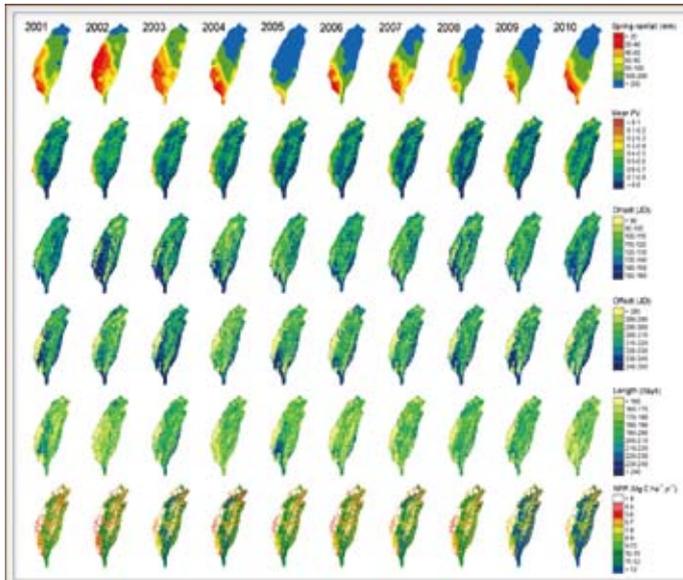
At the end of 2012, NTU Library and members of the Hung family met to discuss the donation and digital archiving of Hung's manuscripts and artifacts. The family generously offered to provide their father's manuscripts for digital archiving and to donate his materials and artifacts to the library in the name of the Hung Yi-Feng Culture and Art Foundation. Among the important historical materials NTU Library was honored to receive were audio and visual materials, manuscripts,

photographs, sheet music, notebooks, and news clippings.

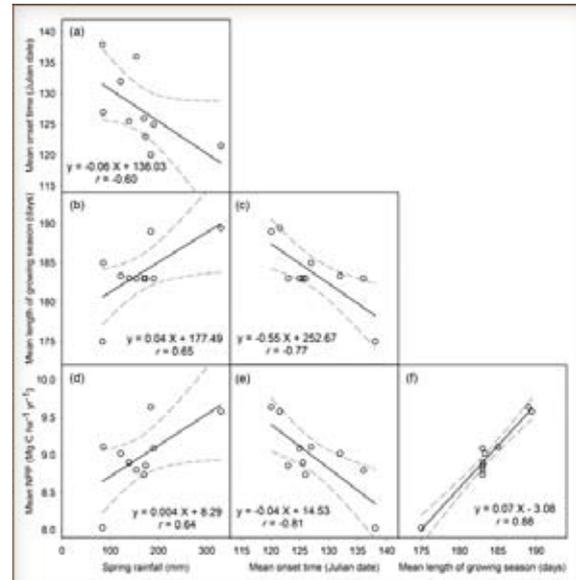
NTU Library organized the exhibition with the twin goals of honoring the selfless spirit the Hung family demonstrated in donating Hung's manuscripts and artifacts to the library for archiving and digitalization as well as sharing with the greater public the accomplishments Hung made over his long career.

During the month of the exhibition, the library also screened films about Hung's life and music, including "Abba," a documentary directed by his son and professional singer Hong Rong-liang.

# SPRING EL NIÑO DROUGHTS DELAY AND IMPEDE VEGETATION GROWTH IN TAIWAN



Ⓐ This graphic shows the spatial distribution of accumulated spring rainfall (Feb. & Mar.), vegetation coverage, and phenological parameters in Taiwan between 2001 and 2010.



Ⓑ The study investigates the relation between spring rainfall (Feb. & Mar.) and phenological parameters.

**R**esearchers at the Department of Geography recently published a study in the international journal *Environmental Research Letters*. In the article, which was featured in the *ERL*'s special issue "Focus on Extreme Events and the Carbon Cycle" in December, the team details its evaluation of the temporal dynamics of vegetation onset associated with the El Niño/La Niña-Southern Oscillation (ENSO) and the influence of onset time on vegetation productivity in subtropical Taiwan.

Vegetation phenology, which is the investigation of plant lifecycles and their relationships with seasonal climate variations, reflects the impacts of climate change on a terrestrial ecosystem. By analyzing vegetation phenological metrics, including the onset and offset times of summer growing seasons and the length of summer growing seasons, the team found that spring drought caused by ENSO significantly influences vegetation productivity in Taiwan.

The team obtained a time series of photosynthetically active vegetation cover data spanning the decade of 2001-2010 from Moderate Resolution Imaging Spectroradiometer (MODIS)

reflectance data and analyzed the data using the phenological analysis toolbox TIMESAT in order to determine the spatial distribution of vegetation phenology in Taiwan.

The analysis showed that a dry spring (February and March) with less than 40 mm of rainfall directly caused the delay of the start of the subsequent growing season and that this seasonal drought impeded vegetation growth in the subsequent season as well. The team attributed this to the delayed impacts of moisture stress related to the preceding ENSO events.

The team discovered strong positive correlations between annual vegetation productivity and both vegetation onset times and lengths of the growing seasons, which it said might indicate that accumulated rainfall in the spring governs annual vegetation productivity.

The team noted that climate forecasts point to coming increases in the frequency and intensity of ENSO-related spring droughts, which could mean dire consequences for ecosystem metabolism.

## Materials Engineer Receives 2014 TMS Brimacombe Medalist Award

**P**rof. C. Robert Kao of the Department of Materials and Science Engineering was awarded the TMS Brimacombe Medalist Award for his outstanding contributions to the study of phase equilibria and interfacial reactions in materials used in electronic devices at this year's annual meeting of the Minerals, Metals, and Materials Society (TMS) on February 18. The award recognizes accomplished and promising materials scientists and engineers, and serves as an antecedent to the society's pinnacle awards.

TMS is an international organization that is dedicated to the study and promotion of materials and material engineering. The society was established in 1871 and has grown to become one of the world's largest as well as most historical engineering associations. The annual meeting of the TMS is also one of the world's most important academic events in the field of materials.

In addition to Prof. Kao, several professors, scholars and students from Taiwan were also present at this year's event, which was held in San Diego during February 16- 20.

Prof. Kao graduated from NTU's Department of Chemical Engineering in 1986, and has 19 years of experience working as an educator. His research



Prof. C. Robert Kao accepts the TMS Brimacombe Medalist Award from Minerals, Metals and Materials Society President Elizabeth Holm.

interests include the thermodynamics and kinetics of interactions between material matter. Kao is currently a chief editor of the *Journal of Materials Research* and also serves as a visiting editor and has been listed on the editorial board of several international academic journals. Furthermore, Prof. Kao is the recipient of one of the highest honors in the field of materials, the 2012 Fellow of the American Society for Metals (ASM). He has also been invited to deliver speeches at internationally acclaimed meetings and conferences on several occasions, and has served as speaker or discussion leader at the Gordon Research Conferences. His current h-index is 31.

## NTU Ranked Among Top 51-60 Universities for World Reputation



**N**TU has earned a ranking among the top 51 to 60 global university brands in the 2014 Times Higher Education World Reputation Rankings. This strong performance reflects the university's persistent effort to improve the quality of its education and research and elevate its competitiveness and visibility among the world's leading universities.

The annual THE rankings rate the world's 100 most elite universities using an invitation-only academic opinion survey of distinguished scholars with an average of 18 years of expertise. This year's questionnaire was distributed among 10,536 senior academics in 133 countries.

The continued support of the Ministry of Education's Aim for the Top University Project has enabled NTU to pursue innovative research and establish interdisciplinary research centers with international partners, while encouraging our faculty to take part in major academic projects both in Taiwan and abroad. Our opening

of cutting-edge international research centers, including the Intel-NTU Connected Context Computing Center, International Center of Excellence in Cancer Research, and International Center of Excellence on Intelligent Robotics and Automation Research, combined with our abundant research and development resources has created greater opportunities to collaborate with leading global experts. In addition, we have enhanced our international visibility and competitiveness through extensive exchanges and research collaboration with top-ranking universities around the world.

# NTU and France's Elite AgroParisTech Strengthen Partnership

*Adding to dual PhD degree programs, two new agreements pave the way for greater academic exchanges and research*

In March, NTU and France's AgroParisTech strengthened their academic partnership by signing two new agreements, one that facilitates scholarly exchanges and collaboration and another that promotes student exchange programs. Since establishing partner relations in 2009, the two institutions, working under the framework of the Agreement on Mutual Recognition of Studies and Degrees for Pursuing Higher Education at French and Taiwanese Institutions, have

cooperated on dual PhD degree programs. The new agreements

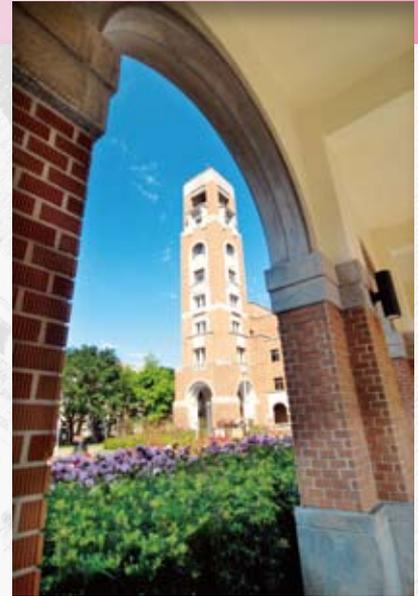
pave the way for greater academic exchanges and research cooperation between the two institutions.

AgroParisTech, which is formally called the Paris Institute of Technology for Life, Food, and Environmental Sciences, is a member of the Paris Institute of Technology, or Paris Tech, which is a group of ten elite French science and engineering graduate institutes. In recent years, the French government has introduced policies for education and research resources that cluster the country's leading institutions of higher education in various fields into elite consortiums such as Paris Tech. AgroParisTech is recognized as one of France's finest academic institutions in agriculture, forestry, life science, and environmental science.

AgroParisTech was formed in 2007 through the merger of three existing institutions: the Institut National Agronomique Paris-Grignon, which is considered France's premier institution in agriculture, and the National School of Rural Engineering, Water Resources, and Forestry and École Nationale Supérieure des Industries Agricoles et Alimentaires, both of which play prominent roles in water, forest, and environmental management. AgroParisTech operates across nine campuses, has an enrollment of 2,000 students and 450 PhD students and employs nearly 1,200 instructors and research personnel. International students make up 20% of the institution's student body.

AgroParisTech is divided into five departments that boast advanced, comprehensive curricula/facilities. The institute's Master of Science degrees cover 25 programs across the life science, environmental science, and technology, which are its most popular degrees. Students also enjoy opportunities to take courses and engage in business internships at AgroParisTech's partner universities. Moreover, the institute offers the Erasmus Mundus Master Programmes and ParisTech Professional Masters Programs.

Internationally, AgroParisTech is a member along with four other leading European universities of the IDEA League, and it enjoys partnerships with more than 100 universities around the globe. It also participates in Europe's Erasmus and Erasmus Mundus programs as well as bilateral cooperation programs between Europe and the United States.



## Delegation Attends International Education Conference in Seoul

*Associate Dean for International Affairs Bennett Fu chaired a session seeking new ideas for existing student exchange programs from the perspective of students*

A delegation of NTU representatives attended the 2014 Annual Conference and Exhibition of the Asia-Pacific Association for International Education in Seoul, South Korea from March 17-20. One of the most important meetings for international policy makers and educators in the Asia-Pacific region, this year's conference explored the theme "Enhancing Cross-Border Education Cooperation with Universities in the Asia-Pacific: From Past to Present and the Future."

NTU's delegation included Associate Dean for International Affairs Bennett Fu, College of Management Vice Dean of Global Affairs and Global MBA CEO Chan-Jane Lin, and their colleagues from the College of Management and Office of International Affairs. Associate Dean Fu joined representatives from the University of California and Waseda University in presenting the conference session "Mobility of Students, Educators and Researchers Beyond the Student Exchange Program: Catering to International Student Needs."

Associate Dean Fu served as session chair, while his co-chairs were Dr. Mary McMahon, the regional director for Asia and Africa of the University of California Education Abroad Program, and Dr. Masakazu Iino, the dean of the Center for International Education at

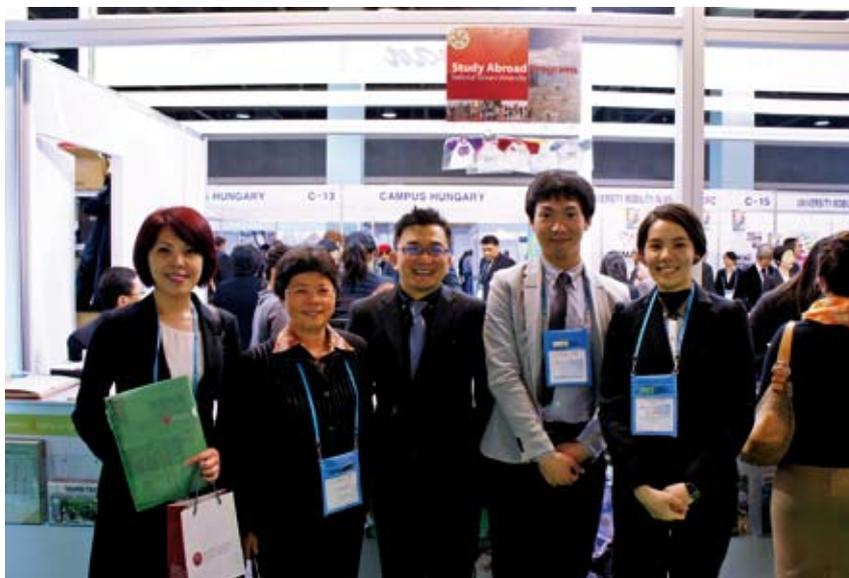
Waseda University. The session considered approaches for injecting new ideas into existing student exchange programs from the perspective of students. The session's three sub-topics were: "Addressing Changing UC Student Needs," "Go Global Japan Project -- A Case from Waseda University" and "Beyond Student Exchanges: Catering to Student Needs with NTU Summer+."

In the case of UCEAP, federal budgets cuts for public universities during the 2009-2010 academic year forced UC schools to raise tuitions by as much as 50%, which led to a major decline in students taking part in study abroad programs. UCEAP went on to introduce comprehensive policy reforms over a period of three years. This included three major initiatives: new program development; marketing and presentation of programs on

website; and alumni engagement and scholarships.

UCEAP is cooperating with NTU for the first time this summer, and more than 30 UC students have already registered for NTU's Summer+2 Program for Laboratory Research and Culture.

Waseda University, faced with Japan's troubled economy, an aging society and low birthrate, aims to offer courses that draw international students while encouraging Japanese students to study overseas. It has moved to adjust its current academic year in order to allow Waseda students to participate in overseas summer programs and provide greater flexibility to international students. Waseda also aims to ensure that by 2022 all Waseda undergraduates study overseas before graduating.



## Kuwait U. Delegation Visits for Five-Day Training and Exchange Program

*Sixteen-member delegation expresses hopes of collaborating in medicine, bioengineering, and electrical engineering and computer science*



NTU officials welcomed a major delegation of 16 officials and administrative staff from Kuwait University to NTU on March 17. The delegation had come to take part in a five-day training and exchange program from March 17- 21. On hand to receive and greet the Kuwaiti guests were NTU Vice President for Financial Affairs Ming-Je Tang, Dean of the Office of International Affairs Luisa Shu-Ying Chang, and Personnel Department Director Yun-Ju Huang.

The program was designed to promote the learning and sharing of experiences and to help both schools to achieve a more comprehensive administrative environment. It was jointly organized by NTU's School of Professional and Continuing Studies, Office of International Affairs, Office of Research and Development, Office of Academic Affairs, Personnel Department, Graduate Program in Translation and Interpretation, and Department of Foreign Languages and Literatures.

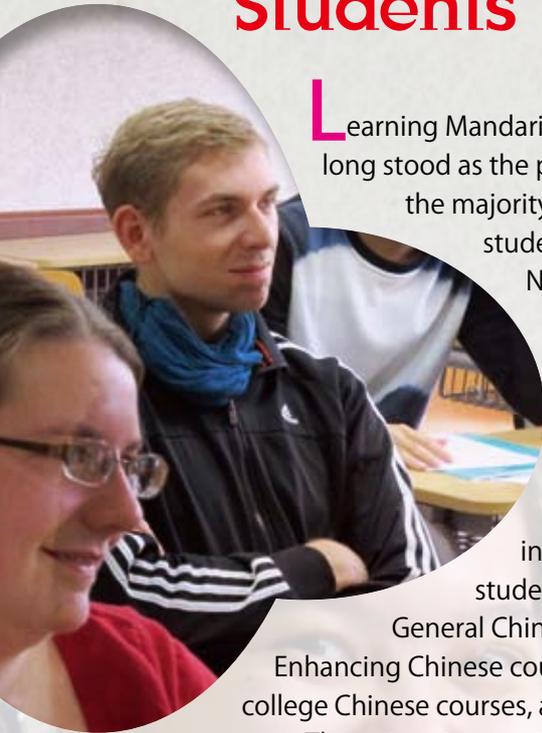
As both schools serve as leading higher-education institutions in their respective countries, the exchange program bore deep significance for both countries. At the program's opening ceremony, OIA Dean Chang expressed her hope that the exchanges would open the door for further collaboration that would be mutually beneficial to both universities.

Vice President Tang discussed the importance of comprehensive administration in NTU's operations

at every level. In his talk, "The Management of a University," Vice President Tang drew on his personal experience in stating that as a platform for education, the university bears the responsibility to create and transmit knowledge. While the creation of knowledge is undertaken by the school's research system, and the transmission of knowledge by the educational structure, both aspects are essential to the operations of an exceptional university. Tang then emphasized the importance of the governance system and stated that the system serves as a bridge for communication between faculty and students. He added that a university should be strategic in choosing its development path so as to create room for professionalism as well as outstanding performance.

NTU and KU began their academic and administrative exchanges several years ago when a delegation of KU officials visited NTU in 2011. Vice President Tang then led a team of senior NTU administrative staff on a reciprocal visit to KU in 2013. As to academic exchanges, KU has expressed its hope of establishing collaborative research projects with NTU in medicine, bioengineering, and electrical engineering and computer science. Two NTU students have also received scholarships to study at KU's Language Center.

# New Applied Chinese Courses Offer Advanced Options for International Students



Learning Mandarin Chinese has long stood as the principal reason the majority of international students come to NTU. As of the fall semester of 2012, NTU had classified Mandarin language courses for international students, including

General Chinese courses, Enhancing Chinese courses, and Pre-college Chinese courses, as university credit courses. The university provides international students six to ten hours of Mandarin class each week free of charge. During the 2012-2013 academic year, more than 700 exchange students and international degree students took advantage of these Mandarin course offerings.

Now, this spring semester NTU has introduced the three new Applied Chinese courses: Exploring Taiwan, Business Chinese, and Contemporary Cross-Strait Mandarin Chinese.



These courses are two credit hours each, and are taught completely in Mandarin. With these new courses,

the university hopes to provide international students greater options for learning Mandarin beyond the General Chinese courses

while also emphasizing language proficiency and professional knowledge.

These Applied Chinese courses are designed for intermediate and advanced students and provide clear instruction in order to ensure that international students fully comprehend their coursework. The courses aim to strengthen students' abilities at listening, speaking, reading, and writing while also expanding their Mandarin proficiency as well as professional knowledge in their specialized fields. The university also views these courses as providing opportunities for international students to learn more about various aspects of Taiwan, such as its arts and culture, nature, society, and business environment, as well as to gain a comparative understanding of the Mandarin Chinese spoken on either side of the Taiwan Strait.

NTU offers a variety of Mandarin courses designed for international students from diverse backgrounds. The university hopes to not only meet the Mandarin learning needs of international students but to impart a deeper knowledge of Chinese culture so as to create more opportunities for development.



## Astronomers Photograph Early Supernova Burst

*The NTU observatory was among the few to capture important rare images prior to a stellar explosion's official confirmation*

Astronomers at the Mt. Fenghuang Astronomical Observatory high in the mountains of the NTU Experimental Forest had the rare fortune of capturing images of a newly-discovered supernova three days prior to its official confirmation and naming in January. The lucky NTU stargazers observed the SN 2014J supernova in the early hours of January 19, collecting important early images of the stellar explosion in their most significant accomplishment in many years.

The SN 2014J supernova is a type-Ia supernova situated in the neighboring starburst galaxy Messier 82, also called the Cigar Galaxy, and, at a mere 11 million light years away from the Earth, it is the closest type-Ia supernova discovered since 1972.

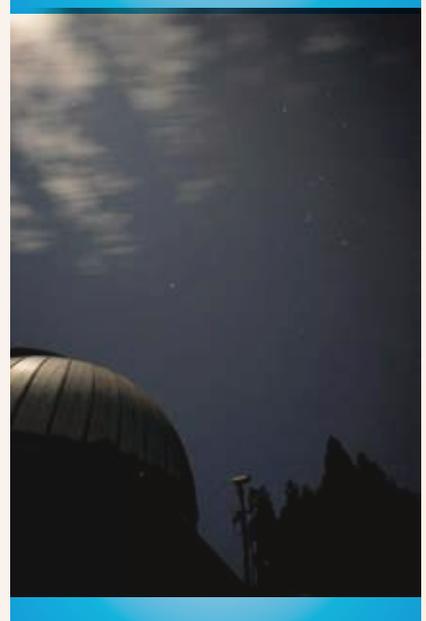
The NTU astronomers were among the few to capture images of the supernova in the early stage of its burst; it is now known that astronomers at the Lick Observatory in California and Itagaki Astronomical Observatory in Japan also observed the supernova before its official discovery. Images of a supernova in the early stage of its explosion are rare and of great scientific value. In most cases, a supernova has already entered the middle stage of its brightness by the time it is officially confirmed, and the international astronomical



community has focused its gaze.

It turns out that a group of amateur astronomers happened to be along for the ride that early morning, as Prof. Jiun-Huei Protty Wu of the Department of Physics and Graduate Institute of Astrophysics was leading a winter astronomy camp that was jointly organized with the Taiwanese edition of BBC Knowledge Magazine, which had recently won a Golden Tripod Award For Publications from the Ministry of Culture. Postgraduate student Wen-Hsuan Chang was manning the observatory's photography system when the images were being captured. Chang has headed the NTU Astronomy Club and has many years of astronomical observation experience.

The Mt. Fenghuang Astronomical Observatory stands at an elevation of 1,800 meters in Nantou County. The idea for its erection came from Prof. Ya-Nan Wang of the Department of Forestry and Prof. Woei-Yann Pauchy Hwang of the Department of Physics. As director of the NTU Experimental Forest, Prof. Ya-Nan



NTU stargazers at the Mt. Fenghuang Astronomical Observatory captured some of the first images of the SN 2014J supernova in the early hours of January 19.

Wang received reconstruction funds in the wake of the 921 Earthquake that she devoted to the planning and construction of the observatory. Prof. Wu was put in charge of planning the observatory's telescope, which boasts a primary mirror that is 63-centimeter in diameter. When adjustments were completed in early 2005, the telescope became the first large-diameter telescope to be manufactured in Taiwan.

## NTU Surgeons Have 100% Success Rate in Portable Heart Device Implants

NTU Hospital performed its first portable ventricular assist device implant in 2011 and a Mr. T became its latest recipient last September



Portable ventricular assist devices improve both survival and quality of life for end-stage heart failure patients.



NTU Hospital heart surgeons have implanted four portable ventricular assist devices.

Heart surgeons at NTU Hospital have had a 100% success rate for the implantation of portable ventricular assist devices (VAD) since first performing the complicated procedure in April 2011. Portable VADs improve both the survival and quality of life of patients suffering from end-stage heart failure. The hospital's four portable VAD recipients all recovered stable heart functions, returned to their careers, and continue to enjoy fulfilling lives.

In September 2013, Mr. T, a recipient of extracorporeal membrane oxygenation (ECMO) under intensive care, became the hospital's latest portable VAD implant recipient.

Prior to receiving the implants, the recipients all had suffered severe heart failure and had been receiving longterm treatment with cardiac stimulants to remain alive. The severity of their condition made them all eligible for priority placement on Taiwan's current heart transplant waiting list. Three of the patients had type O blood and had waited in vain for a matching heart donor for a long time. Following numerous clinical discussions, the patients were selected to receive portable VAD implants. The latest patient, Mr. T, had type A blood and had been receiving ECMO due to sudden heart failure.

Heart transplants remain the most effective treatment for end-stage heart failure. However as Taiwan organ donations fall short of patients' needs and heart donations averaged only 85 per year, many patients passed away while on the waiting list during the last five years.

The greatest concern for patients suffering from end-stage heart failure is that they will experience multiple organ failure and die while waiting for a suitable donor. Heart patients whose condition continues to deteriorate might be required to resort to ECMO or such devices as VADs to stay alive. However, the older generation of VADs were very noisy and heavy which limited a patient's mobility. As patients needed to remain in the hospital to use the older VADs and had to endure a high-decible noise, the devices were only appropriate for short-term use.

NTU Hospital continuously strives to work on the cutting edge in the field of heart surgery, constantly seeking and introducing new procedures. As a result of the recent case of Mr. T, whose portable VAD implant enabled him to return home even after being kept alive on ECMO, NTU Hospital's heart surgeons have become fully determined to move forward with portable VAD implants to give light and hope to even more patients.

# Service Learning Volunteers Help Indigenous Children's Choir

*Prof. Chun-Neng Wang says his service learning course plants a seed in the hearts of the volunteers, stirring them to consider how they might give back to society*

disadvantaged and dysfunctional indigenous families from eleven tribal villages. The children spend their weekends at the school to take part in choir practice and learn math, reading, science, and English. The Vox Nativa Choir has gone on to win accolades and awards in Taiwan as well as in overseas competitions.

Prof. Wang says that although some NTU student volunteers can't seem to put down their smartphones or homework and concentrate on helping out while at the school, others wholeheartedly throw themselves into the various chores and tasks at hand, such as mending clothes or organizing a storeroom.

Longtime volunteer Min-Pan Hsieh, a fifth-year student of the Department of Bio-Industrial Mechatronics Engineering, cooperated with other student volunteers in establishing the Vox Nativa Service Club this year. Hsieh is presently recruiting NTU student volunteers to serve as longterm companions for students who graduate from Vox Nativa because they often experience culture shock and encounter various challenges when leaving their mountain communities to go to university.

Hsieh says that many NTU students experience major culture shock themselves while volunteering at Vox Nativa, adding that this can open their eyes to a world greater than themselves. Prof. Wang views the experience of helping out at the school as planting a seed in the hearts of the volunteers that gives their minds a chance to escape the highly-competitive world of NTU and consider how they might give back to society.

**W**hen you mention service learning courses to students at NTU, they usually just think of their weekly meetings to clean up around their department building or volunteer teaching at a nearby elementary school. However, Prof. Chun-Neng Wang of the Department of Life Science believes that this common form of service fails to reach the people who are really in need and offers few learning opportunities. So, several years ago he created a service learning course that lets NTU students volunteer their much-needed service at Vox Nativa Children's Choir and School at Luona Elementary School in Nantou County's remote Xinyi Township.

Vox Nativa Children's Choir and School is a nonprofit weekend music school that was founded in 2008. With Luona Elementary School Principal Ma Pi-de serving as choir director, the school recruits elementary school students from



## WORLD CLASSICS LECTURE INTRODUCES BOOK BY PROPONENT OF RELIGIOUS PLURALISM



The sixth lecture in the 2013 lecture series for the Ministry of Science and Technology's Classic Books Translation and Annotation Project was held at NTU on March 12. The lecture, delivered by Prof. Yi-jia Tsai of the Department of Religious Studies at Fu Jen Catholic University, discussed *An Interpretation of Religion: Human Responses to the Transcendent*, the classic book written by the English philosopher of religion and theologian John Hick in 1989.

Prof. Tsai began by introducing the book's author, whose personal development mirrored his influential concept of religious pluralism. In academics, Hick dropped his pursuit of a law degree to study philosophy; in his religious faith he abandoned the Evangelical Christianity of his youth and went on to develop close contacts and a deep familiarity with other world religions.

Prof. Tsai said the central concept of Hick's classic book is that

there are three levels in people's interpretations of their experiences, namely, nature, ethics, and aesthetics, and concerning religion that religious experiences are a type of wholistic experience that occurs between a person's physical body and soul. She said that Hick claims in the book that there are certain truths behind the myths of each religion and that they all address three mysterious, unanswerable questions of life: Where do we come from? Why are we here? and Where are we going?

The Ministry's classic book project aims to bring Taiwanese readers closer to classic books from around the world, and has completed the translation of more than 50 world classics.

## NTU OFFERS FOUR MOST POPULAR CHINESE-LANGUAGE MOOCS ON COURSERA

NTU is proud to offer one of the most popular online learning programs on the world's largest Massive Open Online Course (MOOC) education platform, Coursera. Recent Coursera statistics reveal that the four most popular Chinese-language courses on Coursera are all NTU courses. Coursera partners with top universities and organizations worldwide to offer free online courses for anyone to take.

NTU's popularity on Coursera reflects the university's prominence among Chinese-speaking populations, and is all the more telling as the participation of top-ranking universities such



as China's Peking University, Shanghai Jiao Tong University and Fudan University has rapidly expanded Coursera's offering of Chinese-language courses.

Our top-ranking Coursera courses include: "Ancient Chinese History and Historical Characters: Qin Shi

Huang" (total enrollment: 38,000; enrollment from China: 29,000); "Probability" (total enrollment: 28,800; enrollment from China: 18,500); "The Red Chamber Dream" (total enrollment: 19,000; enrollment from China: 14,800) and "Shi-ji (1)" (total enrollment: 17,900; enrollment from China: 13,500).

# Quality Service Campaign Launched for Administrative Staff

*President Pan-Chyr Yang, hoping to inject "passion, compassion, kindness, and sincerity," believes the quality of administrative services is an essential part of our school's education*

NTU President Pan-Chyr Yang has called on the university's administrative staff to build a friendlier educational and administrative environment when serving students and individuals seeking assistance on campus. To achieve this goal, the Personnel Office and the School of Professional and Continuing Studies launched the Quality Service Campaign and commissioned a professional staff training and development company to design a service quality training program for the university's 1,200 administrative personnel and 120 management-level personnel. The program includes a management training workshop, a staff training workshop as well as a workshop for seed trainers.

The management training workshop helps supervisor's develop their executive skills in managing service as well as their ability to design and implement service enhancement plans. In addition to strengthening basic service skills, telephone etiquette, and the management of complaints, the workshop enhances a manager's ability to supervise and review her team's service performance.

The staff training workshop focuses on the enhancement of basic service skills, addressing the psychology of customer service, telephone etiquette and workplace attire, as well as the handling of face-to-face service and management of complaints.

The workshop for seed trainers was designed to establish a service training team on campus. In the future, seed trainers will promote the university's campaign for service quality, spreading the concept to all administrative offices at NTU.

President Yang says, "We should receive each and every student and co-worker seeking our assistance as our closest friend, treat them with the utmost sincerity, and assist them with our warmest service."



NTU President Pan-Chyr Yang has launched the Quality Service Campaign in order to promote a friendlier administration and a more comprehensive educational environment.

The president believes that quality service should not be an imposed formality, but a spontaneous act that comes from true kindness and friendliness. He also emphasizes the effect that "hidden lessons" such as that of kindness in the workplace have on a student's education in stating, "Students are very observant, and they can see how the members of our faculty and staff handle their daily affairs. Therefore, it is my belief that the quality of our services is also an essential part of our school's education. As a good campus is built upon an environment imbued with a pleasant atmosphere and a genuine willingness to help others, our quality services will be able to nurture the same type of friendly attitude in our students."

By injecting "passion, compassion, kindness, and sincerity" into the workplace, President Yang hopes the Quality Service Campaign will not only enhance the service provided by NTU's administration but also establish the university as a model of service quality.



## NTU AND MEDIATEK OPEN 5G RESEARCH CENTER

*Over 100 researchers will work to achieve the center's goal of becoming a pioneer in the future development of 5G wireless technology*

**N**TU and Taiwan's Mediatek, one of the world's largest chip-design companies, unveiled the Mediatek-NTU Advanced Research Center on February 20.

The center will be manned by over 100 researchers, including a dozen Mediatek researchers, NTU faculty members, and around 70 NTU postgraduate students and experts from Taiwan and abroad. The center's short-term goal is to become a leading research institute for fifth-generation (5G) wireless systems technology, which covers wireless access, smart phones, and mobile Internet applications and services.

The center was established in response to the growing prevalence of handheld devices and the revolution of technologies in computing and wireless telecommunications. As the technologies become increasingly cost-effective, the impact of the smartphone and handheld device industry is trickling down to all levels of human experience. Nevertheless, as the growth in demand for network data exceeds that of supply, it is generally believed that the next-generation 4G service will not be able to meet traffic demand by 2020. It is therefore imperative that preliminary studies for developing 5G mobile telecommunications begin. In the future, the capacity, speed as well as energy-efficiency of 5G technology will greatly



NTU faculty members join Mediatek executives in giving a thumbs up during the unveiling ceremony for the Mediatek-NTU Advanced Research Center.

increase, and the Mediatek-NTU research center aims to stay at the forefront of research and development.

By combining NTU's research abilities with Mediatek's expertise in the industry, the center's goal is to establish itself as a leader in the field of mobile telecommunications so as to become a leading pioneer in the future development of 5G technology. Meanwhile, Mediatek's engagement will also provide NTU's students with the opportunity to be exposed to the private sector at an early stage, further enhancing our student's professional competitiveness.

NTU Vice President Liang-Gee Chen remarked that the center features "a combination of innovative research and practical application, as well as an integration of interdisciplinary technologies." As both parties have worked together to carefully

assess and meticulously layout the patent-oriented research targets, not only will the center's research be presented at top international conferences, the results will also create an extensive impact on the industry.

Mediatek Vice President and CTO Kevin Jou stated, "Mediatek has always been committed to becoming a leader in innovative technology as well as a top-ranking global company. To achieve this goal, much talent and many academic resources are necessary. In the face of global competition, this collaboration between industry, academia, and research will allow the Mediatek-NTU Advanced Research Center to demonstrate its ability to produce innovation that is rooted in cutting-edge technology."

# NTU at a Glance

## MUSEUM BUILT AROUND ASIA'S FIRST LINEAR PARTICLE ACCELERATOR



The linear particle accelerator occupying the NTU Heritage Hall of Physics is not just the museum's most treasured exhibit, it could even be said to be the museum's *raison d'être*, for without it NTU's physics museum might not have come to be.

Our accelerator's story begins in 1932, when the Cockcroft-Walton Linear Accelerator was built at the University of Cambridge's Cavendish Laboratory and carried out the first bombardment of an atomic nucleus in history. Two years later, Japanese physicist Arakatsu Bunsaku, who had studied at Cavendish, began working here at NTU's predecessor, Taihoku Imperial University. Prof. Arakatsu, backed by his Japanese and Taiwanese students, brought our accelerator into being by constructing Asia's first Cockcroft-Walton Linear Accelerator. That same year, Arakatsu employed the accelerator to conduct the first artificial nuclear disintegration in Asia here on this very campus.

In the aftermath of World War II, after the university had been reorganized as NTU, Prof. Yui-Kwei Tai, the first chair of the NTU Department of Physics, rebuilt the accelerator and repeated Arakatsu's experiment in 1948.

The accelerator was decommissioned in 1985, but its major parts were kept in storage. Then, in 2004, the Department of Physics rediscovered the decommissioned accelerator. This fortuitous find inspired the department to renovate and rearrange the accelerator's old laboratory into an exhibition space, which opened as the NTU Heritage Hall of Physics in November 2005.



# Let Your Voice Be Heard, and Hear Others!



The Academic Division of the NTU Student Association has launched the Po-Ya Late Night Salon as a platform for open discussion. The Salon provides a casual setting outside of class for students to meet to discuss and learn more about topical issues and current affairs that are of particular interest to them.



It is important for students at NTU to pursue academic knowledge, but as members of civil society they should also be informed about public affairs here on campus, in Taiwan and in the world at large. The Student Association hopes the Salon will create opportunities for students to develop their interests in public affairs and learn to express their opinions reasonably while considering other viewpoints. Late Night Salon topics have included condom vending machines on campus, food safety, higher education, and the ideal university campus.

Every student is welcome to join the discussions. Students are encouraged to let their voices be heard as well as to hear the voices of other students.

The Salon meets on designated week nights in the round table area on the first floor of the Liberal Education Classroom Building (Po-Ya Hall). Visit the NTU Student Association's website for meeting times and topics.



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臺北字第4272號

Publisher: Pan-Chyr Yang  
Editorial Consultant: Lin-lin Ku  
Editor: Ta-Te Lin  
Executive Committee: NTU Secretariat  
Published by National Taiwan University  
Tel: 886-2-3366-3737  
Address: No.1, Sec.4, Roosevelt Road, Taipei, 10617 Taiwan  
Website: <http://homepage.ntu.edu.tw/~secretor/ntunewsletter>  
臺灣郵政臺北雜字第1146號執照登記為雜誌交寄