

# NTU



## NEWSLETTER

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### Medical Breakthroughs Enhance Human Lives

NTU Press in Full Gear

Taiwan's Culture Excites Int'l Students

Art Festival to Celebrate Campus Life

**Special Report**  
International Academic Exchanges



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## ✦ From the President's Office

I am one of the conveners of the government's "National Science and Technology Program—Energy," and NTU for its part is currently pursuing a range of energy conservation and alternative energy research while implementing substantive energy conservation measures here on campus.

The university's energy research covers a wide range, including biomass energy, solar energy, light-emitting diodes and wind power. Prof. Falin Chen of the Institute of Applied Mechanics is even participating in a large-scale national energy independence project exploring the potential of the Kuroshio current to generate power.

For his "New Energy Research Plan," Prof. Bin-Juine Huang of the Department of Mechanical Engineering earned a research award from King Abdullah University of Science and Technology's Global Research Partnership. Huang's is one of only seven institutions, including Cornell and Stanford, sharing a total of US\$1 billion in GRP grants.

Four years ago, NTU commissioned the Taiwan Green Productivity Foundation and Energy Service Company to take the pulse of the campus' energy consumption and recommend improvements. The installation of energy efficient T5 lighting in the Administrative Building two years ago is expected to save the university NT\$1.38 million in electricity costs over five years. As a result, the university provides a fund to encourage the installation of efficient lighting in other buildings.

The substitution of LED lighting along Water Fir Avenue has not only provided better lighting but also lowered power consumption to 27% of the previous level. On top of this, NTU's Chubei Campus intends to set up an industry-academic green energy R&D park.

李嗣涔

President  
Dr. Si-chen Lee

# PRESIDENT LEE AND NTU OFFICIALS VISIT ELITE AMERICAN PARTNER UNIVERSITIES



NTU President Si-chen Lee delivers a speech during the Symposium on the Global Energy Future at Washington University in St. Louis in October.

On October 1, NTU President Si-chen Lee delivered a speech at the Symposium on the Global Energy Future at Washington University in St. Louis.

Pres. Lee was accompanied by NTU Dean of International Affairs Tung Shen and Director Chia-ling Mei of the NTU Graduate Institute of Taiwan



Literature, who both had just visited Harvard University and Massachusetts Institute of Technology to promote closer ties with those elite institutions.

Prof. Falin Cheng of the NTU Institute of Applied Mechanics joined Pres. Lee at the global energy symposium at Washington University. During the symposium, the two NTU academics held discussions with university presidents and energy experts from dozens of elite international universities in addressing a range of pressing energy issues, including regional energy, energy and environment, nuclear power, fossil fuels,



bioenergy, solar energy and the clean utilization of coal.

Also at Washington University, Pres. Lee presented the opening remarks at another symposium entitled "Taiwan Experiences: a Crossroads in Cultures and Technologies." Dean Shen and Director Mei also gave talks. The event provided scholars from the two universities a platform for holding discussions and exchanges on East Asian studies, Taiwan literature, history, biology, economics and law. Addressing a broad range of issues, the symposium deepened the partnership between NTU and Washington University.

Before accompanying Pres. Lee to Washington University, Dean Shen and Director Mei visited Harvard's renowned Fairbank Center for Chinese Studies and MIT's School of Humanities, Arts and Social Sciences where they held discussions on cooperation in Taiwan studies, study abroad programs and scholarship programs. NTU is pleased that its relationships with such elite institutions growing and bearing fruit.

NTU has enjoyed partner university relationships with Harvard, MIT and Washington University for many years. Harvard is the oldest university in the United States. It employs over 40 Nobel laureates and is ranked as the leading university in the world. MIT is renowned around the globe for its engineering research. It has more than 70 Nobel laureates and enjoys a fourth-place world ranking. Washington University is ranked the world's 30th best university.

In September, Washington University Chancellor Mark S. Wrighton drew an enthusiastic response for his talk on "America's Energy Future: the Options Before Us," at NTU's College of Science.



## E. Sun Academic Award Encourages College of Management Professors to Publish



**O**n September 17, the E. Sun Academic Award was established at the College of Management. The new award aims to boost the quality of management research at the college by offering monetary prizes to professors who publish papers in prestigious international journals. Representing the award's sponsor, E. Sun Financial Holding Co. Chairman Yung-jen Huang and E. Sun Bank Chairman Gary Tseng joined NTU President Si-chen Lee and Dean of the College of Management Shu-hsing Li in signing the agreement to establish the award.

The award provides NT\$50-100,000 to professors who publish academic papers in a top-three journal in their field of expertise. The college expects to see over 15 recipients within five years.

The award is another example of E. Sun's long-standing support for the cultivation of talented professionals. E. Sun also contributed significantly to the establishment of the E. Sun Knowledge Management Chair Professorship in 2005. In 2006, E. Sun provided donations for the Harvard Case-Study Classroom, which set a new milestone in the development of case-study education in Taiwan.

During the signing ceremony, Pres. Lee said that encouraging professors to publish in top-rate journals not only enhances the quality of academic research in Taiwan, it attracts more students from Taiwan and abroad to pursue studies at NTU.

## University of Wisconsin-Madison Chancellor Leads Delegation to NTU



**O**n November 11, University of Wisconsin-Madison Chancellor Biddy Martin led a delegation of officials from the prestigious American university to NTU for the purpose of holding talks to advance the long-standing partnership between the two institutions. In addition to meeting with NTU President Si-chen Lee, NTU Dean of International Affairs Tung Shen and NTU alumni representative Tsong-shien Wu, Chancellor Martin participated in a forum with Associate Dean Mu-hsuan Huang of the College of Liberal Arts, Associate Dean Chia-pei Chou of the College of Engineering, Associate Dean Chi-kuang Sun of the College of Electrical Engineering and Computer Science, Chair Yanwing Leung of the Department of Foreign Languages and Literatures, and Director Fu-chang Hsu of the Language Center. They held substantive talks on specific areas of cooperation.

Chancellor Martin's delegation included College of Engineering Dean Paul Peercy, Vice Provost of Globalization and Dean of the Division of International Studies Gilles Bousquet, Director of the Center for East Asian Studies Nicole Huang, Director of the Wisconsin Alumni Association Kim Santiago and Chief of Staff to the Chancellor Becci Menghini.

During their meeting, Pres. Lee and Chancellor Martin engaged in a thorough discussion of strategies for developing a world-class university, and both agreed that outstanding research is an indispensable element. During their discussion, Chancellor Martin spoke about research on brain mechanisms as well as the relationships between emotion and happiness in particular. The University of Wisconsin-Madison's Center for Investigating Healthy Minds has reported notable research findings in these areas. Martin also invited Pres. Lee to visit Madison to deliver a speech.

After the meeting, Dean Peercy discussed current developments in the fields of engineering and electrical engineering with NTU's Associate Dean Chia-pei Chou of the College of Engineering, Deputy Dean Chi-kuang Sun of the College of Electrical Engineering and Computer Science, and Department of Chemical Engineering alumni Shi-chern Yen.

Over 50 full-time professors at NTU are alumni of the University of Wisconsin-Madison, which enjoys a ranking of 17<sup>th</sup> in the Shanghai Jiaotong University Academic Ranking of World Universities. Since the signing of an agreement on student exchanges in 2010, several students from the two institutions have taken part in exchange programs in the areas of liberal arts, sciences, engineering and electrical engineering.

## NTU Joins European Union FP7-Net4Society Plan



Visit the Socio-economic Sciences and Humanities National Contact Point-Taiwan website at <http://sshncp.nsysu.edu.tw/>.

NTU Dean of International Affairs Tung Shen and Director of National Sun Yat-sen University's Graduate Institute of Political Science Da-chi Liao established the SSH NCP-Taiwan (Socio-economic Sciences and Humanities National Contact Point-Taiwan) just one year ago. Though the organization has only just begun operations, it managed to join the FP7-Net4Society Plan in 2010, becoming the 21<sup>st</sup> Taiwanese organization to do so.

Under the European Union-Framework Program (EU-FP), SSH NCP-Taiwan serves as a liaison, communication channel and intermediary between research

teams in EU member states and Taiwanese researchers working in the social sciences and humanities and is tasked with assisting domestic social sciences and humanities academic teams to successfully join research plans in the EU. It is also establishing partnerships with EU-FP NCP-Taiwan and the other NCP in Taiwan in order to jointly formulate and carry out plans.

Over the last year, SSH NCP-Taiwan has held four explanation meetings around Taiwan as well as provided information about the FP7-Net4Society Plan to individual instructors and helped them find

partners in the EU. The current stage of the Net4Society Plan, which began in 2008 and ends this year, comprises 47 countries from the EU and other regions. The main goal of the plan is to function as a liaison between all social sciences, economics and humanities NCP in Europe and in third world nations. It stresses international and interdisciplinary cooperation and the establishment of a stable network of contacts and provides a system for training professional SSH NCP managers. The plan relies on a wide range of promotional, intermediary and training activities to assist social sciences and humanities scholars from around the world take part in EU research plans. Its ultimate goal is to strengthen the integration of EU research and the establishment of the European Research Area.

The second stage of the Net4Society Plan began on February 1. It has expanded to 63 countries and will run for two years. Please visit the SSH NCP-Taiwan website at <http://sshncp.nsysu.edu.tw/>.

## NTU Day at PKU Sets Milestone for Cross Strait Academic Exchanges

At the invitation of Peking University, NTU President Lee led a delegation of students, faculty and officials representing the full range of academic fields at NTU to Beijing in order to kick off and take part in PKU's first National Taiwan University Day on December 20.

PKU holds University Days to develop exchanges with its international partner universities. In recent years, it organized successful University Days in collaboration with such prestigious institutions as Oxford University, Yale University and the University of Sydney. NTU is making progress in its internationalization efforts and the promotion of academic developments between Taiwan and

China are an essential part of these efforts. NTU Day at PKU helped further academic cooperation between the two schools and gave higher education officials and students in China a deeper understanding of NTU.

Included among the NTU Day activities were a speech by Pres. Lee, an inauguration ceremony for NTU's liaison office at PKU, academic and administrative exchanges, student forums, and exhibitions and performances. Professors from each of NTU's colleges and departments engaged in academic research talks with their counterparts at PKU in order to update PKU's professors on the current state of research at NTU and lay foundations for



future cooperation. Student associations from the two schools also took part in exchanges and held a student forum under the theme "Green Campus."

Following the success of NTU Day at PKU, NTU is looking forward to further advancing exchanges and cooperation between the two institutions by hosting Peking University Day during the Azalea Festival in March.

## Physics Professor Ching-ray Chang Named IEEE Fellow

**P**rof. Ching-ray Chang of the Department of Physics received a prestigious international academic honor by being named an IEEE fellow this year. Chang was recognized for his "contributions to micromagnetic calculations and computational approaches in spin transport."

Prof. Chang graduated from the University of California, San Diego, in 1988, and joined the NTU Department of Physics in 1989. He is currently leading a highly active and productive research group that carries out computational and theoretical studies of magnetic groups around the world, and the vital contribution to the development of materials. This research group is collaborating with experimental groups around the world, and the resulting interaction between theory and experiment is making a system modeling and experimental techniques. In this field Prof. Chang has made significant contributions and has had a great impact on the understanding of magnetic and spin dynamics.

Prof. Chang has been the director of NTU's Center for Nanostorage Research and Center for Theoretical Physics. He has also been a council member of the IEEE Magnetics Society and a committee member of the Magnetism Section of the International Union of Pure and Applied Physics. This service has ensured Chang is recognized not only for his highly active research work, but also for his public service to the domestic and international scientific communities.

At numerous public events he has worked hard to elevate the visibility of physics, and moved others to follow his lead. Certainly the grandest and most visible of these projects is associated with the World Year of Physics 2005 when Taipei 101, the world's tallest building, was illuminated in the night sky with the logo  $E=mc^2$ . This project was funded purely by private sources and was awarded a first prize in an international competition. Under the direction of Prof. Chang, the Physics Society was able to become one of the most visible professional associations in Taiwan.

Prof. Chang has also initiated physics networking across Asia, and thanks to him scientific collaboration among Asian nations is stronger than ever before. He also founded IEEE Taiwan Magnetic chapter, and now he is president of the Taiwan Association of Magnetic Technologies and the founding vice president of the Asia Union of Magnetic Societies.

Prof. Chang is a distinguished scientist who has also devoted much of his time and energy to general education and international cooperation. It is certain that without him the physics program at NTU would not have seen the rapid progress it has over the last two decades.

The IEEE is the world's leading professional association for advancing technology for humanity. Through its 385,000 members in 160 countries, the association is a leading authority in a wide variety of areas ranging from aerospace systems, computers and telecommunications to biomedical engineering, electric power and consumer electronics.

Dedicated to the advancement of technology, the IEEE publishes 30 percent of the world's literature in the electrical and electronics engineering and computer science fields, and has developed more than 900 active industry standards. The association also sponsors or co-sponsors nearly 400 international technical conferences each year.



Prof. Alfred Jung-kai Chen enjoys spending time with his family.



## Math Professor Alfred Chen Named Among Ten Outstanding Youths in Taiwan

Junior Chamber International Taiwan has named Prof. Alfred Jung-kai Chen of the Department of Mathematics one of the Ten Outstanding Young Persons of Taiwan for 2011. At the ceremony honoring these youths, Taiwan President Ying-jeou Ma said that hundreds of people from all walks of life have won this eminent award since it was established in 1963. He praised the winners as virtuous and talented "living models" of society, worthy of emulation by others in our society.

Professor Chen is specialized in algebraic geometry. He is internationally renowned in his field, and the algebraic geometry team under his leadership is one of the most active research teams in Taiwan.

Prof. Chen has received many honors, including Academia Sinica's Young Scholar's Writing Award and the National Science Council's Outstanding Research Award. As a teacher, he is well received by students, and he has been named an NTU Outstanding Teacher for the last two years. Many of his students have gone abroad to study at prestigious universities, and some have had noteworthy achievements. Prof. Chen started his algebraic geometry research team from scratch, and molded it into one of the most active in Taiwan.

Prof. Chen has also made great contributions to the mathematics community as a whole. After being elected secretary general of the Mathematical Society of the Republic of China in 2006, Prof. Chen spent his four-year term improving the society's financial situation and founded an electronic newsletter that lent the organization a new look. In 2009, he became the convener for the mathematics discipline for the National Science Council, a role in which he has made important contributions to raising the standard of mathematics research in Taiwan.



Yet, back in 1997, when Prof. Chen had just returned to Taiwan to teach and Taiwan's academic world was engulfed in a craze to publish, he was struggling with the serious issue of selecting a suitable topic for research. On one hand, a hot topic would lend itself to easy research but young researchers with limited resources usually find it hard to compete with established research groups; a problem that is too esoteric, on the other hand, often borders on being meaningless to the uninitiated. Chen ultimately chose the birational characterization problem for abelian variety as his topic. Many top-notch scholars had taken on this topic, but none had found a solution. It was a topic that would command the interest of mainstream scholars, but it would certainly not be one of their priorities. After three years of challenges and frustrations, Prof. Chen finally solved the problem and published his results in the leading journal of mathematics.

Prof. Chen extended his special thanks to his wife, daughters and family for their long-term support while expressing his appreciation to his colleagues for their recognition and support. He hopes that this award will give inspiration to young people interested in engaging in theoretical science and demonstrate to young people who are physically handicapped that they can win recognition and respect by making their own dedicated efforts.



## NTU Professors Receive National Chair Professorships, Outstanding Research Awards

The Ministry of Education held the 14th National Chair Professorship Research Awards on December 28. Five NTU professors were among the five scholars awarded National Chair Professorships, while three NTU professors were among the nine awarded Outstanding Research Awards. Taiwan President Ying-jeou Ma and Premier Den-yih Wu served as presenters in order to underscore the eminence of these two awards.



presentation ceremony for its Awards and 54<sup>th</sup> Outstanding Research Awards. Two NTU professors who received National Chair Professorships and three NTU professors who received Outstanding Research Awards. The ministry invited President Ma and Premier Den-yih Wu to underscore the eminence of these two awards.

The award winning professors pose with Taiwan's President Ying-jeou Ma and Premier Den-yih Wu.

The MOE awarded a National Chair Professorship in the category of Biology, Medicine and Agriculture to Prof. Che-ming Teng of the Department of Medicine and a National Chair Professorship in the category of Engineering and Applied Sciences to Prof. Huei Wang of the Department of Electrical Engineering. The MOE presented Outstanding Research Awards to: for Mathematics and Natural Sciences, Prof. George Wei-shu Hou of the Department of Physics; for Biology, Medicine and Agriculture, Prof. Ann Lii Cheng of the Institute of Oncology; and, for Engineering and Applied Sciences, Prof. Der-liang Young of the Department of Civil Engineering.

President Ma congratulated the award winners and called on them to continue to demonstrate Taiwan's academic strengths and achievements to the international community while advancing scholarly excellence and setting the best examples for young students. Ma then applauded the MOE's efforts to promote the quality of higher education in Taiwan, mentioning the ministry's "Aim for the Top University Program" and its program to promote excellence in university education, which have boosted the standings of Taiwanese universities in international rankings.

Premier Wu called the winners great human assets of Taiwan, and said they crossed national boundaries to enhance Taiwan's academic prominence in the world. Wu also spoke of the government's Flexible Salary Plan, which was implemented in August 2010 and provides pay raises to help universities retain outstanding Taiwanese professors and research personnel and recruit talent from abroad.

## Political Science Professor Hungdah Su Awarded EU's Jean Monnet Chair

Prof. Hungdah Su of the Department of Political Science received the prestigious Jean Monnet Chair in 2010. The Jean Monnet program, which is funded by the European Union, awarded 34 three-year academic chairs last year to leading professors all over the world whose teaching and excellent published work address European integration. Prof. Su, who is deputy director general of the EU Center in Taiwan, is the first Taiwanese to receive this honor.

Prof. Su is using his EU Studies chair to improve research and teaching regarding all aspects of EU external relations. The chair will also help Su raise students' understanding of the major issues concerning Europe and regional integration.

Professor Su is an undeniable expert in the EU and regional integration. He holds a doctorate from the University of Paris-Sorbonne and has been a member of the Jean Monnet Council since 2005. Su began his career at Nanhua University in 1998 and later moved to the Institute of European and American Studies at Academia Sinica, where he served as coordinator of the EU Study Team from 2006 to 2008. Since August 2008, he has been an NTU faculty member and has contributed substantially to the creation of the EU Center in Taiwan.





## NTUFSA CLAIM CHAMPIONSHIP OF 1<sup>ST</sup> NTHU INTERNATIONAL STUDENTS SPORTS FESTIVAL

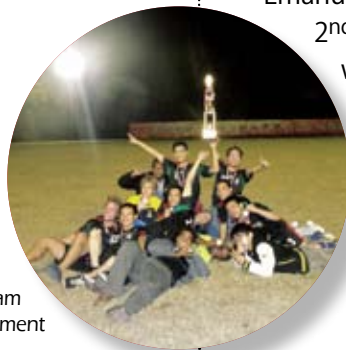
The NTU Foreign Students Association team outplayed two competitors to claim the soccer championship of the 1<sup>st</sup> National Tsing Hua University International Students Sports Festival on November 20. The competition brought together teams of international students from NTU, NTHU, National Chiao Tung University, National Cheng Kung University and National Chung Hsing University.

Following a draw of straws, the NTUFSA team faced off against the team of international students from NTHU, whom it defeated 2:1 to advance to the finals for a showdown with NCTU. Cheered on by their fans, the players on the NTUFSA team overpowered their NCTU opponents and stormed to a resounding 5:0 victory.

The NTUFSA team was made up of international NTU students from eleven countries, including Vietnam, the United States, China, Iraq, Spain, Sweden, Mongolia, the Solomon Islands, Kiribati, Peru, and São Tomé and Príncipe.

The event, which also included a cricket competition, helped international students from different universities in Taiwan get to know each other and further promoted the internationalization of Taiwan's university campuses.

The champion NTUFSA soccer team celebrates along with its tournament



## ICLP STUDENTS WIN TOP PRIZES AT MANDARIN SPEECH COMPETITIONS

An ICLP student speaks during the Dr. Sun Yat-sen Memorial Hall Speech Competition.

International Chinese Language Program students took top spots in two speech contests held in November and December, respectively. One ICLP student even took first place in both contests. In all, over forty students participated in the Rotary Club contest, while more than one hundred took part in the Sun Yat-sen Memorial Hall competition.



The District 3520 International Rotary Club Chinese Speech Competition was held November 14 at National Taiwan Normal University. Grace Jackson placed 1<sup>st</sup>, while Lance White and Andrew Dale placed fourth and fifth, respectively. Leo Hu won the Taiwanese language section of the competition.

The 38<sup>th</sup> Annual Dr. Sun Yat-sen Memorial Hall Speech Competition was held on December 11. Grace Jackson, again, placed 1<sup>st</sup>, and Joshua Denning, Emanuel Marshack and Brian Chien Chao placed 2<sup>nd</sup>, 4<sup>th</sup> and 5<sup>th</sup>, respectively. Nick Rosenbaum was awarded the Director's Award.

The standout performances of these ICLP students are a testament to the quality and strength of the International Chinese Language Program.

## INTERNATIONAL STUDENTS TAKE ON CHINESE CHESS AND MAHJONG

International students absorbed in the intense competition of a mahjong game.

The NTU International Students Information Service teamed up with the NTU Chess Club and NTU Mah Jong Club to put on two days of Chinese chess and mahjong lessons and competitions in late autumn of last year.

On November 30, the head of the NTU Chess Club first introduced the international students to the art of Chinese chess by explaining its origins and rules of play. The students then played practice rounds in pairs, with a Chess Club member advising each pair before taking part in a tournament.

December 1 was devoted to mahjong. The head of the NTU Mah Jong Club first gave an introduction in English to mahjong and its rules. Four international students were then selected to play in a demonstration game. The players were each coached by a Mah Jong Club member while the other students observed from the sides. After the lessons, the students were divided into tables of four to put their new skills to use in real competition.



## Engineering College Holds Field Trip to Pingxi for Exchange Students



Students set off a sky lantern marked with their wishes in Pingxi.

Students smile for a photo on the hanging bridge near Shifen Waterfall.



On December 18, the College of Engineering held a one-day field trip to Pingxi for incoming exchange students. Led by the college's associate dean, Prof. Chia-pei Chou, a group of 17 exchange students, international students and local students took the train to Pingxi for a day of cultural and natural adventure.

The group gathered at Taipei Train Station at noon, and headed to Rueifang Station by train before transferring to Pingxi. On the way to Shifen Waterfall, the group paid a visit to Shifen Historic Street to see traditional Taiwanese craftworks and eat delicious snacks. Walking on the hanging bridge, the students were delighted to see the beautiful river below and took many photos. The waterfall absolutely stunned the students with its cascading curtain.

When the group returned to Shifen Historic Street, it was dark, and they had dinner at Shifen Restaurant, which provided a delicious meal using local vegetables and fresh ingredients. After dinner came the most exciting activity of the day—setting off flying sky lanterns! Students wrote their wishes on the lanterns before launching them into the sky. It was very beautiful and the atmosphere was touching and sweet, making a perfect ending for this day.

Through the trip, the students got to know each other better and had a wonderful time in nature enjoying the beauty of Taiwan.

## International Students Bike and Kayak in Gongliao

Students succeed in standing in their kayaks on a day out in Gongliao.



The NTU Foreign Student Association with the help of the Office of International Affairs organized a bicycling and kayaking daytrip to Gongliao in Taipei County for international students on November 27. The trip drew 40 Taiwanese and international students, who assembled at 7:30 a.m. on the NTU campus to kick off their day of adventure.

After a 90-minute bus ride when the students to eat while taking in the striking cliff faces of the Northeast Coast, they arrived in Gongliao. First up was a bike ride through the Old Caoling Train Tunnel. The students rented bicycles in Gongliao, then rode to the tunnel. The tunnel stretched on and on before delivering the band of cyclists to the coast of Ilan County, where they took a break and snapped group photos. The students were starting to know one another better, and wheeled back to Gongliao for lunch and lively conversation.

The journey continued with kayaking on the Shuangxi River. After a training session, the students hit the water, two to a kayak. Though it was the first time for many, the entire crew enjoyed the adventure. The highpoint came when the guide coxed all the boaters into standing up in their kayaks at the same time.

## Revolutionary NTU Portable Device Diagnoses Diseases in 12 Minutes



- 🕒 The VsensorNTU development team explains the new device to reporters at the presentation ceremony.
- 🕒 The VsensorNTU is a multi-functional portable medical instrument that diagnoses viruses and cancers in twelve minutes.

**A**n interdisciplinary team of NTU researchers has developed a multi-functional portable medical instrument that diagnoses viruses and cancers in twelve minutes. This first-of-its-kind invention, called VsensorNTU, is having a major impact on the global medical community. It will not only lessen the suffering of countless people, but will revolutionize the medical industry as well.

VsensorNTU was developed from a concept all the way into an innovative and world-leading electronic medical product by six interdisciplinary research and development teams comprised of more than ten NTU professors, doctors and researchers. These included Prof. Shi-ming Lin (Center for Optoelectronic Biomedicine), Prof. Pan-chyr Yang (Dean of the College of Medicine, physician of internal medicine at NTU Hospital), Prof. Ming-liang Kuo (Institute of Toxicology), Prof. Bor-ching Sheu (Department of Obstetrics, NTU Hospital) and Prof. Luan-ying Chang (physician of pediatrics at NTU Hospital).

Over the last year, clinical testing has demonstrated that the VsensorNTU achieves nearly 100% specificity and sensitivity in the detection of six major diseases that threaten public health. The test results were shown to be highly reproducible. The diseases include oncogenic human papillomavirus, enterovirus 71, hepatocellular carcinomas, lung cancers, influenza viruses and sepsis. In addition to its high accuracy, the VsensorNTU offers the added benefits of providing real-time results and of being convenient, economical and non-invasive. Once it hits the market, the public can look forward to being tested for viruses and cancers in the convenience of their homes or ordinary clinics.

The research team's leader, Prof. Shi-ming Lin, points out that the functions and features of the VsensorNTU

easily can be expanded in the future by adding new modules. When combined with a notebook computer or video phone, this new device will permit personal preventive health care and medical diagnosis.

Dean of the College of Medicine Dr. Pan-chyr Yang further emphasizes that the VsensorNTU is a significant breakthrough in medical research because it avoids past medical testing's reliance on optical technology. Not only is the old approach time-consuming, expensive and limited in accuracy, but diseases such as liver cancer are difficult to diagnose in their initial phases. VsensorNTU, on the other hand, uses a unique electronic antibody engineering detection technology. It is innovative, economical and fast, and its detection sensitivity has reached 2pg/mL. And, that it is portable means doctors and the general public will be able to conduct self-diagnosis at convenient locations.

A patent portfolio for this NTU-developed technology has already been established. The VsensorNTU has also passed its review by the NTU Hospital Institutional Review Board and completed clinical testing. The research results have been published in international academic journals. They show that VsensorNTU can provide greater efficiency in clinic diagnosis, cancer tracking and the immediate determination of dosage schedules. NTU has transferred the technologies developed for the VsensorNTU to Wisefame International Co., which has been aided by Capital Securities Corp. in going public. A new company called Vsense Biotech Ltd. has also been founded in the high-tech Neihu District of Taipei to initiate and undertake further mass production and commercialization work.



## Formation of Electromagnetism Industry-Academia Alliance Sets Milestone



Officials mark the establishment of the Taiwan Electromagnetism Industry-Academia Alliance.

An assembly of academic, industry and government luminaries attended a grand ceremony marking the formation of the Taiwan Electromagnetism Industry-Academia Alliance on December 17. Jointly supported by the NTU Department of Electrical Engineering and NTU Telecommunications Research Center, the alliance is the only organization in Taiwan working for cooperation between industry and academia in the field of electromagnetics. Its establishment sets a milestone for the initiation of research cooperation between universities and enterprises.

The honored guests invited to attend the ceremony included Executive Yuan Minister without Portfolio Jin-fu Chang, National Science Council Minister Lou-chuang Lee, National Chiao Tung University President Chung-yu Wu, National Taiwan University of Science and Technology President Shi-shuenn Chen and National Taipei University of Technology President Tsu-tian Lee. NTU President Si-chen Lee also attended to personally express his congratulations to the alliance on its formation. These

guests were joined by 24 industry representatives and over 40 professors from eight universities.

The new alliance was formed by electromagnetic wave research teams from eight universities, including NTU, NCTU, National Central University, NTUST, NTUT, Yuan Ze University, National Chung Cheng University and National Sun Yat-sen University. In a short time, it has gained significant support from industry. The alliance's industry partners already include the twelve companies Taiwan Semiconductor Manufacturing Co., MediaTek Inc., Ralink Technology Corp., Garmin Corp., Wistron NeWeb Corp., Asustek Computer Inc., Quanta Computer Inc., Intel Corp., Himax Technologies Inc., Microelectronics Technology Inc., Realtek Semiconductor Corp. and Chunghwa Telecom Co.

Minister Jin-fu Chang pointed out that the government has actively promoted industry-academia cooperation in recent years and declared that the establishment of the alliance provides a platform for exchanges between industry and academia and implements the concept of universities leaving their campuses and enterprises entering

campuses, leading the field of electromagnetics in Taiwan on to reach ever greater milestones.

Minister Lee, who serves as director of the Taiwan branch of the International Union of Radio Science, stressed that "strengthening the basics to move forward" is highly significant. Adding that electromagnetism is an indispensable fundamental knowledge whether its space physics or semiconductor technology, Lee said he hopes this type of industry-academia cooperation will create more talented professionals for Taiwan's information and communications technology industry and academic community.

NTU's President Lee noted that the profound influence electromagnetism has had on the development of human technology over the years since the proposal of Maxwell's equations in 1864 demonstrates its importance. In light of the serious problem of the declining number of professionals in the field of electromagnetics in Taiwan in recent years, Lee expressed his appreciation to the alliance's convener, Prof. Ruey-bee Wu of the NTU Department of Electrical Engineering, for taking on such an important task. Lee also offered his thanks to the participating enterprises for their willingness to join the alliance and for creating a better academic environment for the field of electromagnetics.

Prof. Wu said he hopes the alliance will spark development and innovation in electromagnetic technology, draw more talent to the field and eliminate barriers between academia and industry.

## NTU Scientists Develop New Asthma Drug from Algae

**T**hrough three years of research collaboration, a research team led by Prof. Bor-luen Chiang of the Institute of Clinical Medicine and Prof. Hong-nong Chou of the Institute of Fisheries Science has discovered that purified phycocyanin significantly reduces inflammatory cells and obstruction in the respiratory tract. Their findings were published in the *American Journal of Respiratory and Critical Care Medicine*, the leading international journal of respiratory studies. The two professors expect to begin clinical trials after obtaining patents.

Prof. Chiang says that while the steroids used today for the treatment of allergic asthma are effective in inhibiting inflammation, they also promote type II allergies (caused by T helper cells) and are therefore detrimental in

long-term treatment. A grant provided through the National Pharmaceutical Biotechnology Program allowed the team to screen thousands of compounds and purified materials. The team found that phycocyanin, a protein in cyanobacteria (blue-green algae), is especially effective.

This finding is significant because rather than developing pharmaceuticals and health foods from land-based resources, such as mushrooms and plant extracts, as has been done in Taiwan in the past, it relies on a marine resource. Moreover, this is the first research to directly demonstrate that phycocyanin boosts immune functions and is effective in particular in treating allergy and immunity diseases. These characteristics make phycocyanin suitable for development into a

Prof. Bor-luen Chiang and Prof. Hong-nong Chou speak to reporters about their new asthma drug findings.



drug for the treatment of allergic asthma.

As an island, Taiwan has abundant marine resources. The exploitation of phycocyanin to manufacture biotech health and pharmaceutical products could provide a new direction for the development of Taiwan's biotechnology sector.

## NTU Hospital Completes Heart Transplant with Incompatible Heart

**A** cross-match test is a very important compatibility test conducted prior to a heart transplant operation. A positive result indicates that there is an extremely high probability that hyperacute rejection of the heart will occur after the procedure, and there is usually no choice but to abandon the operation.

The heart transplant team at NTU Hospital recently succeeded in completing a transplant despite a cross-match test indicating incompatibility by performing plasmapheresis, that is, removing blood from the body for treatment and then returning it, and administering immunosuppressive drugs and immune globulin.

In this case, a 22 year-old man suffering severe heart failure and kept alive by extracorporeal membrane oxygenation required a heart transplant but had already produced positive cross-match tests with five potential donors, and his antibody values continued to rise.

Though plasmapheresis had been performed five times, the test still showed incompatibility with a sixth donor. The patient's antibody counts had fallen, however, and the doctors were pressed for time if they wished to save him. After communicating with the family, they decided to resort to the method of performing plasmapheresis during the transplant while administering immunosuppressive drugs and



immune globulin.

Although plasmapheresis is already used successfully for incompatible kidney transplants, the procedure requires one to two weeks to completely eliminate antibodies, and antibody levels will increase again if the transplant is not performed and immunosuppressants are administered. Consequently, this technique is usually used only when there is a living donor who is able to coordinate completely with the time of the transplant.

## Geosciences Department Hosts Taiwan-India GeoScience Workshop

**D**uring the 2010 annual meeting of the Asia Oceania Geosciences Society in Hyderabad, India, in July, the Taipei Economic and Cultural Center in New Delhi and Indian Ministry of Earth Sciences decided to convene bilateral workshops focusing on the subjects of seismology and climate change, respectively, in 2011 and 2012.

The first of these workshops, the Taiwan-India GeoScience Workshop, was hosted by NTU Department of Geosciences on January 10. NTU Vice President George Chen attended to address the workshop, which drew several prominent geoscientists from Taiwan and India. Addressing the issues of earthquake risk and mitigation, the workshop focused on cooperation and exchanges concerning earthquake precursors, earthquake early warning systems, and numerical modeling and simulation. The attendance of several Indian visiting professors at our university helped make the discussion lively. An agreement to develop collaboration between Taiwan and India in the field of seismology was reached during the workshop.

In Taiwan, active seismicity and a high quality seismic monitoring network provide us a precious database for studies in seismic hazard mitigation. On the other hand, Indian scholars have good mathematics and English abilities, which can aid in sophisticated statistical analysis and data explanation. Through further cooperation, it is expected that the assessment of earthquake hazards in the two countries will improve.



NTU Vice President George Chen addresses the Taiwan-India GeoScience Workshop.

## NTU Professor Leads Academic Delegation to Energy Conference in Ireland



**A** delegation of around 15 scholars working in energy related fields in universities around Taiwan took part in the 2010 Taiwan-Ireland Bilateral Energy and Information Academic Symposium in Dublin, August 30 and 31. Director of the NTU Energy Center Prof. Falin Chen headed the Taiwanese delegation, while Aoife Foley, who was supported by University College

Cork's engineering college, led the Irish delegation. Each delegation included outstanding scholars in the areas of marine energy, solar energy, wind power and energy storage.

Taiwan's representative office in Ireland was highly supportive of the symposium from the beginning. Taiwan's Representative to Ireland Nan-yang Lee arranged a personal meeting with Ireland's Minister for Communications, Energy and Natural Resources Eamon Ryan who expressed his support for the symposium. Representative Lee also gained the support of Science Foundation Ireland for the symposium.

Issues addressed during the symposium included renewable energy in Taiwan, the future power grid of Ireland, information and communications technology in energy systems, ocean energy, solar energy, renewable energy, energy storage and smart grids.

Among the fruits of the symposium was the establishment of an Ireland-Taiwan coordination team, which is applying to the European Union's Seventh Framework Program for research funding. Also, leading smart grid and energy technology researchers from Taiwan and Ireland established a coordination and cooperation team with the mission of making the two countries' research in emerging energy fields achieve a world-leading position.

Ireland and Taiwan both possess limited energy resources and are highly energy dependent, with 81% of Ireland's and 91.6% of Taiwan's energy needs being met by imported fossil fuels. By 2020, Ireland aims to obtain 40% of its electricity, 12% of its heating and 10% of its transportation energy from renewable sources. Taiwan hopes to be able to generate 15% of its electricity from renewable energy, enhance its smart grid technology and establish green energy transportation by 2025.

# 17TH NTU ART FESTIVAL BLENDING ART WITH CAMPUS LIFE



The NTU Art Festival has entered its 17<sup>th</sup> year. The festival is currently running an installation art exhibition based on the festival's core mission of encouraging campus participation. Thanks to the exhibition team's hard work, all corners of the NTU campus feature various creative artworks, large and small. NTU doesn't have a design or art department, and while it has theater and music departments, they have their own approaches. Therefore, the NTU Art Festival aims not only to provide students with a space to express their artistic talents, but seeks as well to overturn most people's impression that art is difficult to approach and inject art into the daily campus life.

Tsong-ta Hsieh, a second-year student in the NTU Graduate Institute of Journalism is the team's director of marketing, says the team wants to use the approach of public art to encourage student interaction with the campus' public spaces. Hsieh raises the grassy lawn behind the NTU Library as an example, noting that it's a shame that people rarely hang out there. He says people will be drawn over to the lawn after public art is placed there. Hsieh wants to make students identify with the idea that the

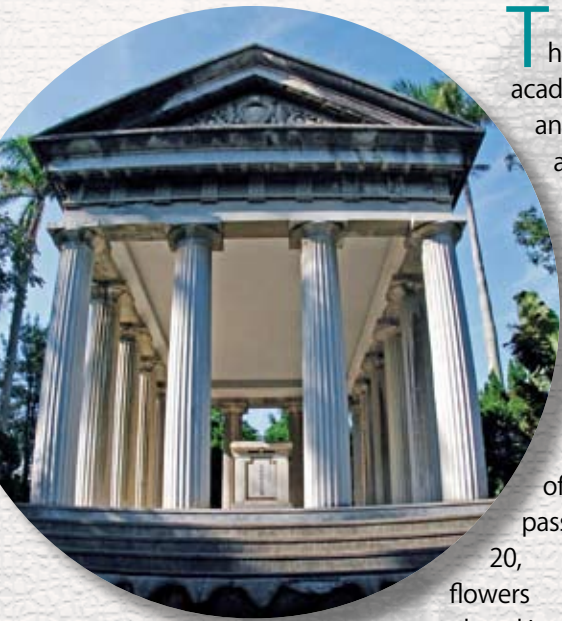
lawn can be used to play and relax and that it is not carefully tended simply for people to look at. Encouraging students to return to the public spaces that belong to them is the NTU Art Festival team's ultimate goal.

Hsieh pointed out that all of the examples of installation art were done through the cooperative efforts of students, adding that this was quite difficult to pull off because it required professional construction skills. Though many people may not understand the artworks, the art festival team still wants to subvert people's conventional ideas of art; the important thing is the process and ideas of artistic creation. Art, according to Hsieh, is a means of telling people they can view their surroundings in a variety of new ways.

Everyone on the NTU Art Festival team, made up of students from throughout NTU, is currently getting ready for the festival's climax in May. Every day of that month an art event will be featured. Besides fixed works of installation art, there will be a range of performance art as well, including film, music, theater, dance and more. One and all are welcome to NTU to come play with art!



# Exhibition Commemorates Former NTU President Fu on 60<sup>th</sup> Year of His Passing



The NTU spirit of academic autonomy and a liberal atmosphere was established by NTU's fourth president, eminent Chinese educator and linguist Ssu-nien Fu. As the 60<sup>th</sup> anniversary of President Fu's passing was December

20, flowers were placed in

the Fu Ssu-nien Memorial Garden, where President Fu's ashes are interred, in memory of his sacrifice for NTU. To formally mark this anniversary, the university held a memorial exhibition in honor of President Fu at the NTU Library from December 24 to February 27.

Born in 1896, Fu was a pioneer of modern China's New Culture Movement. He made major contributions to Chinese studies and his scholarly attainments and reputation are known around the world. President Fu once served as the director of the Institute of History and Philology at Academia Sinica, where he spearheaded research into Chinese history and linguistics. He was also an acting president of Peking University. And, from January 1949 to December 1950, President Fu served as the fourth president of National Taiwan University.

Fu took over as president of NTU during a time a great turmoil in the country. It was his noble character, magnanimous attitude and diligent, selfless work ethic that allowed him to lay an important foundation for the university's development. President Fu's insistence on maintaining academic independence and honor and advocacy of the equal importance of education and research molded the university's fine academic traditions. He declared explicitly to his students and

faculty that the reason for running a university was for academics, for the youth and for the culture of China and the world. President Fu also gave us our school motto "Integrity, Diligence, Patriotism and Philanthropy" to encourage both students and professors. And, in line with his proclamation "we dedicate this university to the spirit of the universe," he blended East and West to plant the seeds of the legacies of liberalism and humanism on the NTU campus.

The exhibition, titled "We Dedicate This University to the Spirit of the Universe—60<sup>th</sup> Anniversary of the Death of NTU President Ssu-nien Fu Memorial Exhibition," commenced with an opening ceremony on December

20. Speeches were delivered by honored guests including NTU President Si-chen Lee, Dean Chun-chieh Huang of the NTU Institute for Advanced Studies in Humanities and Social Sciences, Secretary General Cher-jean Lee of the Taiwan Provincial Consultative Council and Prof. Ching-ming Ko of the NTU Graduate Institute of Taiwan Literature.

A number of older alumni who studied at NTU during President Fu's term were also among the honored guests. These included alumni who had witnessed history, such as people who had been incarcerated



during Taiwan's period of White Terror and the person who had carried President Fu's ashes onto the NTU campus for burial. To this day, these older NTU brothers and sisters recall with profound gratitude how Fu had, in word and deed, defended the students, maintained the safety of students and faculty and cared for the students at that time.



Those who missed the opportunity to view the exhibition in person can still visit the exhibition's website at <http://www.lib.ntu.edu.tw/gallery/FuSsuNien/>.



## International Chinese Language Program Director Leads Delegation to Italy



International Chinese Language Program Director Dr. Yanwing Leung led a delegation to Italy during the first week of December. Senior Instructors Chang-jen Chou and Meei-yuan Fann, Program Secretary Joanna Chen and Business Manager I-chi Liu accompanied Dr. Leung. The purpose of the trip was to establish ties with Italian universities, promote ICLP and its teaching methodology, and discuss a student and teacher exchange program.

The delegation met with faculty and department heads of Chinese programs and international affairs directors and officers at Roma Tre University, the University of Milan, the University of Venice and the University of Naples - L'Orientale. At these four universities, a combined total of 2,800 students study Chinese, with 1,300 studying in Naples alone. Instructors Zhou and Fann taught demonstration classes of both intermediate conversational Chinese and classical Chinese.

While ICLP's visit provided Italian universities the chance to learn about ICLP and its approach to teaching, the trip was also an excellent opportunity for ICLP to learn more about the study of Chinese in Italian Universities. The ICLP delegation learned that more students at the university of Venice study Chinese than any other language, including English. Even more impressive was the fact that the University of Naples-L'Orientale has taught Chinese since the eighteenth century.

## Proteomics and Protein Function Lab Boosting Mass Spectrometry Capabilities



The Proteomics and Protein Function Core Laboratory's workflow for two-dimensional electrophoresis analysis

The challenges proteomics confronts increasingly demand instruments with better performance characteristics, including higher resolution, mass accuracy, dynamic range, and tandem mass spectrometry capabilities. The Proteomics and Protein Function Core Laboratory is therefore acquiring a powerful new platform called LTO Orbitrap Velos.

This advanced mass spectrometry system is the recognized standard for accurate mass and high-resolution measurement combined with superior dynamic range and unsurpassed sensitivity; it is the only technology capable of providing all four benefits at the same time. The system's analytical performance supports a wide range of applications, from routine compound identification to the analysis of trace-level components in complex mixtures, and it can be used in such areas as proteomics, drug metabolism, doping control, the detection of contaminants in food and feed, characterization, and quantitation.

The proteomics lab uses a top-down and bottom-up proteomics approach with state-of-the-art tandem mass spectrometry to obtain qualitative and quantitative protein profiles from clinical samples to develop new approaches to early diagnosis, prognosis, patients' markers selection, therapeutic interpretation and target identification for diseases. The laboratory also works closely with other NTU Center of Genomic Medicine laboratories to gain a wider systematic view of diseases.

The lab's stated mission is to provide comprehensive technological support for biomedical research, both basic and with potential clinical applications, on topics ranging from cancer and the pathogenesis of infectious diseases to drug and vaccine design.

## Physics Department Holds Month-long Exhibition of Historical Artifacts



The Department of Physics held an exhibition looking back over the history of the department's development from December 25 to January 31. The exhibition opened with a symposium attended by three generations of department faculty and alumni.

Retired professor Po-chuan Tsui, who worked to improve experimental general physics instruction in the department's early days, was the symposium's most honored guest. The warm atmosphere of the event reverberated with the department's oral history as old friends and colleagues came together to share memories of their time in class and participation in the

establishment of experimental general physics at NTU.

Prof. Tsui, already in his eighties, spoke of his experience leading the reform of the department's experimental general physics curriculum in the early days. Tsui recalled redesigning experiments and compiling Mandarin Chinese teaching materials and textbooks by referring to periodicals and teaching materials from Europe and North America. He also described leading the experimental general physics team in using local methods to expand and improve its experimental instruments. Prof. Tsui's efforts resulted ultimately in major improvements to the department's experimental general physics instruction.

Director of the Research Center for Digital Humanities Jieh Hsiang and Associate Director of the NTU Library Kuang-mei Lin noted that it is necessary to preserve the physics department's history because it is the history of higher scientific education and the popularization of science in Taiwan.

## Metabolomics Lab Pursues Science of the Future for Personalized Medicine

Metabolomics was cited as one of the technologies that will blossom to benefit science in the "2020 Vision" section of *Nature* in early 2010. It already plays a vital role in research exploring personalized medicine, microbiome, drug discovery and mental health.

The mission of the Metabolomics Core Laboratory at the NTU Research Center for Medical Excellence is to provide a world-class metabolomics knowledge infrastructure to improve translational research and human health. Operating as a multidisciplinary service core, the MetaCore serves as a bridge between basic and clinical research concerning the potentials and benefits of metabolomics for personalized medicine.

Metabolomics (or metabonomics) is defined as "the quantitative measurement of the dynamic metabolic response (metabolites) of living systems to patho-physiological stimuli or genetic modification." Consistent with the central dogma of molecular biology, metabolomics' place is fundamental within the hierarchy of genome, transcriptome, proteome and metabolome.

Much like genomics' aim to unravel the structure of the genome, metabolomics focuses on understanding the many small molecule metabolites that result from a cell/organ/organism's metabolic processes. There are an estimated 5,000-20,000 endogenous human metabolites, and analyzing their production gives an accurate picture of the physiology of a cell/organ/organism at a given moment in time.





## NTU Press Releases Works of Two Great Post-War Literary Figures

NTU Press has published *Diary of Xu Shoushang*, *An Anthology of Xu Shoushang: The Taiwan Period 1946-1948* and *An Anthology of Su Weihsung* as the first books in its *Taiwan Literary and Cultural Research Series*.

Xu Shoushang was a leader of Taiwan's cultural reconstruction following World War II and promoted the works of Lu Xun and the New Culture Movement. He served as the first chairman of NTU's Department of Chinese Literature.

Su Weihsung, editor of the literary journal *Formosa*, was a pioneer of Taiwanese literature during Japanese colonization and part of the first generation of local Taiwanese scholars to join the NTU Department of Foreign Languages and Literatures after World War II.

## NTU Press Publishes Book and DVD of Wang Wen-hsing Manuscripts

NTU Press has published a book and DVD set for the manuscripts of Wang Wen-hsing's classic Taiwanese novels *Family Catastrophe* and *Backed Against the Sea*. The DVD contains the corrected manuscripts of *Family Catastrophe* and the first half of *Backed Against the Sea* as well as audio novels recorded by the author himself for both books. The manuscripts reveal the creative processes behind these works while the audio books allow the booklover to hear these great works in the author's own voice.

Wang is a professor in the NTU Department of Foreign Languages and Literatures who gained wide notoriety in literary communities in Taiwan and abroad due to his innovative use of words and unique style.



# **NTU EMBA Program's Financial Times World Ranking Rises to 37th**

NTU is proud to announce that the ranking of the College of Management's Executive Master of Business Administration program climbed from 40th in 2009 to 37th in 2010 in the Financial Times' annual ranking of EMBA programs around the globe.

The British newspaper ranks EMBA programs annually based on such factors as graduate salaries, professional advancement, international performance, female faculty and student ratios, and research performance. While most of the schools in Asia that made it into the ranking are partnered with schools in other countries, NTU's EMBA program managed to rise in the ranking as an independent program.

The EMBA program also stayed at the top of Cheers magazine's annual survey of EMBA programs in Taiwan.

This international and local recognition give NTU's EMBA program greater confidence as it marches forward on its road to internationalization and further demonstrates that this program is the ideal choice for business executives seeking continuing education.



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