

# NTU



## NEWSLETTER

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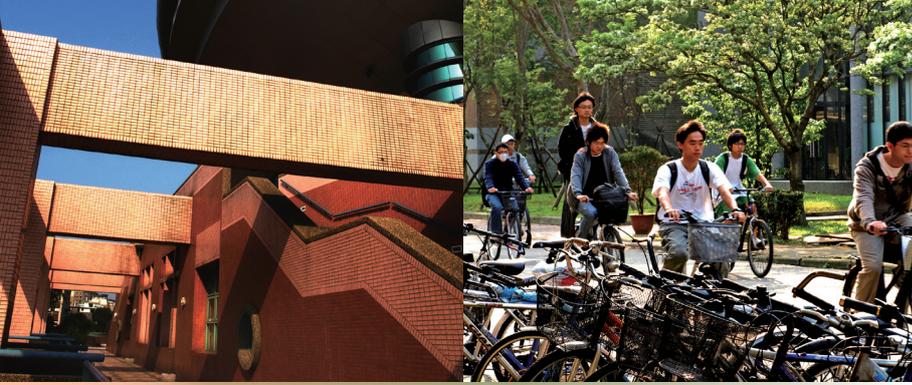
## **NTU Celebrates 85 Years of Free Spirit**

**Presidential Science Prizes to Alumni**

**Iso House Revamped, Creators of Penglai Rice Remembered**

**Optimal Treatment for Pancreatic Cancer Identified**

**Special Report**  
NTU Garage



# CONTENTS

DECEMBER 2013 / NO. 39

## SPECIAL REPORT

- 1 Honors Presented at 85th Anniversary Celebration Ceremony
- 2 President Yang to Students, Faculty: "Embrace the NTU Spirit"
- 3 Honorary Doctorate Recipient Morris Chang: "One Son, Eight Doctorates"
- 4 Social Contribution Award Winner: "Action the Answer to All Questions"
- 5 Online Course Integrates Multiplayer Social Gaming and Learning
- 5 NTU Garage: A Coworking Space for Student Entrepreneurs

## HONORS

- 6 Taida People Win Presidential Science Prizes
- 7 NTU Chemist and Pediatrician Win TWAS Prizes
- 7 NTU Professor is First in Asia to Win Intel Early Career Award
- 8 Two Professors Receive Prestigious Engineering Chair Awards
- 8 Physicist Studying Nanoscale Systems Named TWAS Young Affiliate

## INTERNATIONAL CORNER

- 9 Taiwan Delegation Attends European Education Conference
- 9 Education Fair Welcomes International Students
- 10 Study Abroad Fair Creates a World Fair of Opportunities
- 10 COS Hosts First Summer School in Topological Insulators and Spintronics

## RESEARCH ACHIEVEMENTS

- 11 Analysis Reveals Best Post-Surgical Treatment for Pancreatic Cancer Patients
- 12 International Journal Articles Shine Light on Innate, Adaptive Immunity

## CAMPUS SCENES

- 13 NTU's Iso House Preserves History of Taiwan's Favorite Rice

## TEACHING & LEARNING

- 14 NTU Shines Again as Premier IC Conference Accepts Four Papers
- 14 Students' Five-axis Machine Tool Earns Championship
- 15 International Photovoltaic Conference and Exhibition Held the Same Week
- 16 Summer Biotechnology Program Broadens Students' Global Outlook

## NTU AT A GLANCE

The Man with the Compound Eyes: The World Tour



## From the President's Office

NTU held myriad events celebrating the university's 85th anniversary in November. An anniversary ceremony brought together thousands of students and faculty members as well as alumni from around Taiwan and abroad to celebrate their alma mater's birthday. I thank the administrative team for its assistance; the scene of the ceremony was one of ebullience and warmth. I presented honorary doctorates and distinguished alumni awards as well as NTU's first Social Contribution Special Award, which recognizes students who work for the public welfare, demonstrate social compassion, contribute to society and embody a spirit of helping others. An exhibition centered on the themes of tradition, innovation, transcendence and contribution highlighted NTU's qualities and gave viewers a fresh impression of NTU.

The NTU Student Association organized and self-funded a nighttime party that dazzled partygoers with projections of 3D architectural statues. Featuring performances by students clubs, the party entertained more than 8,000 people, demonstrating again the creativity and exceptional organizational skills of our students. A YouTube video of the 3D projections drew tens of thousands of visits within one day, allowing alumni around the globe to share NTU's celebration with the people of all nations.

Encouraging students to develop their creativity and build their own businesses, the administrative team introduced NTU Garage, which invites alumni business leaders who possess abundant entrepreneurial experience to give NTU students professional guidance, practical training and entrepreneurial advice. Bringing new life to NTU's historical assets, we will open a café at the Gallery of NTU History and are designing a student activity stage and faculty lounge adjacent to Drunken Moon Lake.

We aspire to promote a university spirit, passing on our traditions and exploring the unknown while embracing the NTU spirit. Tradition, innovation, transcendence and contribution represent NTU's persistent march to the top. I look forward to NTU standing at the pinnacle of the ethnic-Chinese world and among the world's elite, and serving as a major powerhouse for Taiwan's sustainable development.

楊泮池

President  
Dr. Pan-Chyr Yang

# HONORS PRESENTED AT 85TH ANNIVERSARY CELEBRATION CEREMONY

**N**TU marked the 85th anniversary of its founding with a festive celebration ceremony at the NTU Sports Center on November 15. During the ceremony, the university recognized two titans of Taiwan industry with honorary doctorates and named seven former students as distinguished alumni. NTU

President Pan-Chyr Yang also presented the university's first Student Social Contribution Special Award as well as this year's Outstanding Youth Awards. Among those attending the ceremony were former NTU presidents, alumni from around Taiwan and abroad as well as distinguished Taiwanese and international guests. The NTU Anniversary Tea Party took place following the ceremony.

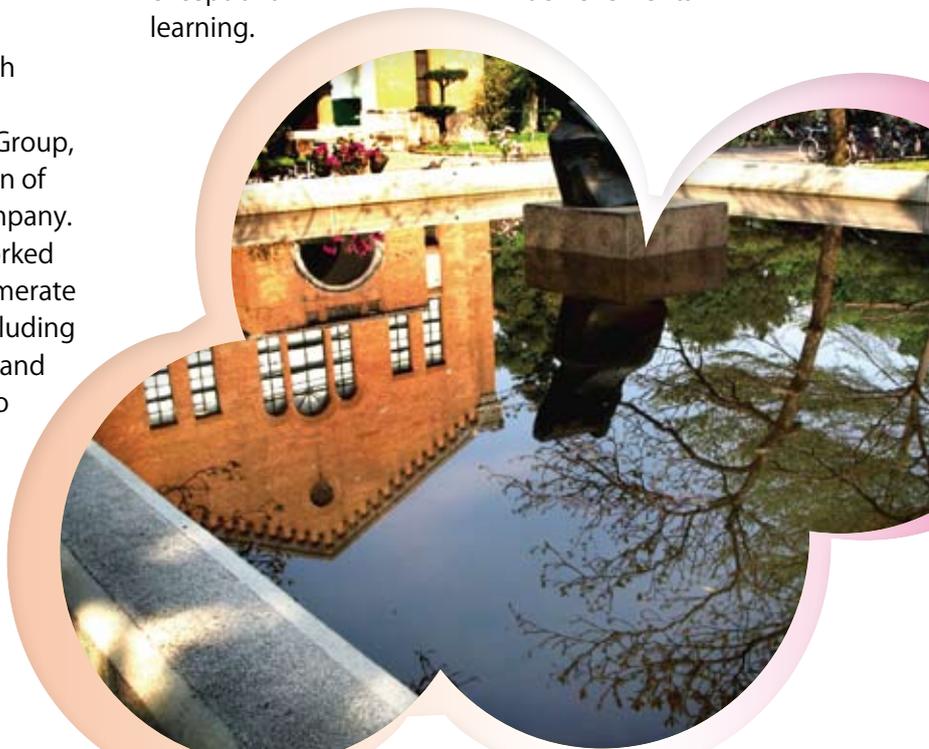
Addressing the ceremony, President Yang called on all students and faculty members to promote the university spirit and pass on the university's traditions and explore new frontiers. He moreover stressed his hope that all would embrace the NTU spirit by creating more talented individuals for the betterment of society so that Taiwan can achieve sustainable development and shine on the world stage.

The two business leaders recognized with honorary doctorates were Chang Yung-Fa, chairperson and founder of the Evergreen Group, and Morris Chang, the founding chairperson of Taiwan Semiconductor Manufacturing Company. Beginning in the 1960s, Chang Yung-Fa worked from the ground up to build up his conglomerate of globally recognized business brands, including the Evergreen Marine Corporation, EVA Air and Evergreen International Hotels. His desire to feed back to society led him to establish the Chang Yung-Fa Foundation, which works for the public good here in Taiwan and around the world.

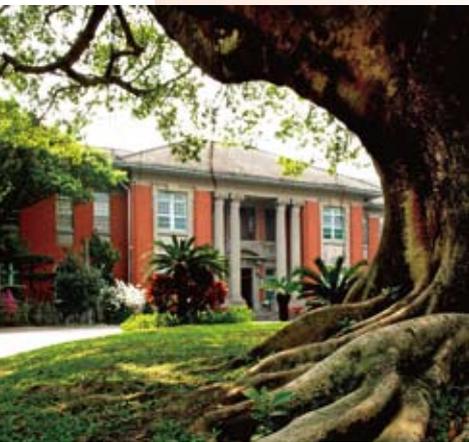
During the 1980s, Morris Chang assisted the government in drafting the technology policy that drove the nation's industrial development. He also established TSMC, introducing revolutionary changes that transformed the global semiconductor industry. Owing to his exceptional contributions and professionalism, Morris Chang is widely known as Taiwan's father of semiconductors as well as the godfather of professional integrated circuit manufacturing and services. He founded the TSMC Education and Culture Foundation to carry out his company's corporate social responsibility by serving the public in the four areas of cultivating talent, promoting the arts, building community building, and encouraging employee volunteers.

NTU selected the seven distinguished alumni in recognition of their significant contributions to the university and society at large. These outstanding former NTU students were: in academics, Ming T. Tsuang, I-Chiu Liao, Kuo-Nan Liou and Mau-Chung Frank Chang; in commerce and industry, Shang-Yi Chiang; and, in community service, Kun-Hu Hwang and Jong-Tsun Huang.

Presented for the first time this year, the Student Social Contribution Special Award was bestowed on Ms. Hsin-Lin Shen for promoting public welfare and demonstrating social compassion. The Outstanding Youth Awards recognize students who have demonstrated exemplary integrity and made exceptional achievements in learning.



## President Yang to Students, Faculty: “Embrace the NTU Spirit”



*In his anniversary speech, NTU President Pan-Chyr Yang urged all students and faculty members to embrace the NTU Spirit. An abridged translation of the speech follows:*

Today we meet to celebrate the joyous occasion of the 85th anniversary of the founding of National Taiwan University. Here, we bestow an honorary doctorate on Morris Chang and recognize distinguished alumni Ming T. Tsuang, I-Chiu Liao, Kuo-Nan Liou, Mau-Chung Frank Chang, Shang-Yi Chiang, Kun-Hu Hwang and Jong-Tsun Huang. On behalf of NTU, I extend the most supreme respect to Morris Chang for his accomplishments and contributions in his lifelong endeavor to promote the development of the semiconductor industry as well as to the distinguished alumni for their impressive achievements in academics, commerce and industry, community service, and nation building. Furthermore, I present the accomplishments and contributions these exceptional individuals have made for the nation and society as models for all students and faculty members to emulate.

We present as well the Student Social Contribution Special Award to Ms. Hsin-Lin Shen for her work in promoting public welfare and her demonstration of social compassion. Ms.



Shen’s numerous charitable deeds are a perfect demonstration of our university motto: Build Character, Pursue Knowledge, Love Our Country, Love Our Fellow Man.

Perhaps you have already noticed; this year’s ceremony is different from those of previous years’. We have arranged an exhibition around the theme of tradition, innovation, transcendence, and contribution in order to highlight the qualities of NTU people. We have also expanded the participation of students, faculty members and staff. Students have organized a massive party that will be our first anniversary party to feature projections of 3D statues.

Being a Taida person, you enjoy affirmation and praise here in Taiwan, across the ethnic-Chinese world, and even around the globe. However, you bear a responsibility as well. The reason a Taida person receives affirmation is due to the image held by society that has been created over decades by students, faculty members, and alumni through their accumulated academic achievements and social contributions. This image brings a Taida person recognition and approval, yet it also means each Taida person bears a special responsibility. A Taida person is also held to higher expectations in all arenas.

The free academic atmosphere that NTU has emphasized since its inception, and that has been sustained by students and faculty members collectively, stands as the prime reason legions of students long to enter Royal Palm Boulevard and become NTU people. NTU encourages a free academic atmosphere in order to enable each NTU person to develop, adhere to his or her ideals, pursue excellence, and moreover defend the diverse values of “together, but different.” History proves as well that NTU people who have developed within this open atmosphere have time and again benefited the transformation and development of Taiwan’s democracy, economy, and society through their innovative thinking and specific actions.

# Honorary Doctorate Recipient Morris Chang: “One Son, Eight Doctorates”



NTU President Pan-Chyr Yang confers an honorary doctorate on Morris Chang, founding chairperson of Taiwan Semiconductor Manufacturing Company.

*In his honorary doctorate acceptance speech, Morris Chang, founding chairperson of Taiwan Semiconductor Manufacturing Company, told his story of “One Son, Eight Doctorates.”*

NTU stands as Taiwan’s premier institution of higher learning and I feel highly honored to receive an NTU honorary doctorate today. I wish to thank NTU and to thank Taiwan Semiconductor Manufacturing Company. Today, I have invited quite a few TSMC colleagues to witness the ceremony. If not for them, I would not be standing here today.

Speaking of doctorates and myself, we share a predestined relationship of irreconcilable resentment. I pursued it in the beginning, yet it refused me. Later, our hearts joined together happily. I desired it, and it desired me as well. In the end, I had abandoned the pursuit, still it came to me insistently.

During primary school, high school, and university, I could not be considered a particularly hardworking student. I have often told my colleagues that I realize I always remained in the top 30%,

but I also never entered the top three percent.

Failing to earn a doctorate at MIT was at first the greatest setback of my life to age 24. Later, however, this setback turned out to be a blessing in disguise for my subsequent development. Why is that? Because, now that the path of academic research had come to an end, I decided to pursue the path of business management. Furthermore, I was originally in the Department of Mechanical Engineering. Since the road to a doctorate in mechanical engineering had ended, I sought out an emerging industry. That emerging industry was the road of semiconductors and semiconductor operations and management.

There is another important point. The impact that the doctorate setback made on me was that I started to be more diligent. It was not diligence for a degree. This habit of diligence, I have preserved to this day.

Around six years after the setback, my company sent me to Stanford on full salary with all expenses covered to pursue

a doctorate. That was the “our hearts joined together happily” I spoke of just now. Many things happened afterwards. Over the last nearly two decades, I have received six honorary doctorates. This is the seventh. Add the one I earned myself, and there are eight.

I recall my father had a friend with five sons, four holding doctorates. When he penned New Year’s couplets, there was one line: “Five Sons, Four Doctorates.” This was rather arrogant. One year we paid a New Year’s visit. When the topic arose, my father became vexed. After leaving, he told my mother he could write “One Son, One Doctorate,” and my mother said that seemed a little weak. If my father were here today, he could write “One Son, Eight Doctorates.” And, if my mother were here today, I believe she wouldn’t say that seemed a little weak.

## Social Contribution Award Winner: “Action the Answer to All Questions”



**M**s. Hsin-Lin Shen of the Graduate Institute of Journalism received NTU's first Student Social Contribution Special Award in November. Learning on her own despite her family's poverty, Shen designed a clothing website for her parents when she was twelve, and has used the internet to perform countless charitable acts since then. Her story is required reading for all primary, junior-high, and high-school students. An abridged translation of her acceptance speech follows:

I feel extraordinarily honored to receive such an important award. For me, it comes not simply as an affirmation, but as a responsibility as well. Actually, since I started this humanitarian volunteer work at the age of eleven, whenever someone says my compassion is doing the public good, I feel very embarrassed. My approach is simply to ceaselessly discover the problem and perceive the problem, and then solve the problem. I employ a method of fighting the large with the little,

and, lacking any background, I tripped up continuously along the way. Still, I inevitably tell myself, “Don't worry. You just need to stand up one more time than falling, and it's worth it.”

I often ask myself two questions: First, how should I go about creating my own road? Second, on this road, how should I then help others create their own roads? Make every person you meet able to become even better. How do we find the answers to these two questions? Before discussing my method, I wish first to challenge you all with a question: What is the longest distance on earth? Some people reply, “I'm standing by your side, but...you're using your iPhone.” And some say, “Perhaps it's the distance from Monday to Friday.”

However, I've discovered there's a distance that is both long and far, as well as short. It is in fact the distance between knowing and doing. Take action! Action is the answer to all questions. If you are willing to act, believe me,

you will indeed be disheartened. Why? Because when you start to observe, and discover problems, you will find this society, this era, overflows with myriad problems. Still, please remember to ask yourself, “So what? What does that matter?” Though there are so many problems, the crucial point is: How do we make each of us become the answer?

Finally, I want to remind all of the NTU students seated here: The country in fact invests in each student around NT\$360,000 in educational funding annually. I



often wonder where this funding comes from. How much comes directly from people who are outside bent at the waist toiling and sweating rain or shine at this very moment? So, always remember to remind yourselves: What's the difference between elite and intellectual? I believe elite means using society's resources to make oneself better while intellectual means using what one has learned to make this society better.

## ONLINE COURSE INTEGRATES MULTIPLAYER SOCIAL GAMING AND LEARNING

Early this year Stanford professor and cofounder of the massive open online course (MOOC) company Coursera Andrew Ng invited Prof. Benson Ping-Cheng Yeh of the Department of Electrical Engineering to design NTU courses for the open-access online learning platform that has drawn millions of students. In August, Prof. Yeh, associate director of the Center for Teaching and Learning Development at NTU, responded by introducing two Coursera courses: his own "Probability" and the Chinese History course "Qin Shi Huang," taught by Prof. Shih-Hao Lu of the Department of History on the first emperor of the Qin dynasty who rose to power in 221 BC.

The courses are Coursera's first courses to be taught in Mandarin,



and nearly 24,000 students have enrolled.

The enthusiastic response to "Probability" can be attributed in part to Prof. Yeh's integration of a multiplayer social gaming platform called PaGamO Online. An innovative coupling of online gaming with online learning, the game requires students to apply their knowledge of probability in responding to the challenges they confront in attempting to occupy new territories across an interactive

map, much like the game World of Warcraft.

To gamify his course, Prof. Yeh recruited a team of a dozen students to join him for a summer of intense designing and coding. As any subject requiring closed-answer questions can use PaGamO without modification, the team is currently working to extend the platform to other courses.

Prof. Yeh and PaGamO have been featured in reports on the Coursera website and in the international media.



## NTU GARAGE: A COWORKING SPACE FOR STUDENT ENTREPRENEURS

The university held a press conference on October 21 to announce the official commencement of a new entrepreneurship program called NTU Garage. Developed by the NTU Creativity and Entrepreneurship Program, NTU Garage is a six-month program that provides working space and professional guidance to teams of entrepreneurial NTU students to encourage them and give free reign to their innovative ideas for starting businesses.



Confronted with lingering stagnancy in the employment market, many students fear they face the gloomy prospect of a monthly salary of only NTD22,000 after graduation. However, numerous global corporations that have changed the way we live, like Google and Facebook, in fact were created by university students. And, Apple and Cisco were started in garages.

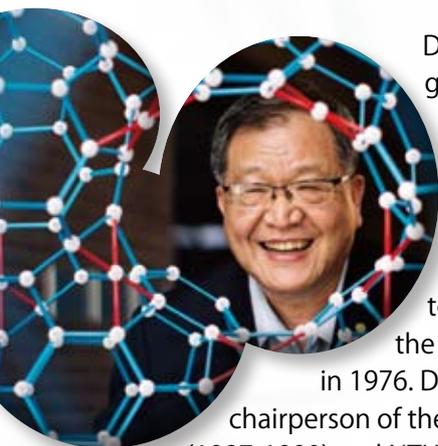
Based on the concept of coworking spaces, NTU Garage provides its student entrepreneurs with a communal office and meeting space. It also offers office equipment and services that facilitate interaction among team members and between teams. The program also organizes entrepreneurship classes, team interaction activities, as well as lectures by and meetings with leading business executives.

Among the dozens of business luminaries invited to share advice with the young entrepreneurs of NTU Garage are Barry Lam, the founder and chairperson of Quanta Computer, Chairperson Wu-Fu Chen of iD Innovation Inc., Chairperson Jonney Shih of ASUSTeK Computer Inc., and Steve Day, chairperson of Wowprime Corp.

NTU Garage currently supports 30 new teams each year, but is expanding yearly and aims to have created over 1,000 new businesses within a decade.

## TAIDA PEOPLE WIN PRESIDENTIAL SCIENCE PRIZES

Members of the NTU family claimed all three of this year's Presidential Science Prizes, which were announced in October. Dr. Shie-Ming Peng, an alumnus of the Department of Chemistry, received his prize in the category of Mathematical and Physical Sciences, while Department of Physics alumnus Dr. Chih-Yuan Lu was recognized in the category of Life Sciences. Dr. Michael M. C. Lai is an alumnus of the College of Medicine's School of Medicine and was awarded his prize in the category of Applied Sciences. Conferred biannually, the prize is the nation's highest honor for academic research.



Dr. Shie-Ming Peng graduated from NTU with a Bachelor's in Chemistry in 1970, and went on to earn his doctorate at the University of Chicago in 1975. He returned to NTU to take up a teaching post in the Department of Chemistry in 1976. Dr. Peng has served as

chairperson of the Department of Chemistry (1987-1990) and NTU vice president (1999-2002), and is presently the vice president of Academia Sinica and a chair professor of the Department of Chemistry. His research interests include inorganic chemistry, crystallography and nano-material science.

Peng's countless awards and honors include: the National Science Council Outstanding Research Award and Distinguished Researcher, Sun-Yat Sen Foundation Academic Award, Chinese Chemical Society (Taipei) Academic Award, Ministry of Education Science Award, Ministry of Education Chair Professor, Academia Sinica Academician, TWAS (Third World Academy of Sciences) Prize in Chemistry, TWAS member, Phi Tau Phi Taiwan Chapter Outstanding Achievement Award, Y.Z. Hsu Scientific Chair Professor, Taiwan-French Science Prize, NTU Chair Professor, Fellow of the Royal

Society of Chemistry, Japan Society of Coordination Chemistry International Award and Federation of Asian Chemical Societies Foundation Lectureship Award.



Dr. Chih-Yuan Lu earned his Bachelor's in Physics from NTU in 1972, and followed that up with a PhD from Columbia in 1977. Dr. Lu has taught as an associate professor and full professor at National Chiao Tung University and as a visiting professor at North Carolina State University. He has served as a member of technical staff and project leader at AT&T Bell Labs, vice director of the Industrial Technology Research Institute's Electronics and Optoelectronics Research Laboratories, president and vice president of Vanguard International Semiconductor Corp., and chairman and CEO of Ardentec Corp. Lu is currently president of Macronix International Co.

Dr. Lu has accumulated numerous local and international awards and honors over the years, including: NTU Distinguished Chair Professor, NTU Distinguished Alumni Award, Ministry of Economic Affairs National Invention Award, ROC Chamber of Commerce Superiority Business Award, Physical Society of Republic of China (Taiwan) Special Contribution Award, Chinese Society for Management of Technology Fellow, Chinese Institute of Engineers (CIE-USA) Distinguished Achievement Award, Asia-Pacific Academy of Materials Academician, IEEE Fellow, Third Millennium Medal and Frederik Philips Award, and American Physical Society Fellow.

## NTU Chemist and Pediatrician Win TWAS Prizes

Two of the three Taiwanese scientists awarded the prestigious TWAS Prize for 2013 are NTU faculty members. The award winners from NTU are Prof. Chung-Yuan Mou, who is the current deputy minister of the National Science Council and a former chairperson of the Department of Chemistry, and Prof. Mei-Hwei Chang of the Department of Pediatrics at NTU Hospital, who is the director of the hospital's Hepatitis Research Center. Dr. Sue Lin-Chao, a distinguished research fellow at the Institute of Molecular Biology, Academia Sinica, received this year's TWAS Prize in Biology as well.

Prof. Jeng-Da Chai of the Department of Physics was also selected as a TWAS Young Affiliate for 2013. This brings to three the number of NTU scholars recognized by the prestigious international science association this year.

TWAS, The World Academy of Sciences, is an association of more than 1,000 leading international scientists working in developing countries that strives to promote and encourage excellence in scientific research in the developing world. The academy announced the recipients of this year's TWAS Prizes at its 24th General Meeting in Buenos Aires, Argentina on September 30. The 14 winners will travel to TWAS's 25th General Meeting in 2014 to deliver lectures on their research and receive their prizes.

TWAS Prizes are awarded in Agricultural Sciences, Biology, Chemistry, Earth Sciences, Engineering Sciences, Mathematics, Medical Sciences, Physics, and Social Sciences. This year, besides Taiwan's three prize winners, there are winners from Brazil (2), China (4), India (3), Jordan (1), and Turkey (1).

Prof. Mou is one of the two winners of the 2013 TWAS Prize in Chemistry. In its official announcement, TWAS stated "Mou is honored for his pioneering contributions in the synthesis of mesoporous silica materials and his leadership in discovering its catalytic and biomedical applications." Prof. Mou is engaged primarily in the development of advanced molecular sieves featuring nanoapertures.

Mou shares this year's TWAS Prize in Chemistry with Ayyappanpillai Ajayaghosh of the National Institute for Interdisciplinary Science and Technology in India.

Prof. Chang is a recipient of the 2013 TWAS Prize in Medical Sciences. TWAS noted "Chang is recognized for her contribution to proving the effect of hepatitis B vaccine in preventing human hepatocellular carcinoma and promoting the concept of cancer-preventive vaccine."

Prof. Chang established the world's first national stool color screening system for biliary atresia, the most common cause of death or liver transplantation due to childhood liver disease. The system relies on an infant stool color card to achieve the early diagnosis and treatment of biliary atresia to improve survival rates.

Prof. Chang shares the TWAS Prize in Medical Sciences with Turgay Dalkara of the Institute of Neurological Sciences and Psychiatry of Hacettepe University in Turkey. She stands among the three female scientists who won TWAS Prizes this year.



## NTU Professor is First in Asia to Win Intel Early Career Award



Prof. Michael Hsin-Mu Tsai of the Department of Computer Science and Information Engineering has received the 2013 Intel Early Career Faculty Award, becoming the first scholar in Asia to claim the prestigious award.

The Intel award is presented to forward-thinking university information technology faculty members who are early in their careers. Recipients are provided full financial support for their research as well as opportunities to network with senior Intel researchers. Fifteen young scholars around the globe have been named awardees this year. Intel calls the recipients "an elite group who represent the future thought leaders in their respective areas of research."

Prof. Tsai leads the Mobile and Vehicular Network Laboratory and is a principal-investigator at the Intel-NTU Connected Context Computing Center, where he oversees the project "Extend the Safety Shield—An Early Warning System for Vehicles." Tsai is developing wireless communications and data analysis technologies that enable vehicles to cooperate and exchange sensing information in preparation for "future ubiquitous mobile and vehicular networks."

## Two Professors Receive Prestigious Engineering Chair Awards



Prof. Bin-Juine Huang (left) accepts his Cho-chang Tsung Chair Award from Chairperson Cheng-Chih Tsung of the Cho-chang Tsung Foundation of Education.

Prof. Bin-Juine Huang of the Department of Mechanical Engineering and Prof. Jyh-Ping Hsu of the Department of Chemical Engineering were named recipients of the 2013 Cho-chang Tsung Chair Award.

The Cho-chang Tsung Foundation of Education established its annual chair award to promote advances in all fields of engineering at the NTU College of Engineering. Each year, the award is presented to no more than two NTU engineering professors who make high level contributions in

their field of research or who achieve exceptional success in the promotion of industry-academia cooperation. The award includes an NTD400,000 prize.

Prof. Bin-Juine Huang is a distinguished professor at NTU who has been on the faculty of the Department of Mechanical Engineering for 36 years. His research interests include energy technology, refrigeration technology, and system and control engineering.

In 1999, Prof. Huang founded NTU's New Energy Center to pursue research into renewable energy and new energy technologies as well as to enhance vertical integration between academia and industry. His collaboration with industry on product development has driven the rapid growth of the high-output LED lighting industry in Taiwan and China. Prof. Huang has authored nearly 200 journal articles and over 100 research reports, and holds more than 60 patents in Taiwan and abroad.

Prof. Jyh-Ping Hsu is an NTU distinguished professor who has been on the faculty of the Department of Chemical Engineering since 1984. He is a respected investigator in colloid and surface science and his research includes studies of the stability of colloid suspensions and analyses of electrodynamic phenomena.



Prof. Jyh-Ping Hsu

Prof. Hsu has published over 380 journal articles, about 350 of which are SCI articles, and presented nearly 100 conference papers. He has also served as editor for two English books and authored one English book and five chapters in English books.

## Physicist Studying Nanoscale Systems Named TWAS Young Affiliate



Prof. Jeng-Da Chai of the Department of Physics was named a TWAS Young Affiliate at The World Academy of Sciences' 24th General Meeting in Buenos Aires, Argentina on September 30. Each year, TWAS's five regional offices each select five scientists from different countries as TWAS Young Affiliates. An affiliate must be under the age of 40, have worked in a developing country for the previous three years and

have published no less than ten international publications.

Prof. Chai works mainly to develop more precise and effective calculation methods using density functional theories, including Kohn-Sham density-functional theory, orbital-free density functional theory, and time-dependent density functional theory, in hopes of predicting more accurately the electronic structures and optical properties of nanoscale systems. The young professor has already made highly significant contributions in atomic, molecular and solid-state physics, quantum chemistry, and materials science. Compared to European and North American countries, only a small number of scientists working in developing

countries are tackling such highly challenging research topics.

Prof. Chai has developed a novel and unique insight through his dedicated effort to develop new density functional theories suitable for the study of nanoscale systems. This insight has allowed him to produce groundbreaking research on the famously thorny problems of energy gaps and asymptotic behavior that arise when using electronic structure theory and density functional theory to understand strongly correlated electron systems. NTU's new TWAS Young Affiliate has published 22 international journal articles that have been cited in other articles over 1,300 times. One of his articles has generated more than 700 citations.

## Taiwan Delegation Attends European Education Conference



A representative of the NTU Office of International Affairs introduces NTU's programs to representatives of NTU partner universities.

A delegation of representatives from NTU joined the representatives of 20 other institutions of higher learning in Taiwan in attending the 25th Annual Conference of the European Association for International Education in Istanbul, Turkey September 10 - 13. While there, the NTU delegation, which included Prof. Hsiao-Wei Yuan, chairperson of the School of Forestry and Resource Conservation as well as former dean for international affairs, and colleagues from the Office of International Affairs, gave a boost to NTU's international visibility by presenting speeches and holding talks with the representatives of universities from around the world.

The EAIE holds its annual conference to promote cooperation between European and international institutions of higher learning. This year's conference attracted a record-high 4,800 participants from over 90 countries.

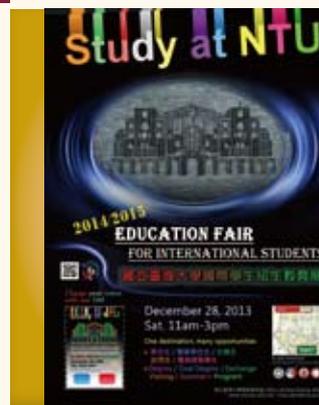
Through the coordination of the Foundation for International Cooperation in Higher Education of Taiwan, the Taiwanese delegation set up a promotional booth at the conference under the slogan "Study in Taiwan," and arranged meetings with other institutions. Already aware of NTU's strengths, representatives of many universities sought out the Taiwan booth to inquire about such topics as NTU's exchange student programs, Summer+ Programs, and Mandarin language courses.

Prof. Yuan presented two speeches on the preferred study-abroad destinations of East-Asian students, inviting the representatives of Peking University, Waseda University, and Seoul National University to attend her speeches. The NTU delegation was also invited to join the University of Oslo, Sapienza University of Rome and Vilnius University in sharing their successful experiences in cooperating with other universities with the conference.

## Education Fair Welcomes International Students

The Office of International Affairs held the 2014/2015 Education Fair for International Students on December 28. The fair, which included accompanying information sessions, provided the perfect opportunity for international students who are interested in applying to NTU to learn firsthand about the university's outstanding traditions, faculty, and academic environment. In response

to the thousands of applications NTU receives from international students each year, which totaled 2,900 in 2013, the OIA expanded the scale of this year's fair, drawing hundreds of potential applicants.



The two information sessions were presented in both English and Mandarin and provided an overview of NTU, application information for international degree students as well as introductions to NTU's exchange and visiting student programs, Summer+ Programs, and general Chinese courses. In addition, representatives of some of the university's most popular departments introduced their departments, while current NTU students shared their personal stories of learning and life on the NTU campus.

At the education fair, all NTU departments, as well as the Language Center's Chinese Language Division and the International Chinese Language Program, set up booths manned by welcoming representatives. With all of NTU's educational opportunities on display, the students, many accompanied by their friends and relatives, ambled around the fair freely, visiting the departments of their liking.

NTU provides opportunities for international degree students to participate in study abroad programs, which include exchange and visiting programs and the Summer+ Programs. Since NTU has already signed academic collaboration agreements with more than 200 world-class universities, an international student at NTU not only enjoys the experience of learning in Taiwan, but can see the world as well.

## Study Abroad Fair Creates a World Fair of Opportunities

The Office of International Affairs pulled off yet another fun and informative NTU Study Abroad Fair this past November. Featuring booths and presentations organized by NTU partner universities, the fair allowed students and their parents to learn firsthand about overseas study opportunities available through the OIA of NTU. Held on November 15, the day of NTU's 85th anniversary ceremony, and with the OIA offering contest and raffle prizes the fair once again drew a record-high attendance.

More than 1,200 parents and students visited this year's fair and attended the OIA's presentations on its outgoing summer programs and outgoing exchange student programs.

With overseas study experience becoming an increasingly important element of a student's education, the OIA has spared no effort in rolling out a diverse offering of study abroad programs. The annual NTU Study Abroad Fair invites students and representatives from NTU partner universities as well as international



Students from Sweden's Lund University, who won second prize in the Best Booth Contest, pose with a visitor.

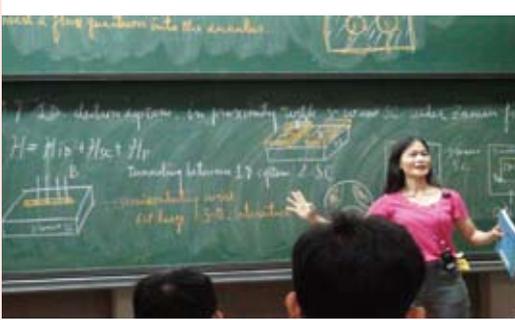
exchange students studying at NTU and local students who have studied abroad to set up booths highlighting the strengths of their universities and the highlights of their national and regional cultures.

Colorful booths introducing programs around the world created an international atmosphere that transformed the fair into a world expo of universities. As an encouragement to the students manning the booths, the OIA organized a Best Booth Contest that asked visitors to vote on their favorite booths. The visitors voted Hertford College, Oxford and the University of California, Berkeley the best summer program booths and the Technion-Israel Institute of Technology, Lund University, and the State University of New York at Albany/The University of Oklahoma their favorite exchange program booths.

The OIA also held a raffle to encourage students visiting the fair to fill out questionnaires about their experience of the fair. OIA Associate Dean Bennett Fu brought the fair to a climactic close when he drew the name of the raffle's NTD10,000 gift certificate winner.

## COS HOSTS FIRST SUMMER SCHOOL IN TOPOLOGICAL INSULATORS AND SPINTRONICS

Spintronics has generated an abundance of exciting research and inspired the introduction of many new manufacturing processes over the last two decades. As a result, this field of physics has created a great offering of job opportunities, especially here in Asia where it has spurred rapid development. The emergence of the latest topological insulators, which show potential for use in quantum computers, is speeding evolution in spintronics as well.



Under the theme "Topological Insulators and Spintronics," the College of Science hosted the First Physics Summer School of the COS Pine League, September 1-9. The brainchild of Dean Ching-Ray Chang of the College of Science, who also serves as NTU's vice president for administrative affairs, the COS Pine League was formed by NTU, Hong Kong University, National University of Singapore, and Peking University and Tsinghua University (China). Students in the program learned basic theoretical physics and the latest developments in topological insulators and spintronics.

## Analysis Reveals Best Post-Surgical Treatment for Pancreatic Cancer Patients



**N**TU medical researchers published findings indicating the optimum treatment for patients following surgery for pancreatic cancer in the October issue of the internationally renowned cancer research journal *The Lancet Oncology*. In the article “Adjuvant treatments for resected pancreatic adenocarcinoma: a systematic review and network meta-analysis,” investigators at the College of Public Health’s Graduate Institute of Epidemiology and Preventive Medicine and NTU Hospital detail their use of advanced statistical methods to compare the relative success of the post-operative treatments provided in all previous clinical studies published on the subject.

The team’s analysis shows that using only chemotherapy, rather than chemotherapy paired with chemoradiation, after surgical resection of the pancreas stands out as the optimum adjuvant treatment for prolonging patient survival. This finding is expected to become the basis for the new standard treatment recommendation around the world. Reflecting the importance of the study, an editorial entitled

“Bayesian analysis unravels pancreas-cancer adjuvant therapy” appeared along with the team’s article in the same issue of *The Lancet Oncology*.

The pancreas is a silent organ, and pancreatic cancer is called the silent killer. Pancreatic cancer reveals virtually no hint of symptoms in its early stages, yet once it begins to metastasize, it spreads quickly. The cancer’s five-year survival rate is just 5%, the lowest survival rate among cancers. Even patients who endure the complete removal of their pancreas face a nearly 80% chance the cancer will return.

The investigators used advanced Bayesian network meta-analysis to parse the results of all published randomized controlled clinical studies of adjuvant treatments for pancreatic cancer to compare the relative success of existing treatments in terms of extending survival as well as their side effects. The findings reveal that using only chemotherapy after surgery is the optimum adjuvant treatment. Compared to foregoing any treatment after surgery, post-surgical chemotherapy reduces mortality by approximately one third.

Importantly, the team’s analysis shows that adjuvant chemoradiation does not improve survival. Measured against only chemotherapy after surgery, which reduces mortality, chemotherapy coupled with chemoradiation actually fails to prolong survival, and moreover induces greater negative side effects due to its toxicity.

Team member Prof. Jaw-Town Lin of the NTU Hospital Department of Internal Medicine points out that the medical communities in Europe and North America have been engaged in endless debate regarding the most appropriate treatment regimen following pancreatic resection due to the practical challenges investigators face when probing previous clinical trials to compare the various treatment methods. Prof. Lin says that the team’s study has brought an end to this major debate over clinical policy by relying on the latest statistical methods to compare all of the treatment options. He adds that he sees it as highly likely that the findings will be recognized as the new basis for the clinical treatment of pancreatic cancer.

## International Journal Articles Shine Light on Innate, Adaptive Immunity



Three research teams at the College of Medicine have published important findings in the field of immunology in two prestigious international journals, the *Journal of Experimental Medicine* and *Proceedings of the National Academy of Sciences of the USA*.

The teams led by Prof. Chien-Kuo Lee and Prof. Shi-Chuen Miaw of the Graduate Institute of Immunology work in the field of innate immunity, while Prof. Li-Chung Hsu's team at the Institute of Molecular Medicine is focused on understanding adaptive immunity.

Because dendritic cells (DCs) are highly important to the regulation of immune responses, when plasmacytoid dendritic cells (pDCs) become excessive in number or produce too much IFN-I, autoimmune diseases such as systemic lupus erythematosus or psoriasis may arise. Therefore, it is important to determine how to regulate the cell numbers and functions of pDCs.

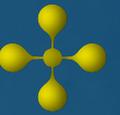
The findings of Prof. Lee's team show potential for the treatment of autoimmune diseases by taking advantage of the regulation of the concentration and activation of IFN-I in the body to both maintain homeostasis in the number of pDCs and reduce abnormal activation in the immune system simultaneously.

It is noteworthy that the success of the four-year study hinged on a single Master's student. Performing virtually all of the work, Ms. Yi-Ling Chen made the investigation's major discovery while pursuing her Master's and stayed on as a research assistant to complete the project.

Prof. Hsu's researchers are interested in the regulation mechanisms behind inflammasome production. The inflammasome is the innate immune system's first line of defense in protecting an organism against invasion by external pathogens. An assembly of multiple proteins, it plays a crucial role in fighting pathogenic bacteria and viruses. During a period of infection, the body relies on the activation of the inflammasome to spur the production and release into the blood of the inflammatory cytokines Interleukin 1  $\beta$  (IL-1  $\beta$ ) and Interleukin 18 (IL-18) to notify and activate immune cells all over the body.

The team led by Prof. Miaw investigates the mechanisms of interleukin-2 (IL-2), a type of cytokine expression that promotes an increase in the production and differentiation of T cells. Ets-1 is a protein of the ETS family of transcription factors that is vital to the expression of IL-2 in T helper cells (Th cells) in laboratory mice. However, the molecular mechanism allowing Ets-1 to regulate the expression of IL-2 remains unknown.

The findings of Prof. Miaw's team demonstrate that Ets-1 exploits the regulation of NFAT proteins to achieve the regulation of IL-2 production. Ets-1 in the nucleus together with NFAT proteins can drive the transcription of IL-2. Ets-1 is also stimulated by calcium ions to move from inside the nucleus to outside, and promote the production of the NRON protein complex and release NFAT proteins in the cytoplasm, permitting NFAT proteins to enter the nucleus.



# NTU's Iso House Preserves History of Taiwan's Favorite Rice

**M**any people are unaware there sits an old Japanese building near the Experimental Farm on the Main Campus that long ago played an invaluable role in the development of the rice that people love to eat in Taiwan daily.

Penglai rice reigns as the rice grown most abundantly in Taiwan and stands among the nation's top varieties of export rice. During Japan's colonization of Taiwan, the quality of Penglai rice became so highly regarded that it was selected as the official rice of the Japanese imperial family.

Yet, penglai rice is not the original rice of Taiwan. In fact, Prof. Iso Eikichi and technician Suenaga Megumu developed Taiwan's most popular rice here at NTU when the Japanese colonial government administered the university as Taihoku Imperial University. The building where the pair of Japanese agronomists spent years crossbreeding hybrids of Japonica rice and Taiwan's original zilai rice to create penglai rice was a workroom of the Advanced Academy of Agriculture and Forestry at that time.

After new buildings sprang up around the NTU campus, the workroom was no longer needed for research and became a simple warehouse. At one point slated for demolition, the old building was saved thanks to the urging of the students and faculty of the Department of Agronomy.

The significance of the neglected building to Taiwan's agricultural development gradually came to light in 2003 after more than 4,000 research

manuscripts left by Prof. Iso were discovered in the warehouse. The Department of Agronomy students and faculty then named the building the Iso House and set about putting it in order and giving it new purpose. The Taipei City Government later designated the building an historical site in 2009, and the Iso House finally assumed its present role as an exhibition space for Taiwan's agricultural research in March 2012.

On arrival at the Iso House, visitors come upon an experimental field planted with such common Taiwanese crops as peanuts, rice, and corn. After removing their shoes to enter the building, visitors then fall under the gaze of two bronze statues of the father of penglai rice, Iso Eikichi, and the mother of penglai rice, Suenaga Megumu, which were cast personally by Shi Wen-Long, the founder of the Chi Mei Corporation.

The Iso House's front room offers fascinating displays of antique agricultural research instruments used by Iso and Suenaga, most of which remain in working order, while the inner room is a recreation of the pair's lab as it might have appeared when Taiwan's favorite rice was still under development.

Prof. Iso came to Taiwan to improve rice crops in 1912 and, even after the Second Sino-Japanese War, insisted on remaining here at NTU as a professor until his retirement in 1957. Iso's contributions to the development of rice hybrids and agronomic talent in Taiwan are unmatched.



## NTU SHINES AGAIN AS PREMIER IC CONFERENCE ACCEPTS FOUR PAPERS



Fifteen papers authored by research teams from Taiwan's academic and industrial communities have been accepted for presentation at the 2014 IEEE International Solid-State Circuits Conference (ISSCC), which will take place in San Francisco February 9-13, 2014. This heralds the coming of yet another stellar performance by Taiwan at the annual IEEE conference. The premier forum for networking between scholars in the field of integrated circuit design, the ISSCC is often called the Olympics of IC design.

What's more, NTU researchers will present four of the Taiwanese papers at the conference.

The ISSCC has announced its acceptance of a total of 206 papers for the 2014 conference. Taiwan's 15 papers place the nation fifth among the countries that will be presenting papers. The Taiwanese papers introduce such technologies as a next generation IC for telecommunications applications and a green energy chip for biomedical applications.

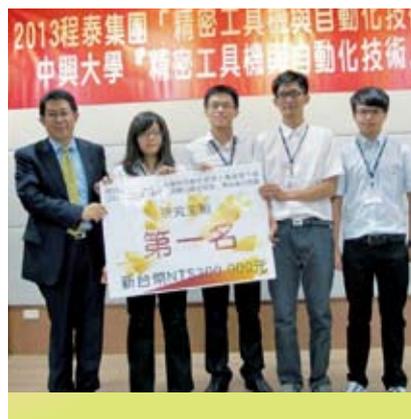
NTU's four papers were produced by research teams at the Department of Electrical Engineering. The paper to be presented by Prof. Shey-Shi Lu and his partners details their successful development of an implantable wireless complementary metal-oxide semiconductor (CMOS) biomedical system on a chip (SoC). Prof. Lu's paper, as well as those of the NTU electrical engineers led by Prof. Jri Lee, Prof. Hsin-Shu Chen and Prof. Tai-Cheng Lee, all have been nominated for Best Paper Awards.

A team from Taiwan Semiconductor Manufacturing Company will present a paper on a 16 nanometer fin field-effect transistor, while a MediaTek Inc. team will present a paper on a 2G/3G-TD-SCDMA wireless inductorless receiver.

## STUDENTS' FIVE-AXIS MACHINE TOOL EARNS CHAMPIONSHIP

NTU graduate students led by Prof. Ping-Lang Yen of the Department of Bio-Industrial Mechatronics Engineering were named champions in the graduate student category at the finals of the Chengtai Group's Precision Machine Tool and Automation Technology Competition in September. One of the leading competitions in the field of machine tools, the competition attracted 57 teams from 16 universities. From the preliminaries to the finals, Prof. Yen's team of graduate students led the way with their competition entry "The Design and Construction of a Fully Free Mixed Five-axis Machine Tool."

The team's technology serves to resolve issues of inconsistent agility,



enabling its five-axis machine tool to achieve a wide angle of rotation in each of its work routines. The graduate students resorted to designing their own ball joints due to the poor quality of the steel and limited rotation angles of the ball joints they found available on the market. They also designed wedges

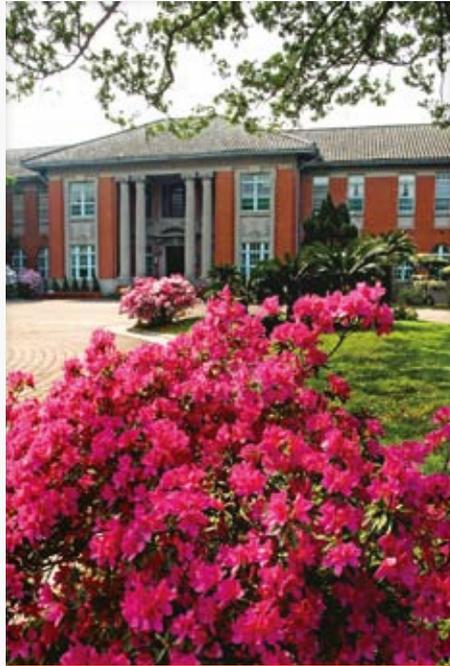
to adjust the machine tool's angle positions, allowing it to reach a wider range of working angles.

From manufacturing the tool's machinery to laying out its circuitry and programming its movement, the team designed and developed the five-axis machine tool completely on its own. In the process, they not only effectively controlled costs, but reduced the machine's size while also giving it a greater angle of rotation.

The team's entry drew a great deal of attention and many inquiries during the competition. After inspecting the team's tool, the Chengtai Group's executives and engineers were highly impressed by the team's theoretical knowledge and hands-on skills.

# International Photovoltaic Conference and Exhibition Held the Same Week

Prof. Chung-Wen Lan of the Department of Chemical Engineering enjoyed the honor of serving as the general chair of the organizing committee for the 23rd International Photovoltaic Science and Engineering Conference (PVSEC-23), which was held at the Taipei International Conventional Center from October 28 to November 1. This is the first time that Taiwan has played host to this major event, which is regarded as one of the leading international conferences in the global photovoltaic industry.



Prof. Martin Green of the University of New South Wales, Australia. Recognized as the father of solar energy for his early development of silicon solar cells in the 1970s and 1980s, Prof. Martin Green spoke on "Silicon Solar Cells: What Does the



Prof. Martin Green of the University of New South Wales, Australia, recognized as the father of solar energy, presents a speech during PVSEC-23.

It was a major week in the world of photovoltaics for Taiwan as this year's Taiwan International Photovoltaic Exhibition (PV Taiwan 2013) was organized alongside PVSEC-23 at the nearby Taipei World Trade Center from October 30 to November 1. This event was touted as "Asia's premier international photovoltaic exhibition."

First held in 1990, PVSEC shifts location to a different country each year. In 2009, Taiwan mustered the resources of its photovoltaic industry and the support of its academic community to claim the hosting rights

for this year's conference. Accomplishing the hosting of this important international event marks a major milestone for Taiwan's photovoltaic enterprises and academic researchers.

A resounding success, PVSEC-23 drew nearly 600 participants from 21 countries, over 60 percent of whom are international experts and scholars from both academia and industry who undertake research concerning photovoltaic technology. The conference also featured more than 500 paper presentations. The numbers of both participants and of paper presentations exceeded those at last year's PVSEC.

The conference organizers invited around 40 renowned international experts to speak on the latest developments in photovoltaic technology and the solar energy industry. Among the speakers was the eminent

Future Hold?"

The conference was organized around seven areas of specialization: Advanced Technologies for Crystalline Silicon Materials and Solar Cells; Amorphous, Microcrystalline and Other Silicon based Thin Film Solar Cells; CIS, CdTe and Other (II-VI) Thin Film Solar Cells; Concentrator Photovoltaic, III-V and Space Solar Cells; Advanced Nanostructured Solar Cells: New Concepts, Materials and Structures (dye-sensitized solar cells, organic solar cells and the other); PV Modules and Systems Including BOS Components, Testing and Reliability; and PV Systems and Deployment.

PV Taiwan 2013 featured exhibits by 156 major photovoltaic enterprises, including 127 from Taiwan and 29 from abroad, and attracted more than 10,000 visitors. Among the products promoted at the exhibition were PV materials, silicon wafers and ingots, solar cells, PV modules, power generator systems, processing equipment, evaluation, testing and analysis



Ⓐ Summer Plus Four students take part in a lab class.

The Center for Biotechnology was originally established for instructional purposes, and it works to integrate the university's educational and research resources in biotechnology in hopes of cultivating outstanding professionals in this expanding field of research. After Prof. Shih-Torng Ding of the Department of Animal Science and Technology became center director in 2008, he sought to create opportunities for students at the center to broaden their global outlook as well as becoming biotechnology professionals in step with industry trends.

Therefore, on the occasion of the 10th Association of East Asian Research Universities (AEARU) International Molecular Biology and Biotechnology Workshop in November 2009, Dr. Ding—with the support of the joint



Ⓐ Summer Plus Four students assemble for a photo following a friendly basketball game.

appointment professors at the center, Dr. Han-Yi Chou, Dr. Tang-Long Shen, Dr. Tsai-Kun Li, and Dr. Hsinyu Lee—cooperated with Tsukuba University's Dr. Kyosuke

## SUMMER BIOTECHNOLOGY PROGRAM BROADENS STUDENTS' GLOBAL OUTLOOK



Ⓐ The students, who are posing at the mouth of an old mine in New Taipei's Jioufen, enjoyed the nostalgia of Taiwan's idyllic past.

Nakata (who is now the university president) and Dr. Kenji Irie to establish the Short-term Student Exchange Program between NTU and Tsukuba University, which officially commenced in 2010. In 2012, at the invitation of the Office of International Affairs, the NTU-Tsukuba U program was expanded into the Summer Program +4—Biotechnology, and the center really began to boost its enrollment of foreign students from around the world.

Summer Plus Four is a two-week biotechnology program for international students. English is the language of instruction. This year, the program ran July 13-26.

This year, the first week of the program was the Animal Biotechnology Laboratory Practice Course, which exposed the students to the latest core techniques and methods of research in animal biotechnology. Besides the classes and laboratory experiments led by NTU professors, the program invites experienced professionals from industry to join the classes, so the students are exposed to different perspectives on a variety of topics from academic theory to practical applications.

The second week was the Laboratory Experience Course, a practical internship which allows the students to choose one of several laboratories run by professors of the College of BioResources and Agriculture, College of Life Science, and College of Medicine to enter the lab according to their area of interest. The lab internship offers students many opportunities to engage in in-depth discussions with outstanding professors and students of NTU.

Moreover, the program allows students to develop their international perspectives and competence by interacting with students from different cultures. Weekend excursions around Taipei give the students deeper insight into Taiwan, as well.

More than 50 international students have enrolled in Summer Plus Four during the past three years. The participating students have come from such prestigious institutions as the Tsukuba University and Osaka Medical College in Japan, UCLA and NYU in the United States, England's Oxford University, Scotland's University of Edinburgh, as well as Sun Yat-sen University in China.

# NTU at a Glance

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Translator Darryl Sterk speaks at the Taipei Cultural Center in New York.

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Darryl Sterk discusses the experience of translation with panelists at the Harbourfront International Festival of Authors.



## *The Man with the Compound Eyes: The World Tour*



*Below are excerpts from an article written by Darryl Sterk, translator of Taiwanese author Wu Ming-yi's *The Man with the Compound Eyes*.*



Wu Ming-yi's *The Man with the Compound Eyes* is the first novel by a Taiwanese writer to be sold to a large literary publisher in the English-speaking world. Gray Tan, Wu Ming-yi's agent, sold the English translation rights for the novel to Harvill Secker, a division of Random House. The translation was published in August 2013 in England, and will be published in America by Vintage Pantheon in April 2014.

The first time for anything is always special. But the Ministry of Culture really went all out to make this particular first time extra special. Not only did it send the author Wu Ming-yi on a world tour to promote the novel, it also sent the translator. That would be me.

The first stop on the World Tour was Tainan, Taiwan, where I gave a talk on the cave imagery in *The Man with the Compound Eyes*. The Tunnel Boring Machine in the tunnel is a metaphor for rape.

The second stop on the World Tour was New York. We gave a talk for the Department of Culture in New York. I talked about the process of translation, comparing all my different versions of the first sentence. The third stop on the World Tour was Toronto. We visited the University of Toronto.

It was an honor to share my translation experience and tell people about the Graduate Program in Translation and Interpretation.



# "Music in the Moonlight" Celebrates NTU's 85th Birthday

The NTU Student Association celebrated the university's 85th birthday by organizing a spectacular evening of lights and sounds on the plaza of the NTU Library on November 17. Called "Music in the Moonlight," the event featured advanced 3D animation and video projections of captivating 3D architectural sculptures on the library's façade. Highlighting scenes from the university's history, the show marked the first time the NTU Library has been used as a projection screen.

Backed by the towering projections, student music clubs performed a concert of jazz, pop, classical, and more, creating a spectacular night of reminiscence and entertainment that brought the campus together to wish NTU a joyous happy birthday.

The Student Association also offered a variety of Music in the Moonlight souvenirs that showed off scenes and objects from around the NTU campus. A jacket was decorated with a sparrow, a night heron, and a squirrel, while a cloth backpack was embossed with the three familiar NTU images of a sparrow, the Fu Bell, and azalea blossoms.



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