

NTU



NEWSLETTER

August 2008 / No. 7

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NTU Ready for International Students

**Newly Elected Academia Sinica
Members**

President Lee Visits California

New Physics Lab

**Honors for Biology, Engineering,
Geology, Physics Scientists**

Special Report
Medical Education & Health Care Reform



NTU
NEWSLETTER

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On Taiwan's Medical Education and Health Care Reform



Following are excerpts from a paper presented by Dr. Andrew T. Huang, Professor of Medicine, Duke University, President of Koo Foundation Sun Yat-Sen Cancer Center and an alumnus of the NTU College of Medicine.

Background

Our 13-year experience with national health insurance and a global budget, single-payer system has given us the opportunity for insight and wisdom. Now, the pressure is on us to find the courage and resolve to revise the health care system into one that will incorporate and deal with all the problems that have arisen, particularly with the education of health care professionals and of the public.

Where do we begin?

Whether or not the NHI is administered appropriately has the sole and overwhelming impact on what kind of health care Taiwan's citizens receive. As the burden of disease shifts over time, so should the priorities of NHI be revised. Such dynamic interplay is an essential process for facilitating constant systems renewal and readjusting the focus of national health coverage, for determining the nature and quantity

of the health care workforce and the direction of education for health professionals and the public.

Burden of disease

It is highly probable that the mortality and morbidity of many diseases can be reduced by measures of prevention, early detection and effective treatment. The future investment of national health expenditure should be directed wisely in those measures that will reduce the burden of disease, restore health and improve the functionality of its citizens. The purpose for assessing the burden of disease is to discover the impact of major illnesses on the health and productivity of the citizens.

National Health Expenditure

In Taiwan, with a growing economy and the emerging dominance of chronic, life-style-related diseases, our key efforts and expenditures should be directed toward identifying the most cost-effective

and cost-efficient ways of reducing the burden from diseases such as cancer, circulatory disease, metabolic disease, and the mortality and morbidity from trauma. Investment in reducing the burden from these diseases must be long-term and focused on prevention and behavior modification.

The National Health Expenditure (NHE) must simultaneously determine 1) the burden of disease and what the country needs to do and spend to reduce its impact and 2) what will satisfy the expectations of the citizens. The former requires an epidemiologic database and will determine how the public is informed. The latter, on the other hand, depends on opening a dialog between the public and the experts.

National Health Insurance

National Health Insurance (NHI) demands premium payments mandated by law from all citizens and their employers. It is administered through the government and functions as both the insurer and the law enforcer with both governing and monitoring authority. This duality necessarily involves some conflict of interest.

Insurance premium have not been properly adjusted for the last 12 years. In turn, NHI uses a global budget mechanism to exercise tight control over the growth rate of expenditures for health care. The NHI has successfully ensured that access is no longer a problem, but its strict control of expenditures under a global budget will continuously be grounds for conflict between BNHI and health care providers.

An orderly health care delivery system under NHI is under-emphasized by the government and the NHI. Referral systems were removed from its original design due to pressure from tertiary care hospitals at the very outset. Even though surcharges were emplaced later for direct self-referrals to regional and tertiary centers, citizens have had difficulty changing their behavior and continue to bypass primary care facilities and swarm to tertiary centers for even minor illnesses. Enormous waste of health care resources is a common feature of present day health care in Taiwan. NHI has indeed solved the problem of access to health care,

but what comes with this achievement is waste due to overuse and abuse. Global budget restriction cannot limit these habits due to the lack of discipline of both consumers and providers. Under a global budget, the expenditures instead shift from covering major to minor illnesses. Further, the areas of healthcare that are less essential, such as cosmetic surgery, are now encouraged by health care providers to compensate for the lower revenues. Outside the NHI, the out-of-pocket expenditure now has exceeded 37% of the total expenditure for health care.

Since NHI is the sole source of health care financing and is not set up to encourage improvement of performance, quality of care remains under-emphasized throughout Taiwan. Citizens feel that having easy access is equal to having good care and they do not seem to care as much about quality of care as long as "someone else" is paying for it. No mechanism exists to correct this declining quality in health care. Further, around the year 2000, the NHI significantly reduced its support for the training of the health care workforce. In the absence of funds coming from the Ministry of Education (MOE) and Department of Health (DOH), the financial burden of residency training rests unfairly on health care organizations.

The Undergraduate and Medical and Postgraduate Education

Currently, the governance of the entire medical education in Taiwan is divided into four to five major segments, with the MOE, Examination Yuan, DOH and Taiwan Joint Council on Accreditation of Hospitals each playing a role. The concept of continuity and coherence throughout national medical education to produce properly trained physicians has long been ignored, as has society's mandate to ensure that this kind of educational continuum be observed. There is a dire need to integrate all five segments together to eliminate the bureaucratic inefficiency of these different branches of the government.

There is a strong sense across society that physicians lack compassion and ethical discipline. This is thought to be related to the fact that medical students are



admitted to the medical schools directly after high school education via a written entrance examination rather than by careful selection process for candidates who are likely to develop into good health care professional. Shortened physician visit times in ambulatory care units (an average of 2-3 minutes per patient), large numbers of admitted patients per physician and inattention of physicians toward their patients all contribute to the poor physician-patient relationship. The discounted NHI reimbursements to health care providers with no regard for the actual cost of care and the inflexible global budget are the main factors leading to the increase in the volume of service that has arisen to compensate for the low revenues. The under-emphasis of moral discipline during medical education is also blamed for the physicians' disregard for compassion and unwillingness to give time to communicate with their patients. A revamping of the medical curriculum is essential, especially in the first two years of medical school, with emphasis on clinical training in the last two years. The general goal would be to raise consciousness and develop skills in the practice of altruism and good communication.

Due to physicians seeing large number of patients, there is a near total absence of patient education during their shortened contact time. In the absence of health education, communication between physicians and patients breaks down and the beneficial result of care suffers. In turn, the number of visits to the

same or different physicians increases, resources are thus wasted and the patient's emotional stress level increases (Taiwan's annual visits per patient are 15 while the average for EU countries are 3-5). Physicians who spend time with and care about their patients cannot make ends meet and retreat from practice while those who are willing to see large number of patients with disregard for quality of care prevail. A fundamental reform of NHI in order to change the culture of medical practice is necessary.

Conclusion

To find solutions for current health care problems, the fundamental approaches should be: 1) to change the health care financing and payment system, 2) to build a sustainable and renewable system of care that mandates the creation of well-educated and trained medical professionals with strong ethical discipline and commitment to the health of the nation and 3) to place quality of care into the basic design of NHI through reform. An environment effective and efficient in the delivery of health care that is at the same time value- and quality-based should be created. The goal of universal access demanded by the NHI is only the first step toward effective national health insurance. Health care without quality and value is wasteful and consumes resources inefficiently. Education and training of an excellent health care workforce is the foundation on which good health care depends.

International Students Share Their Experiences of Taiwan at Exhibition

On May 5, NTU's Student Housing Service Division (SHSD) kicked off the "Discover Taiwan! An Exhibition of NTU International Students' Fine Art" with a festive opening ceremony. SHSD sought to provide NTU's international students with an opportunity to express their curiosity and imagination about Taiwan while, at the same time, letting local students, faculty and staff view Taiwan from new perspectives to gain a deeper understanding of their home culture. The three-week exhibition featured over 100 works by 17 international students from nine countries.

On opening ceremony day, attendees were treated to a variety of local Taiwanese delicacies and entertained by the international students performances. German and American students played rock music with a local underground band. A group of Japanese students addressed the audience in fluent Taiwanese, creating warm feelings among the local audience. Later, three handsome Dutch students donned traditional Dutch attire to join the opening ceremony MC in serenading the audience with traditional Dutch love songs. This audience responded with laughter and applause. Vice President for Administrative Affairs, Tzong-ho Bau, and Dean of Student Affairs, Yen Feng, later

presented awards to international students who took part in the exhibition.

Besides the exciting performances, the exhibited works were not to be missed. Alyson, a student from the United States, displayed photographs she had taken of local graveyards. Though Taiwanese generally regard graveyards as scary, ill-omened places, her pictures revealed their beauty. She remarked that since Taiwanese culture emphasizes family, Taiwanese people erect "beautiful houses" for their departed relatives to rest in peace. She felt moved by this custom. Other themes explored by the exhibitors included the renaming process of Chiang Kai-shek Memorial Hall as Taiwan Democracy Memorial Hall, Taiwan's bustling night markets, and the elaborate architecture and colorful customs of Taiwan's temples. Students from around the globe presented local phenomena in new perspectives and gave them surprising personal narratives.

During this three-week activity, local NTU students taught their international classmates several typical local customs, including stuffing "shui jiaos", pulling "dragon beard" taffy, fashioning pinched-dough figures and practicing martial arts.

▼ Dean of Student Affairs Yen Feng(center) and Vice President for Administrative Affairs Tzong-ho Bau (right) took the stage to present awards to the international students taking part in the "Discover Taiwan!" exhibition.



Office of International Affairs Delegation Attends 4th QS-APPLE in Seoul



The Fourth QS Asia Pacific Professional Leaders in Education Conference and Exhibition (called QS-APPLE) took place in Seoul, South Korea, from July 9 to 11.



few more notches to 102nd place in the latest ranking in 2007.

While taking part in the 4th QS-APPLE at Seoul's Yonsei University, Dean Shen and Deputy Dean Leung engaged in active discussion with delegates from other universities regarding ways to create the most effective higher-education environment for students, society and universities under the demands of internationalization.

QS-APPLE will begin taking place annually in November, instead of July as it has for the last four years, with the 5th QS-APPLE, which will be hosted at the University of Malaya and Universiti Kebangsaan Malaysia in Kuala Lumpur, Malaysia, from November 25 to 27 in 2009. The 6th QS-APPLE will then move to Bangkok, Thailand in 2010.

For more information regarding this fascinating, thought-provoking conference, please visit its official web site at <http://www.qsapple.org/index.php>.

Dean Tung Shen and Deputy Dean Yanwing Leung of NTU's Office of International Affairs attended the Fourth QS Asia Pacific Professional Leaders in Education Conference and Exhibition (called QS-APPLE) in Seoul, South Korea, from July 9 to 11 in order to gain a deeper understanding of the mechanisms of The Times Higher-QS World University Rankings. The theme of this year's QS-APPLE addressed how countries in the Asia Pacific region can take advantage of international cooperation programs to create world-class universities. While this is reflective of the influences of globalization on higher education in the Asia Pacific region, it also happens to be to same goal as that of NTU's Aim for the Top University Program.

First held in 2005, QS-APPLE is organized by QS Education Trust, a British non-profit trust company that endeavors to provide scholarships to talented young people to help them benefit from international higher education. Since its establishment in 2005, QS Education Trust has performed the survey work for The Times Higher-QS World University Rankings. The survey consists of



six weighted indicators: peer review (40%), citations per faculty/research quality (20%), student faculty ratio/teaching quality (20%), recruiter review/graduate employability (10%), number of international faculty (5%) and number of international students/international outlook (5%).

NTU's placement in The Times Higher-QS World University Rankings has risen year by year. The university ranked 114th in 2005 and 108th in 2006, and climbed a

OIA Trains Over 300 Student Volunteers to Assist Incoming International Students



Volunteers take part in a role play training session on June 26.

NTU is making preparations to receive about 300 international students-- degree-seeking as well as exchange students-- from over forty countries who will start classes at NTU this September. These preparations include the Office of International Affairs' (OIA) annual Student Volunteers Training Sessions held on June 9, 11 and 26.

Aiming to improve the internationalization of the campus, NTU is striving to expand its academic collaboration and exchange programs with overseas institutions as well as to attract more international degree-seeking students. Every March or April, the OIA recruits high-spirited local students who are eager to communicate and share their campus-life with incoming international students to be NTU Student Volunteers. This year the recruitment drive ended in late April with over 300 students signing up.

The Student Volunteers Training Sessions prepare the volunteers to perform service tasks, such as airport pick-up, dormitory check-in, class registration and other administrative matters (including Alien Residence Cards application), as well as to share information about campus life. This year, the training sessions took place in two stages. In the first stage, OIA hosted two information

sessions covering 1) the two categories of international students and 2) the forms of assistance the volunteers are expected to offer, and a general Q&A session. In the second stage, the OIA set up role plays in which the volunteers practiced tackling and resolving typical problems that incoming international students might encounter.

"We have many passionate and enthusiastic local students. They offer international students the local student's point of view on how to adapt smoothly to the new environment, and they do everything out of the goodness of their heart," declared Ms. Jung-Chen Chen, an international student advisor at OIA who advises both the NTU Student Volunteers and NTU Foreign Students' Association.

Enthusiastic and committed to helping incoming international students to get settled as well as to acquainting them with student life in Taiwan, NTU Student Volunteers help to make this a more welcoming campus to international students. For further information regarding international students at NTU, please visit the International Students section of the OIA's English web page at <http://www.ciae.ntu.edu.tw/english.asp#>.

President Lee, OIA Deputy Dean Hu Visit Three Universities in Southern California in May



President Si-chen Lee, accompanied by his wife Mei-ling Cheng and NTU's Office of International Affairs Deputy Dean Jer-ming Hu, meet with Executive Vice Chancellor Dr. Gene Lucas while visiting UCLA.

NTU President Si-chen Lee, accompanied by his wife Mei-ling Cheng and NTU's Office of International Affairs Deputy Dean Jer-ming Hu, paid a tightly-scheduled visit to three prestigious universities in Southern California, from May 14-17. A main purpose of the trip was to sign an academic exchange agreement between NTU and the University of Southern California, where President Lee accepted an invitation to attend that university's 125th graduation ceremony. President Lee also visited the University of California campuses at Santa Barbara and Los Angeles to hold high-level discussions on international exchanges and the direction of future cooperation plans between NTU and these universities.

The NTU-USC academic exchange agreement will lead to further cooperation across disciplines. In fact, NTU's College of Social Sciences signed a college-to-college cooperation agreement with its counterpart at USC on May 26. While at USC, President Lee also visited the Viterbi School of Engineering, a century-old institution that has developed some of the world's greatest technological innovations. President Lee was delighted to attend USC's gigantic graduation ceremony, with an audience of over

10,000 looking on as the USC graduates received their diplomas and meritorious members of society were presented with honorary doctorates.

At UCSB, President Lee's visited the new Institute of Energy Efficiency of the UCSB College of Engineering. This college has made important contributions to materials science and physics, and NTU alumnus, Dr. Tim Cheng, chairs the Department of Electrical and Computer Engineering. The Institute of Energy Efficiency seeks to reduce demands for power by designing advanced energy efficient technologies. NTU's own New Energy Center is working toward similar goals, thus it would be fruitful for these two institutes to share information and cooperate in research in the coming years.

At UCLA, President Lee met with Executive Vice Chancellor Dr. Gene Lucas to discuss future opportunities for cooperation. NTU's teaching faculty includes over 30 UCLA graduates, dispersed among each of its colleges.

During his trip, President Lee also attended a dinner banquet organized by NTU alumni, the Chinese American Professional Society and the NTU Alumni Association of Southern California. Around 90 alumni, scholars and guests joined the occasion and President Lee spoke on NTU's rapid development in recent years and its goal of becoming the top university in the Chinese language world as well as one of the world's top 100 elite universities.

Nine from NTU Elected Academicians of Academia Sinica for 2008

Academia Sinica, Taiwan's leading academic institute, announced its 27th annual roster of academicians on July 4, and 9 of the 19 newly-elected academicians for 2008 are members of the NTU family. Eight of these nine academicians are NTU alumni, while Dr. Paul T. P. Ho, who earned his Ph.D. at the Massachusetts Institute of Technology, is now a joint professor at NTU. Alumni Dr. Jen-kun Lin and Dr. Chin-shing Huang are also NTU faculty members. NTU hopes these new academicians will provide guidance to help the university in its pursuit of excellence.

Mathematics and Physical Sciences Division

Dr. Thomas S. Huang is the William L. Everitt Distinguished Professor of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign. He graduated from NTU's Department of Electrical Engineering in 1956.

Dr. Ralph T. Yang is the Dwight F. Benton Chair Professor of Chemical Engineering at the University of Michigan. He graduated from NTU's Department of Chemical Engineering in 1964.

Dr. Yuan-vern Lee is Dean of the College of Science at National Chiao Tung University where he is also a chair professor in the Department of Applied Chemistry. He graduated from NTU's Department of Chemistry in 1973.

Dr. Paul T. P. Ho is a Distinguished Research Fellow at Academia Sinica where he is also Director of the Academia Sinica Institute of Astronomy and Astrophysics. He is also a joint professor in NTU's Department of Physics and Institute of Astronomy.



Life Sciences Division

Dr. Jen-kun Lin is Professor Emeritus in NTU's College of Medicine. After graduating from NTU's Department of Pharmacy in 1958, he went on to receive his master's degree from NTU's Institute of Biochemistry in 1961.

Dr. Cheng-ming Chuong is a professor of pathology at the University of Southern California. He graduated from NTU's Department of Medicine in 1978.

Dr. Jen Sheen is a professor of genetics at Harvard Medical School. She graduated from NTU's Department of Plant Biology in 1980.

Humanities and Social Sciences Division

Dr. Chin-shing Huang is a Senior Research Fellow in the Institute of History and Philology at Academia Sinica as well as a part-time professor in NTU's Department of History. He graduated from NTU's Department of History in 1973 and earned his master's degree from the Institute of History in 1975.

Dr. Jin-chuan Duan is Director of the Risk Management Institute and a visiting professor in the Department of Finance and Accounting at the National University of Singapore. He graduated from NTU's Department of Zoology in 1978.

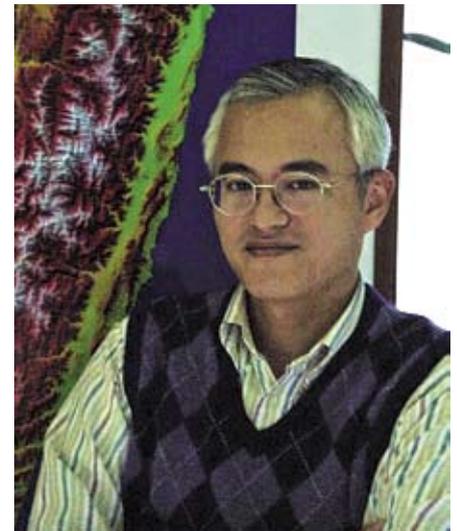
NTU Geoscientist Yue-gau Chen Named Geological Society of America Fellow

The Geological Society of America elected Prof. Yue-gau Chen of NTU's Department of Geosciences as one of its fellows in May. Of the 69 fellows elected by GSA this year, Prof. Chen is the only geologist from Asia.

Prof. Chen's researches coastal environmental change and sea-level change; carbon, nitrogen and sulfur isotopic analysis in environmental studies; age determination of quaternary strata; and geomorphology and neotectonics. Recently, Prof. Chen participated in the Outland Seismic Watch Network Project, which, in addition to observing seismic activity in the South China

Sea in real-time, allows researchers to participate in large-scale tectonic and seismic studies. It laid the Vietnam Broadband Seismic Network, which is a trailblazer in national earthquake studies. The project aims to establish a Taiwan-led cross-national seismic observation network in the South China Sea to provide first-hand data for domestic scientists studying the geomorphology and natural resources of the South China Sea region, while offering monitor data on earthquake and tsunami activities to the neighboring countries.

Prof. John Suppe, a distinguished chair research professor of geosciences at NTU and an



Professor Yue-gau Chen of the Department of Geosciences

academician of the American National Academy of Science, wrote in his comment, "Yue-gau Chen is the leading researcher and promoter of active tectonics in Taiwan, post 1999 Chi-chi earthquake."

Professor Kuang-chao Fan Named Fellow of Society of Manufacturing Engineers

The Society of Manufacturing Engineers has named Prof. Kuang-chao Fan of the NTU Department of Mechanical Engineering as a fellow this year. Prof. Fan won this recognition for his remarkable research in precision metrology and his outstanding contributions to the local manufacturing industry. In an highly rigorous process, the SME singled out just eight new fellows from over 500,000 members worldwide this year.

Prof. Fan is currently the Zhong Tsou-zhang Chair Professor of the

College of Engineering as well as an NTU Distinguished Professor. He has been involved in promoting the Automatic Optical Inspection Equipment Association in Taiwan. His awards include an Outstanding Research Award from the National Science Council (2003-2005) and the Ministry of Economic Affairs' first University Industrial Contribution Award (2007). Prof. Fan has served as chairman of the SME Taiwan Chapter (1999-2001), director of NTU's Tjing Ling Industrial Research Institute (1992-1998), associate dean of the College of Engineering (1999-2000)



Professor Kuang-chao Fan of the Department of Mechanical Engineering

and director of the NTU Incubator (2000-2005).

Prof. Homer H. Chen Wins 2008 IEEE Circuits and Systems Society's CSYT Best Paper Award



Prof. Chen's award-winning paper, "Integration of Digital Stabilizer with Video Codec for Digital Video Cameras," was published in IEEE's *Transactions on Circuits and Systems for Video Technology*, in July 2007.

Prof. Homer H. Chen and his research team at the NTU College of Electrical Engineering and Computer Science were named winners of the IEEE Circuits and Systems Society's 2008 Circuits and Systems for Video Technology Transactions Best Paper Award. This distinguished honor is especially noteworthy as this was the first time Taiwanese scholars have received this award.

Prof. Chen's award-winning paper, "Integration of Digital Stabilizer with Video Codec for Digital Video Cameras," was published in IEEE's *Transactions on Circuits and Systems for Video Technology*, in July 2007. The paper presents his team's research findings on a novel approach to digital image stabilizers and has received much attention and acclaim. Prof. Chen was commended publicly for his research prowess during IEEE's 2008 International Conference on Circuits and Systems for Communications.

According to Prof. Chen, while digital video cameras are increasingly popular, not everyone is a trained professional photographer. Such factors as inadvertent shaking of the hand or platform movement can cause jerky image motion that is distressing to the human eye. Although traditional mechanical and optical stabilizing systems have long been in use, the components for such systems are expensive.



Seeking a more economical solution, Prof. Chen's research team tested novel schemes to integrate a digital video camera's digital stabilizer with its video codec. The digital stabilizer is technology that uses image processing to achieve stability by removing unintentional image displacements, while the video codec is technology that conserves image storage space. Both are indispensable components for a digital video camera. In traditional designs, however, these two functions operate separately. Prof. Chen's research team discovered that, although the functions of these two devices are different, they have many similar algorithms and can share a considerable amount of image movement data.

Based on this discovery, Prof. Chen and his research team tested several ways to integrate them such that the number of algorithms for digital stabilizers and video codecs were reduced without affecting the anti-shake effect and the quality of image compression. Their innovations are suitable for system-on-chips production, and thus are a major contribution to the digital camcorder and camera industry. Indeed, this is the first design in the world incorporating such breakthrough integrating functions.

Prof. Chen's personal website : <http://www.ee.ntu.edu.tw/profile?id=60>.

Prof. Chu-yung Lin, First Taiwan Scholar to be Named Corresponding Member of American Society of Plant Biologists

The American Society of Plant Biologists presented Professor Emeritus Chu-yung Lin of the College of Life Sciences's Institute of Plant Biology with its Life Corresponding Membership Award on May 17. This annual award recognizes outstanding plant biologists who live outside the United States for their academic achievements. As a rule, the recipients of this award do not make up more than two percent of the total dues-paying members of the society. Prof. Lin, who is also an Academia Sinica research fellow, is the first plant biologist from Taiwan to enjoy this honor.



Prof. Lin is well known for his contributions to the field of plant biology.

Prof. Lin is well known for his contributions to plant biology. He was a trailblazer in research on ribosome and protein synthesis mechanisms. In addition, he was the first researcher to isolate nucleolus and nucleus from plant cells, and

a pioneer in conducting research on Auxin and RNA polymerase's active functions and gene display. He discovered that under adverse high-temperature conditions plants could be induced to release massive amounts of small molecular weight 15-18 KDa heat shock proteins, which play a pivotal role in the thermo-tolerance of plants.

Though Prof. Lin, who is nearly an octogenarian, retired from the Department of Plant Biology ten years ago, he still teaches part-time at the Institute of Plant Biology.

College of Sciences' Dr. Kai-feng Chen Wins Prestigious IUPAP Young Scientist Award in Particle Physics

The International Union of Pure and Applied Physics awarded its inaugural Young Scientist Award to NTU's Dr. Kai-feng Chen in May in recognition of his significant, innovative contributions to the analysis of B meson decays using the Belle experiment at the KEK laboratory in Tsukuba, Japan. He made key measurements of time-dependent charge parity violation in b to s transitions and polarization measurements in B-decays. His findings resulted in highly-cited publications of the Belle experiment. Dr. Chen studied at National Taiwan



The College of Sciences' Dr. Kai-feng Chen

University and completed his Ph.D. in 2005. He conducted most of his scientific research at KEK using the Belle experiment. Recently, Dr. Chen started a new research project using the CMS experiment at the Large Hadron Collider at the CERN Laboratory in Geneva.

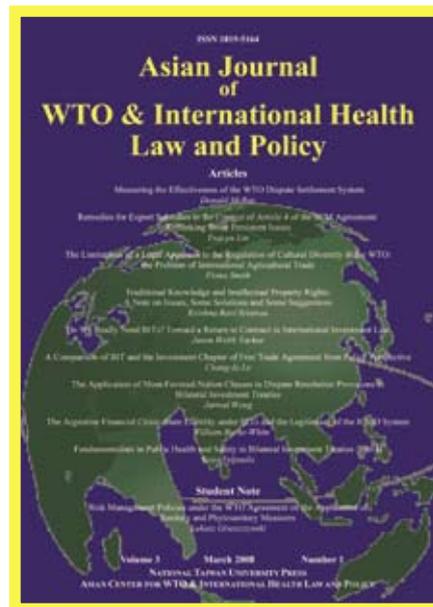
IUPAP set up the Young Scientist Prize in Particle Physics to recognize scientific achievements of young experimental and theoretical particle physicists. Two prizes are awarded every two years, preferably one to a theoretical particle physicist and the other to an experimental particle physicist. 2008 is the inaugural year for the award.

This international recognition of Dr. Chen's results indicates that Taiwan's particle physics team is undertaking world-class scientific work.

NTU College of Law's English Journal Now Officially Included in SSCI List

The *Asian Journal of WTO and International Health Law and Policy* (*AJWH*), a semi-annual journal published by Asian Center of WTO and International Health Law and Policy (ACWH), NTU College of Law, won inclusion in the Social Science Citation Index (SSCI). Pending completion of related procedures, SSCI's Taiwan representative will personally deliver a certificate to ACWH. Although *AJWH* has been published for just two and half years (it is now at Vol. III, issue 1), it won the honor of inclusion in the SSCI database. Prior to its listing by SSCI, *AJWH* was accepted into the databases of Westlaw and Hein Online.

AJWH was founded by Chair Professor Chang-fa Lo, NTU College of Law. Several people are involved in Journal operations: external advisors to the ACWH,



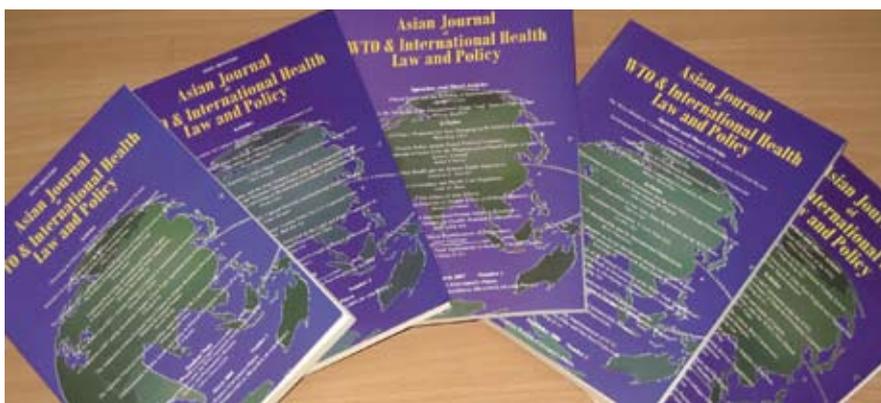
Prof. Tsai-yu Lin of Soochow University and Prof. Shin-yi Peng of National Tsing Hua University, as well as several graduate students from the Institute of Law who are the executive editors and editors. *AJWH* is an international English-language journal and the first academic periodical in Asia devoted to WTO health law and policy. It covers such areas as: Asian perspectives on trade practices, legal aspects of health policies, interdisciplinary research on trade and public health, etc. In addition, *AJWH* aspires to

foster development of WTO and international health policies by hosting in-depth discussions of issues related to their practical implementation.

Altogether SSCI database includes 115 legal journals, the majority of which are American publications. Few legal journals from other countries are listed by SSCI, especially from Asia. From the first issue of *AJWH* in March 2006, ACWH kept in close contact with SSCI regarding the procedures for being listed. After three years of concerted effort and undergoing a stringent review process, *AJWH* finally won inclusion in the SSCI list of international legal publications. This achievement boosted the morale of ACWH and will have a lasting influence on the legal profession in Taiwan.

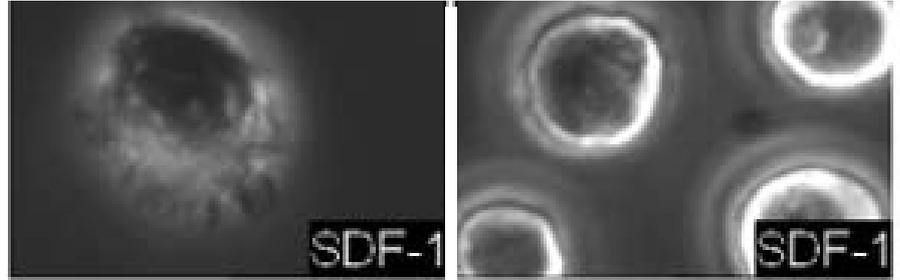
This year, ACWH began publishing another English-language journal, *Contemporary Asia Arbitration Journal*, in May.

ACWH's official website : <http://www.law.ntu.edu.tw/center/wto/index.asp>



NTU's Prof. Zee-Fen Chang Unfolds Moving and Dying Mechanism of Chronic Myeloid Leukocytes

📌 Stimulation by SDF-1: Normal cells (left) and Bcr-Abl transformation cells (right).



After years of effort, Prof. Zee-fen Chang from the NTU College of Medicine's Institute of Biochemistry and Molecular Biology has finally unfolded the moving and dying mechanism of chronic bone marrow leukocytes, providing a chance of survival for malignant chronic myeloid leukemia patients who are threatened by resistance to certain drugs. Prof. Chang's findings have been published in the *Journal of Molecular Cell Biology*.

According to Prof. Chang's research, chronic myeloid leukemia results from a malignant tumor produced by the translocation of the 9th pair and the 22th pair of chromosomes; its characteristics are marked by abnormal hyper-plasmia of leukocytes and splenomegaly. Every year Taiwan has about two hundred new CML patients. According to recent studies, after translocation of these two pairs of chromosomes, a carcinogenetic gene product called BCR-ABL is formed, which rather than being

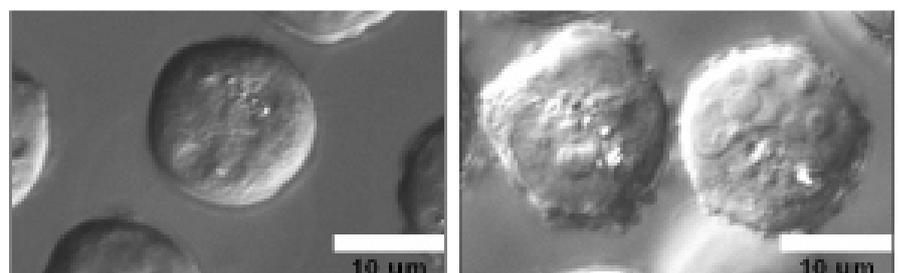
anti-apoptosis, stops the white blood corpuscles from splitting up. When treated with an exclusive BCR-ABL inhibitor called Gleevec, CML patients' life expectancy can be increased by up to fifteen years. However, studies have shown that about 20 percent of CML patients develop resistance to Gleevec, hence their lives are constantly in danger.

Prof. Chang reports that, in the course of using Gleevec to inhibit BCR-ABL, a gene called GFi-1B increases its activity. This can disband the anti-apoptosis function of BCR-ABL and reduce the resistance of CML patients to Gleevec, thereby improving the effects of treatment.

Her research findings show that, if researchers could find a chemical compound that increases the activities of the Gfi-1B genes, they could further disband the anti-apoptosis function of BCR-ABL and strengthen the poison-kill effect of low-dosage arsenic oxides on CML, thus allowing the patients to live longer by lowering their resistance to Gleevec. This method falls in line with the "cocktail therapy" concept, which espouses the idea of "combating poison with poison." As a result, this treatment method could constitute a new therapy for CML.

Prof. Chang's personal website :
http://www.mc.ntu.edu.tw/department/ibmb/english/teacher/ChangZeeFen/ChangZF_set.htm.

📌 Bcr-Abl transformation cell lines: Cells without drug treatment (left) and apoptosis after treatment with Gleevec (right).



NTU Hospital Team Doubles Survival Rate After Cardiac Arrest with Extracorporeal CPR



- Dr. Yih-sharng Chen of the Department of Cardiac Surgery
- National Taiwan University Hospital's old West Site building



have shown that survival rate declines rapidly when CPR exceeds 10-minute duration, and even more rapidly if it exceeds 30 minutes. As-sisted extracorporeal life support (ELS) has shown encouraging outcomes in cardiac arrest patients because it enhances coronary blood-flow, keeps heart tissue alive, and thus reduces the time to return of spontaneous circulation. ELS also supplies blood to multiple organs, prevents organ dysfunctions and increases the likelihood of late survival."

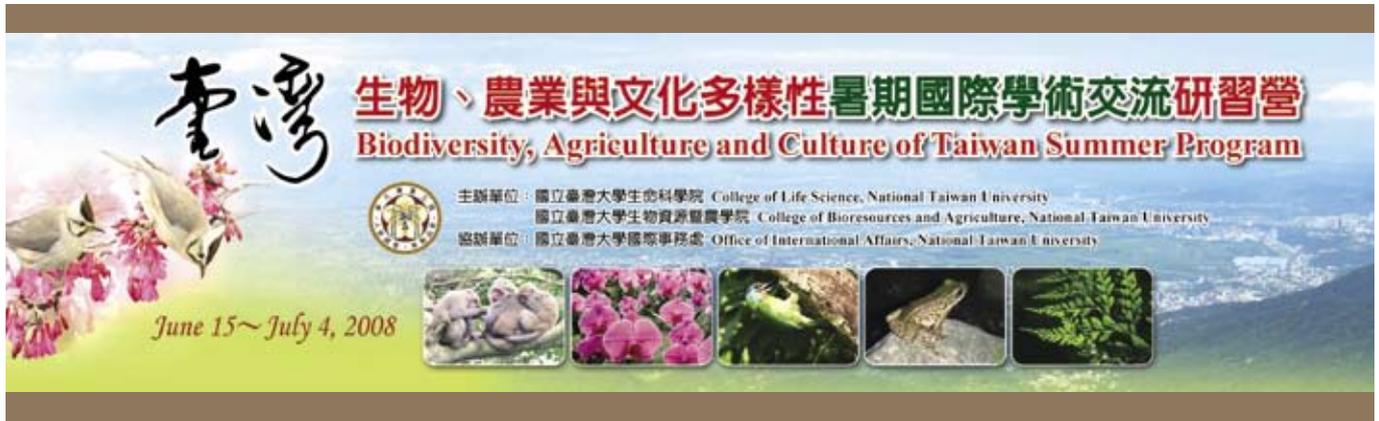
The resuscitation team at the National Taiwan University Hospital (NTUH) and NTUH Yun-Lin Branch reports in the August 2008 issue of the British medical journal *The Lancet* that the survival rate for patients in their study who were provided with extracorporeal membrane oxygenation (ECMO) life support was twice as high as that of those who were given conventional cardiopulmonary resuscitation (CPR) alone. This study, conducted by Dr. Yih-sharng Chen, Dr. Hsi-yu Yu and Dr. Wen-jer Ko of the Department of Cardiac Surgery, Dr. Jou-wei Lin of the Department of Cardiology of NTUH Yun-Lin Branch and their colleagues, evaluated the effect of ECMO on patients aged 18 to 75 years old after in-hospital cardiac arrest due to cardiovascular events.

An accompanying editorial comment in *The Lancet* said that, "Sudden cardiac arrest still has a low survival rate despite introduction of CPR, with the rate remaining unchanged since 1993. Investigations

In this study, 113 patients were given conventional CPR for more than 10 minutes, and another 59 were in the extracorporeal group. The overall survival rate to discharge, survival to 30 days and survival to 180 days were about twice as high in the extracorporeal group. The authors concluded that, "Extracorporeal CPR had a short-term and long-term survival benefit over conventional CPR in patients with in-hospital cardiac arrest of cardiac origin."

Prof. Pan-chi Yang, Dean of the College of Medicine, says the results of this study have completely altered the traditional definition of death if CPR has been unsuccessful for 30 minutes. It is still possible to save the life of the patients as long as the function of the vital organs can be supplied with adequate oxygenation. This study will inspire new efforts in resuscitation medicine to improve survival for those who experience cardiac arrest.

International Students Attend "Biodiversity, Agriculture and Culture of Taiwan" Summer Program



Eleven international students from Asia and the United States visited NTU in June and July to attend a 22-day course titled, "Biodiversity, Agriculture and Culture of Taiwan." Organized by the College of Bioresources and Agriculture and the College of Life Sciences, this program was designed to introduce the biodiversity and culture of Taiwan to international students as well as give NTU students an opportunity to communicate with foreign students in a context of academic and cultural exchange.

Four students from the University of Illinois at Urbana-Champaign, two from Kyoto University, one from the University of Tokyo and four from Southeast Asian countries who were recommended by SEARCA (Southeast Asian Regional Center for Graduate Study and Research in Agriculture) attended this course together with twelve NTU students. The assistant dean of the UIUC College of Agricultural, Consumer and Environmental Sciences also took part in the program along with the students.

The course included excursions to three national parks (Yangmingshan, Taroko and Yushan), the NTU Experimental Forest in Sitou and Heshe, the NTU Highland Experimental Farm in Mei-Feng, the Fu-shan Research Station, Guandu Nature Park, Yeliou Geopark, the Taipei Zoo and King Car Orchid Park. The program organizers also took the students on a tour of Taiwan's world-famous National Palace Museum. Moreover,

the students were also able to experience the nation's bamboo and tea cultures as well as Chinese calligraphy. During the course, all participants in the program were able to discover and experience for themselves the reasons why Formosa is considered Asia's most beautiful island. Due to the success of this first program, it is now being developed into a regular summer course. In addition, the UIUC will also offer more chances for NTU students to visit the United States to participate in its international student exchange program.

📍 The summer program participants visit Yeliou Geopark.



Department of Physics Adopts National Instruments' ELVIS II to Design Remote-controlled General Physics Laboratory



ELVIS II integrates such instruments as an electric board, electric meter, oscilloscope and function generator into a compact all-in-one instrument suite.

NTU's Department of Physics constantly upgrades its experimentation instruments to ensure high quality education and further NTU's pursuit of excellence in education and research. In the attempt to keep pace with world trends in use of digitized devices for physical science experiments, the Department of Physics incorporated ELVIS II (National Instruments Taiwan Corp.'s Educational Laboratory Virtual Instrumentation Suite) into its design of a remote-controlled laboratory for general physics experiments. This system is anticipated to inspire students to learn physics by providing hands-on experimentation through the Internet. This upgrade of the General Physics Laboratory with ELVIS II will also help NTU keep up with world standards.

The remote-controlled General Physics Laboratory offers digitized measurements, datamation and real-time control Web server (LabVIEW) features. It also uses Webcam and other video devices for online visualization. These functions allow the incorporation of virtual animations and questions for inquiry-based learning and make it possible to access remote and virtual laboratories operating in batch mode. These functions provide a straightforward approach to developing remote physics experiments for undergraduates. Additionally, this system provides in situ remote monitoring of student's experimental results in the laboratory.

National Instruments Taiwan has contributed 30 desktop PC as well as LabVIEW software and hardware to NTU. The success of this project, which was initiated by Prof. Chao-ming Fu and his team at the Department of Physics, inspired National Instruments Taiwan to develop further collaborations with the General Physics Laboratory to innovative educational experiences.

ELVIS II integrates such instruments as an electric board, electric meter, oscilloscope and function generator into a compact all-in-one instrument suite and serves as a platform for a variety of instrument functions that can be used to design laboratory teaching plans. Over a network, LabVIEW controls instruments and data acquisition at the remote sites of student users. General physics experiments can be adapted for remote and virtual laboratories via ELVIS II.

Each year, the freshmen course General Physics Laboratory attracts about two thousand students majoring in a range of disciplines, including sciences, engineering, medicine and agriculture. Over the past sixty years, this laboratory course has offered instruction in physics to more than one hundred thousand students through the conduct of general physics experiments, exploring basic principles of physics and teaching scientific research methodology.

Research Center for Digital Humanities Kicks Off with Unveiling Ceremony in June

NTU President Si-chen Lee inaugurated the Research Center for Digital Humanities (RCDH) at an unveiling ceremony held on the 2nd floor of the new building of the Department of Computer Science and Information Engineering on June 17. President Lee was joined by the RCDH's Managing Director, Prof. Jieh Hsiang and other university officials.

RCDH was established to manage and develop NTU's digital archives. Its inter-departmental research team includes personnel from NTU Library and colleges throughout the university. RCDH's core functions include 1) digitally archiving NTU's important, unique and fragile document treasures, and, 2) through the joint efforts of digital archival personnel and research experts in the humanities, organizing these archives in ways to facilitate research, teaching and other applications. RCDH's collections cover not only internal resources of the university but also external cultural heritage materials, as well.

For preservation and dissemination, the center digitizes research materials, such as texts and images, as well as treasures from Taiwan's history, humanities and natural phenomena. Spurred by the Executive Yuan's National Digital Archival Plan, NTU began its own digital archive work in 1996 with assistance from several government agencies and private institutions.



NTU's Web Presence Ranked 70th Worldwide, 2nd in Asia

NTU has invested heavily in developing its extensive network of web sites in order to promote learning and share information, and these efforts continue to receive global recognition. The most recent Webometrics Ranking of World Universities, released in July, ranked NTU 70th worldwide and second in Asia for overall web performance.

NTU's position in this ranking has climbed steadily over the last three years. The university was ranked 170th worldwide and fifth in Asia in January 2006. However, it has placed in the top-100 globally since July 2007 and, in Asia, it has been second only to Tokyo University since July 2007.

Webometrics Rankings have been conducted twice every year since 2004 by the Center for Scientific Information and Documentation of the Spanish National Research Council in Madrid, and are intended primarily to promote electronic access to scientific publications and other academic materials.



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