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HIGHLIGHTS

NTU Joins M8 Alliance to Solve Global Health Problems

NTU Strengthens Int'l Academic Ties

Scientists to Create Next-Generation Semiconductor Materials

Student Journalists Kick-Start Palm Groove News

Special Report

Dream of the Red Chamber Goes on Coursera



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Vice President for Academic Affairs

RONG-HUAY JUANG

NTU is striving to boost the interdisciplinary competitiveness of its students. To achieve this goal, we established the NTU Triangle Alliance with National Taiwan University of Science and Technology and National Taiwan Normal University. The Alliance was formed not just due to the three universities' proximity to Roosevelt Road and Heping East Road but the complementary nature of their departments and programs. The Alliance has allowed us to promote interdisciplinary studies by opening the way for our students to enroll in courses across the three campuses and transfer all of the credits earned back to NTU. We anticipate that Alliance students will take advantage of this opportunity to sign up for over 9,000 courses.

Besides allowing the cross-campus selection of courses, another of the Alliance's resource sharing measures includes an inter-campus library loan system. Hoping to pool their forces for the betterment of Taiwanese society, the three allied universities intend to raise the number of slots for disadvantaged students under the Hope Engineering Project.

We also encourage students to make use of the double major system to expand their skill sets. Besides the existing minor studies system, the university provides opportunities for students to pursue double majors through our newly established Design School as well as our wide variety of networking and multimedia computer science courses. At present, the university's double major program is focused on offering courses on multimedia networking and programming languages for students of the College of Liberal Arts and College of Social Sciences.

General education courses are another path for students who wish to earn double majors. In recent years, we have added design skills to the core abilities taught in general education courses. Faced with the rapid development of multimedia networking platforms in the Information Age, we hope students will seize these opportunities to enhance their information technology competency and overall competitiveness.

Meanwhile, we also encourage professors in different disciplines to team up to offer jointly instructed courses, for which they would share teaching responsibilities throughout the semester. Besides giving the students an interdisciplinary outlook and developing their interdisciplinary skills, such joint courses would facilitate exchange and brainstorming opportunities between professors in different fields, which sometimes lead to interdisciplinary breakthroughs and innovations.

While perhaps the quality of Taiwanese society and the attainments of the people here rank Taiwan among the most well developed countries in East Asia, we will still depend on the next generation to maintain this stable society into the future. I also look forward to more international students bringing different viewpoints and new synergies to the NTU campus, as the experience and insights gained from exposure to diverse cultures around the globe will also help Taiwan to continue to flourish.



Popular Online Course Earns Educator Award for Renowned Redologist

INTERVIEW WITH PROF. LI-CHUAN OU

“The point of reading is to transcend oneself, to enter the other. So we want to assume an attitude of replacement as we contemplate, comprehend, and put ourselves in the place of others, and gradually habituate ourselves to living together with the characters in the book. Only then will we begin to understand the nuances of their behavior, reactions, and sense of values as members of the gentry class.”



Academic experience

- Ph.D. (1997), Department of Chinese Literature, National Taiwan University
- Associate Professor (1997-2001), Department of Chinese Literature, Providence University
- Professor (2001-now), Department of Chinese Literature, National Taiwan University

Research expertise

- Tang Dynasty Poetry, Dream of the Red Chamber, History of Chinese Literature

Academic honors and awards

- Class A Research Award, National Science Council (1999, 2000)
- Outstanding Teaching Award, Providence University (2000)
- Outstanding Teaching Award, College of Liberal Arts, National Taiwan University (2004, 2005, 2007)
- General Education and Service Course Outstanding Teaching Award, National Taiwan University (2006)
- Academic Research Achievement Award (Outstanding Periodical Paper Category), National Taiwan University (2006, 2008, 2009, 2010, 2011, 2012)
- Academic Research Achievement Award (Outstanding Book Award, 2007; Class A Book Award, 2009), National Taiwan University
- University Outstanding Teaching Award, National Taiwan University (2010)
- General Education and Service Course Distinguished Teaching Award, National Taiwan University (2011)
- Educator Award, The Open Education Awards for Excellence, Open Education Consortium



Before she starts explaining the world of Prospect Garden in the classic novel *Dream of the Red Chamber*, Prof. Li-Chuan Ou calls attention once again to an important principle of literary reading, “We need to enter the thinking of the author’s milieu and avoid the presumptuous approach of using a modern mindset to view the past, or worse, disregard the past.”

In 2014, the renowned Redologist opened a course covering *Dream of the Red Chamber* on the massive

open online course (MOOC) website Coursera, which boasts an enrollment of 8 million registered users. In the course, Prof. Ou goes beyond the book’s content to share her extensive knowledge about the historical background, lifestyles, and social classes of the author Cao Xueqin’s times, and ties this extratextual information to the narrative.

The first time she offered the course, it drew nearly 20,000 students and became the third most popular course on the global platform. Prof.

Ou had not anticipated such a positive response and was impressed by the power of OpenCourseWare (OCW) to transcend the constraints of time and geography and reach such a vast audience. This year, the Open Education Consortium presented Prof. Ou with an Educator Award as part of its 2015 Open Education Awards for Excellence, praising the scholar particularly for her “dedication to open education.”

Despite the great effort required to record and produce the course, Prof.

An Interview with Prof. Li-Chuan Ou

How should we appreciate literary classics?

Literary classics have passed the test of time to serve as important guides for people when confronted with the unavoidable hardships of life. Facing life without reading the classics is like passing by a mountain full of treasures and walking away empty-handed. A great classic becomes complete only when it is appreciated by a great reader, and a great reader comes into being only when he or she allows reason to transcend emotion and approaches the text accurately and impartially.

Why is it so easy for the average reader to come away with misunderstandings when reading *Dream of the Red Chamber*?

The world of the Jia Clan is that of an aristocratic class that the modern person is unable to comprehend without some preparatory research. A person who has never been a part of this world will inevitably miss the subtle though important details and misunderstand the true purpose of each character’s actions.

What is the impact of OpenCourseWare on education?

When a large offering of quality courses is placed on an open platform, it is easy to compare the courses and their instructors. This certainly places some added pressure of oversight on the instructor.

Ou considers the hard work to have been entirely worthwhile. She says, “The point is not how many people we help to achieve a transformation, but that our production can be understood. After all, this is a form of cultural promotion. We are not asking more people to read this classic, rather we hope to enable more people to understand the value of the book properly.”

Throughout her career, Prof. Ou has

maintained that *Dream of the Red Chamber* is not a work of literary realism since it is based on fictional and fabricated content that display no correspondence to any specific historical people, happenings, or things. Nevertheless, on the whole, the novel possesses the logic of literary realism that helps readers to comprehend the culture of daily life and the value systems that prevailed among the nobles in Chinese society during that period. The scholar believes the value of *Dream of the Red Chamber* lies not in its tone of anti-feudalism or its critique of the gentry; rather, the novel’s greatest significance lies in its depiction of the profound and nuanced spirit of humanity rooted in the core of traditional Chinese culture.

Prof. Ou also stresses that readers of the novel must “understand the ancient gentry impartially.” Readers who appraise the characters or imagine the author’s intention according to the contemporary values of equality and freedom will misunderstand the meanings and motivations behind the characters’ words and actions. She contends that *Dream of the Red Chamber* is hardly the book many imagine it to be. Not a politically correct novel full of progressive ideas that satirizes class inequality while advocating equal gender rights and the freedom to love, it is a book that sings the praises of and sympathizes with the traditional aesthetics and ethics of the gentry of that era.

Popular Online Course Earns Educator Award for Renowned Redologist



An Interview with Prof. Li-Chuan Ou

What is the most difficult aspect of recording and producing an online course?

Facing the lens of a camera, I find it difficult to maintain my usual manner of expression and fluency of thought in the classroom. Yet, explaining *Dream of the Red Chamber* requires just this sort of meticulous thought, which became a serious challenge for my teaching. The ancients said, “When Master Sheng teaches the dharma, even a stone nods in agreement,” meaning that the Buddhist scholar Tao Sheng taught the dharma with such mastery that even a stone would be moved. The experience of opening a course on Coursera has allowed me to gain new insight into this saying: When Master Sheng was teaching the dharma, he certainly wasn’t speaking to stones.

How do you view the role of the teacher?

Regardless of how the modes of teaching change, for the instructor it always comes down to the course itself; the most important thing is to prepare well by conducting thorough research about the subject. The instructor must be able to endure loneliness in order to deeply cultivate his or her profession.

The teacher should respect the level of the students, and not speak over their heads or offer too many personal opinions. Instead, the instructor should operate from the position of helping the students to achieve a degree of critical understanding and be able to express their subjective views. While the profession of teacher involves a sense of authority over the class, I’ve always felt that I should avoid the expression of authority in presenting my instruction. One needs to be especially prudent in this position, particularly in the context of a MOOC course, with students from around the world.



▲ Official representatives to the 2015 World Health Summit pose for a group photograph. Associate Dean of the College of Public Health Chang-Chaun Chan (front row, sixth from left) represented NTU during the summit.

NTU JOINS M8 ALLIANCE AT WORLD HEALTH SUMMIT

Last November, NTU became an official membership of the M8 Alliance of Academic Health Centers, Universities and National Academies. The M8 Alliance is a global network of world-leading academic and research institutions that uses their combined medical expertise to lead the world in solving global health problems. The network provides the scientific foundation for the World Health Summit and organizes the influential summit meeting of global health experts each year.

Associate Dean of the College of Public Health Chang-Chaun Chan represented NTU at the 2015 World Health Summit in Berlin last October. During the event, the M8 Alliance elected NTU as an official member following the strong



recommendation forwarded by the alliance's co-president Shunichi Fukuhara. Fukuhara currently serves as Dean of Kyoto University's School of Public Health and KU's Associate Dean of the Graduate School of Medicine.

Since the World Health Summit and M8 Alliance are focused on research related to global public health issues, the primary academic units that will attend from NTU are the College of Medicine, NTU Hospital, and the College of Public Health. In the future, however, NTU will consider the entire university system when it selects the most appropriate faculty members and researchers to participate in the annual summits and regional meetings aimed at devising innovative solutions to the problems addressed at the annual events.

The M8 Alliance's prestigious membership comprises 19 universities and four research institutions from 16 countries. NTU's participation in the international organization provides it a high-level platform for cooperation with renowned European public health educational and research institutions.



PHOTO EXHIBITION JUXTAPOSES PAST AND PRESENT OF NTU



To commemorate the tenth anniversary of the Gallery of NTU History, the museum is currently hosting a special long-term exhibition titled “Invisible and Visible NTU.” The exhibition seeks to reveal our multifaceted existence in an era in which “we see so much that we end up not seeing enough” by linking a series of special maps that reflect various themes about NTU and together trace the path of the university’s history and the development of the campus across space and time. By exposing visitor to a variety of perspectives on the NTU campus, the exhibition seeks to open our eyes to a campus we have yet to perceive. The exhibition opened on November 13 of last year as part of NTU’s 87th anniversary celebration, and will run until June 30 of this year.

Special Report

1 The poster

2 This display reminds viewers of the Japanese-era dormitories once adjacent to campus.

3 Telling stories of a lost Taida, these 13 old photographs show NTU buildings and campus scenes that vanished long ago.

4 A map reveals the locations of the campus' historical trees.



Among the main exhibition items are five maps showing the layout of the Main Campus as it appeared at five different stages in the university's history. There are also 13 old photographs of NTU buildings and campus scenes that vanished long ago, each telling its own story of a lost Taida. A video filmed by the aerial drone videography team of the Department of Electrical Engineering's Class of '85 provides eye-popping views of the campus from above, revealing yet more perspectives on an NTU we seldom see. Also, the old and new NTUs are juxtaposed in a pair of aerial photographs of the Main Campus taken in 1945 and 2012.

However, highlighting the exhibition is a display made of geometrically-interconnected hand-painted circular boards. The boards present six themes: Taihoku Imperial University-era buildings; buildings by names that do not spell their functions; public art located around the campus; registered historical trees that have born witness to history; Japanese-era dormitories in the vicinity of Wenzhou Street and Chingtien Street; and student dormitories that no longer exist.

ACADEMIC HUB USES ORCID TO BOOST VISIBILITY OF NTU RESEARCHERS

Last year, the Medical Library of the College of Medicine won the praise and support of NTU President Pan-Chyr Yang for successfully creating a research portal to present comprehensive information about the college's researchers and their research works. Since then, the portal has been expanded and upgraded. It now serves as a one-stop university-wide system called NTU Academic Hub.

To further expand its popularity, this year, the Medical Library has dedicated itself to expanding the functionality and breadth to the Academic Hub. To keep NTU faculty and researchers in step with their international research peers, it is providing one-on-one personalized service to help them apply for an Open Researcher and Contributor Identification (ORCID) identifier code and complete the uploading of their curriculum vitae and academic publications.

ORCID is an international identification system that has gained widespread acceptance in the academic community, since it is able to identify the works of published authors across languages and research disciplines. ORCID's unique and permanent digital ID bears a 16-character alphanumeric code that ensures that every researcher's academic achievements are properly cited and more easily located.

In 2014, the library began using ORCID, then a newly emerging global project, as a way to increase opportunities for research exchanges and international cooperation. The globally standardized identifiers have enabled the College of Medicine Research Portal to accurately and fully present the researchers' areas of interest and their individual and



▲ A representative introduces NTU Academic Hub to the College of Electrical Engineering and Computer Science.

team-based research achievements. The portal has attracted greater international recognition of the college's faculty members due largely to the library staff's proactive efforts to assist faculty members in signing up for ORCID identifiers and setting up their ORCID profiles.

Established in August 2015, the university-wide Academic Hub, like the College of Medicine Research Portal, emphasizes the individual researcher rather than the title of the research work as its primary reference point. By providing a comprehensive compilation of a researcher's academic synergies, Academic Hub creates increased visibility for NTU and its researchers by allowing scholars around the world immediate access to the entirety of an NTU researcher's academic achievements. Moreover, ORCID can be connected to the systems of other services through a set of Application Programming Interface protocols. This enables researchers to directly export new information through such services as Scopus or Airiti to keep their profiles up to date.



▲ The members of Nano Weapon Theranostics show off their gold medal award.

TEAM WINS AGRICULTURAL BIOTECHNOLOGY AWARD IN MOE ENTREPRENEURSHIP COMPETITION

A team of student biotechnologists competing against 15 teams from around the country won the Gold Medal in the Agricultural Biotechnology category as well as the Best Investment Award in the poster contest at the Ministry of Education's annual Biotechnology Innovation and Entrepreneurship Competition on December 25.

The team calling itself Nano Weapon Theranostics used nanomedicine technology to develop a drug for the treatment of animal cancer. The team already possesses a technology and manufacturing patent for its targeted drug carrier.

According to the team, their system is capable of delivering drugs via different routes while at the same time regulating cancer-fighting medicine to achieve a slow and gradual release. This can significantly simplify the patient's treatment process. In the future, the team plans to further develop and deploy its technology for the human cancer drug market.

The MOE initiated the four-year Training Program on Innovation and Entrepreneurship of Biotechnology in 2014

in order to offer entrepreneurship training courses designed to prepare and encourage people with advanced degrees to form start-up teams. The trainees also get to experience the realities of starting a business so that they can later join the nation's biotechnology industry.

In coordination with the MOE program, the NTU Center of Biotechnology established the Agricultural Biotechnology Education and Training Center. Each year, the center runs training courses for biotechnology startup teams for which it invites experienced businesspeople to serve as team consultants and provide individualized guidance and real-life training.

Thirteen teams from these courses have completed business operating plans over the last two years. A student from the center's first training course has already founded a firm whose core technology and value lies in its utilization of tissue cultivation and extraction technology to develop products from the highly-valuable fungus *Taiwanofungus camphoratus*.

Teams from nearly 40 universities competed in the Biomolecular Design Competition at Harvard University.

Team NTU's NanoNeedle Wins Big Awards at Harvard Competition

An interdepartmental team of undergraduates returned to campus with a bagful of major awards after competing in the Biomolecular Design Competition (BIOMOD) at Harvard University, October 30 to November 1. During the competition, Team NTU showed off its NanoNeedle, a nanomolecular syringe-like device designed to deliver suicide genes that kill antibiotic resistant superbugs. The design impressed the judges in winning the Gold Medal Projects Award, Best Presentation Award, as well as the competition's 5th Annual MOLBOT Award.

The students developed their biomolecular device for the course "Biochemical Project Design and Practice," which was taught by Prof. Yen-Rong Chen of the Department of Biochemical Science and Technology and Prof. Hong-Ren Jiang of the Graduate Institute of Applied Mechanics. Made up of students from the Department of Life Science, Department of Electrical Engineering, and Department of Biochemical Science and Technology, Team NTU's achievements are exemplary of NTU's efforts in promoting interdisciplinary research and cooperation.

The NanoNeedle is a biomimetic nanomachine that functions like a bacteriophage. The team constructed the device using DNA origami to fold DNA into a two-part hollow tube composed of both a weak and a strong structure. The weak structure contains a plasmid carrying suicide genes, while the strong structure is rigid enough to breach the plasma membranes and cell walls of bacteria. Three aptamers located at the business end of the tube accurately identify targeted bacteria and bind to their cell walls, allowing the strong structure to penetrate the cell walls and inject the weak structure's deadly payload into the bacteria.

Team NTU created the NanoNeedle as an alternative to antibiotics in the treatment of multiple drug resistant bacterial infections. NanoNeedle can be outfitted with different mixes of aptamers and suicide genes that target and kill specific bacteria. Although the students still haven't graduated, they have already successfully developed a new delivery system for gene therapies devised to combat superbugs and other pathogens.

From the establishment of the team to the day of their project presentation at Harvard, the students stayed focused and determined over the course of ten long months. From the conception of the NanoNeedle to the achievement of experimental proof of the viability of their innovative device, this team-- featuring members with widely different backgrounds-- had an interdisciplinary mix that proved to be a major advantage at every stage of the project.

Remarking on his students' achievements, Prof. Chen noted that interdisciplinary cooperation like theirs will be essential in the field of biotechnology for the continued innovation of new value-added applications and novel creations.



Delegation Travels to Kuwait University to Deepen Active Partnership

▲ The president of Kuwait University presents a memento to Taida's vice president for international affairs and deputy vice president for student affairs.

A 17-member delegation of NTU administrative executives, professors, and students traveled to Kuwait for a week of academic and cultural exchanges with their counterparts at Kuwait University in late November. The delegation, which arrived in Kuwait on November 21, was headed by Vice President for International Affairs Luisa Shu-Ying Chang, Deputy Vice President for Student Affairs Cheryl Chia-Hui Chen, and Prof. Jyh-Ping Hsu of the Department of Chemical Engineering. NTU and KU have conducted a continuing series of reciprocal visits and exchanges since establishing their strategic partnership in 2011, and the delegation's visit served to deepen this active cooperative relationship.

At the KU campus, the delegation met with KU President Hussain Al-Ansari and toured the College of Business Administration, College of Engineering and Petroleum, College of Pharmacy, College of Medicine, and College of Computing Sciences and Engineering. It also visited the Deanship of Student Affairs and University Library.

The atmosphere at KU is relatively free among universities in the Middle East, and the NTU students

were impressed by the enthusiasm and curiosity of the Kuwaiti students. Since Taiwan and Kuwait do not have diplomatic relations, the inter-institutional exchanges initiated between NTU and KU help to heighten Taiwan's visibility in Kuwait and strengthen the friendship between the two countries.

Twelve NTU students representing departments from each of NTU's 11 colleges traveled with the delegation. Besides participating in academic activities, the students were led by a delegation of KU students on a fascinating tour of local Islamic cultural sites, including Kuwait City's Grand Mosque and the popular bazaar Souk Al-Mubarakiya.

The NTU students appreciated this rare chance to get a first-hand understanding of local customs and socio-economic conditions. More importantly, they enjoyed the companionship of their attentive Kuwaiti guides with whom they became good friends. The NTU students now anticipate a visit by a delegation of KU students to the NTU campus in March. They plan to host a hearty reception for their Kuwaiti friends in return for the exceptional treatment they experienced while in Kuwait.

A photograph showing two men in dark suits standing in front of a large presentation screen. The man on the left is handing a white gift box with a yellow ribbon to the man on the right. The screen behind them displays the text "UTokyo-NTU - The Past, Present and Future of" and a circular logo. The background is a light-colored wall with a wooden panel on the left.

MAJOR DELEGATION ATTENDS FIRST UTOKYO-NTU JOINT CONFERENCE IN TOKYO

▲ NTU Executive Vice President for Academics and Research Liang-Gee Chen exchanges gifts with the University of Tokyo's Executive Vice President Ken Furuya.

The UTokyo-NTU Joint Conference 2015, the first major meeting co-organized by NTU and the University of Tokyo since the two institutions established a major strategic partnership, was held in Tokyo on December 9-10. Executive Vice President for Academics and Research Liang-Gee Chen headed the event's NTU delegation, which included nearly 100 NTU administrative officials, faculty members, and students representing more than 30 research disciplines.

Among the high-level officials accompanying the delegation were Vice President for International Affairs Luisa Shu-Ying Chang, Deputy Vice President for International Affairs Bennett Fu, Dean of the College of Science Shih-Tzung Liu, Dean of the College of Engineering Jia-Yush Yen, Dean of the College of Bio-Resources and Agriculture Y.T. Shyu, and Dean of the School of Veterinary Medicine Chin-Cheng Chou.

The opening ceremony commenced with UT's Executive Vice President Ken Furuya and Veterinary Pathology Professor Hiroyuki Nakayama welcoming the NTU delegation to the UT campus for the two-day meeting. Deputy Director General Shigeto Sonoda of the UT Division of International Affairs then discussed the major exchanges taking place between the two universities while sharing his expectation that these exchanges would lead the two faculties to develop new ideas for cooperation in the future.

On behalf of NTU, Executive Vice President Chen added to Deputy Director General Sonoda's presentation by reviewing the history of

exchanges between NTU and UT. He then presented an overview of the six major areas of current cooperation between the two institutions and expressed his hope that the universities would build on the foundation laid during previous joint meetings across all fields to create new beginnings.

After dividing into groups focused on the conference's six categories of agriculture, veterinary medicine, science, information science, engineering, and atmospheric and oceanic science, the attendees gave research presentations and presented their outlook for future cooperation. During the conference, the NTU College of Engineering and UT School of Engineering also signed a cooperation agreement that will expand the international cooperation and long-term research exchanges between the two schools.

NTU is currently making preparations to host the second UTokyo-NTU Joint Conference from late November to early December this year.

International Corner



The Office of International Affairs hosted the Welcome Reception for International Scholars at the Gallery of NTU History on December 15. The event was organized by the OIA to show NTU's appreciation to the growing number of international scholars as well as to give them a chance to meet each other and local colleagues in a relaxed setting.

Moreover, as the first major event to be held at the university's history museum since it reopened following renovation, the reception allowed the new members of the NTU community to learn about their new campus's fascinating history.

The two-hour reception attracted more than 150 participants from 20 countries, including Brazil, Cameroon, China, France, India, Iran, Japan, and the United States. The mix of international scholars included professors, visiting scholars, postdoctoral researchers, as well as graduate and undergraduate students. International scholars are working in all of NTU's 11 colleges, however most of them are concentrated in the College of Science.

President Pan-Chyr Yang attended the reception to personally express his gratitude to the distinguished scholars for choosing to pursue their work at NTU, telling them, "In this supportive environment, we invite you to take this opportunity to interact with scholars

NTU's International Scholars Mix and Mingle at Welcome Reception



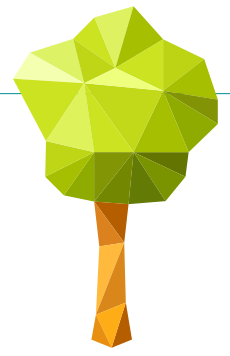
from different backgrounds and areas of expertise. The possibilities in this dynamic community are limitless."

Vice President for International Affairs Luisa Shu-Ying Chang also extended her welcome to the international scholars,

declaring, "We sincerely hope that this year's international event will stir lively conversations and the exchange of ideas, and provide the right atmosphere to mingle and get to know each other."

Besides mingling and getting to know each other, the reception guests were treated to some amusing mixer activities, such as a special photo time as well as an interactive activity to help the visitors learn about Taiwan's history and several popular tourist spots in Taipei.

As NTU strives to promote the internationalization of its campus, it is already reaping benefits from the increasing number of foreign scholars and students in a wide range of fields.



CLUB PROVIDES MUCH-NEEDED HEALTH CARE TO REMOTE INDIGENOUS VILLAGERS

1 A schoolchild undergoes a motor skills development test.

2 A Paiwan woman receives a health checkup.



An indigenous Paiwan senior citizen living in the mountain village of Tuban in southern Taitung County suffers from pain and has difficulty walking due to his deteriorating knee joints and leg muscles. However, he is gradually recovering the ability to stand up from his wheelchair with the support of crutches as a result of the daily physical therapy and massage performed by his in-home caregiver.



Meanwhile, in nearby Daren Township, the director of the local public health clinic reads with concern a report on the health of local schoolchildren. The report alerts him to a significant incidence of delayed development in small hand muscles among the area's young elementary school students. Previously unnoticed, the phenomenon urgently requires further investigation.

These are just two of the many positive outcomes resulting from the compassionate efforts of the College of Medicine student club, NTU Medserve. For more than three decades, members of this club have traveled to remote indigenous villages in order to provide medical and health care services for the local residents. Their services include training home care providers in the latest rehabilitation techniques, and conducting community health surveys, health examinations, and health education classes. It is efforts such as these that have made the above scenarios possible.

NTU Medserve organizes physical therapy workshops for in-home care workers in isolated indigenous communities. Led by students of the School of Physical Therapy and School of Occupational Therapy, the workshops impart medically-accepted rehabilitation concepts and techniques to the trainees. Supplied with the proper training, the health care providers are then able to offer a higher quality of care to help their patients find relief from pain and regain a degree of independence and self-reliance.

Some NTU Medserve members traveled to Daren Township during the past three summer vacations to conduct a long-term survey of motor skills development in local children. The survey revealed that a high percentage of seven- to ten-year olds there experience delayed development in hand dexterity. The club has shared the survey's results with scholars at the College of Medicine and is designing developmental progress charts and treatments so they can help children when they return to the township this coming summer.



Research Achievements

Defect-Free Monolayer MoS_2 to Take the Place of Silicon Semiconductors



An important study conducted by an international research team that includes researchers from NTU may have

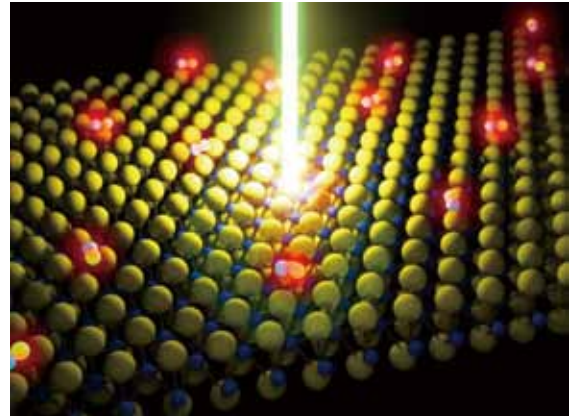
solved the greatest challenge in the material scientists' quest for the perfect monolayer, an ultra-thin semiconductor material that could lead to such futuristic consumer products as flexible LED displays that become transparent when turned off.

Scientists striving to create the atom-thin monolayer semiconductors confront two frustrating obstacles. First, the perfect materials they seek simply do not appear in the natural world. Second, the stubborn fact is that the thinner the semiconductor materials, the more the defects impact the performance of the electrical and optical components.

Recently, however, these frustrations were overcome with a simple new approach to fixing the flaws in molybdenum disulfide (MoS_2); namely, by forging an optoelectronically perfect two-dimensional monolayer by rinsing MoS_2 in a bath of the organic superacid—bistriflimide. This boosted the monolayer material's photoluminescence quantum yield from less than 1% to an unheard of nearly 100%. The team presented its revolutionary discovery in the November 27 issue of *Science*.

Three members of the Department of Electrical Engineering participated in the study: Ph.D. student Der-Hsien Lien, one of the study's three co-lead authors; distinguished professor and former NTU President Si-Chen Lee; and former NTU professor Dr. Jr-Hau He.

In recent years, material scientists have been exploring ways to develop new two-dimensional monolayer semiconductor materials because such materials possess special optoelectrical and mechanical characteristics that could be integrated into existing semiconductor manufacturing processes.



▲ Photoluminescence refers to the emission of light from matter that has absorbed the energy of photons.

At an infinitesimal seven-tenths of a nanometer thick, a single layer of MoS_2 is thinner than even a strand of human DNA, which is relatively bulky at 2.5 nanometers in diameter. However, despite the advantages offered by MoS_2 , scientists have been stuck at an impasse primarily because their synthesis techniques result in materials marred by a high density of flaws. The team's method of creating a defect-free MoS_2 that achieves perfect optoelectrical performance has opened the way to exploit the powerful properties of monolayer semiconductors.

These findings will open up enormous possibilities for the practical use of two-dimensional monolayer semiconductors, such as MoS_2 in optoelectronic devices and high-performance transistors. In addition to flexible, transparent LED displays, some of the astonishing products we might see stemming from this new technology include super high-efficiency solar cells, ultra-sensitive light detectors, and low power consumption nanoscale transistors. MoS_2 also shows great promise for replacing silicon-based components and becoming one of the materials scientists turn to create the next generation of semiconductor components.



Multimedia Campus News Channel Goes Online

the channel aims to cover mainly campus affairs, it also aspires to demonstrate concern for society at large and become a media platform that makes an impact.

The first edition of NTU Palm Groove News was filmed outdoors on the plaza outside the newly constructed College of Social Sciences Koo Chen-Fu Memorial Library. The platform has already reported the efforts of an NTU Outstanding Youth Award recipient who promote the development of an accessible environment for disabled people, and a humorous photographer's special tricks for capturing the smiles of NTU's students and professors.

At present, all of the news anchors, reporters, and editors of NTU Palm Groove News are NTU students and faculty members. The news outlet is continuing to bolster its base by recruiting students of the Graduate Institute of Journalism, Department of Bio-Industry Communication and Development, and NTU's Communications Program. It also hopes to attract students of other departments and graduate institutes who possess the time and desire to learn and create video journalism.

Moreover, the Multimedia Center and NTU Palm Groove News also plan to team up with a senior *New York Times* video journalist to co-organize activities that will bring even greater variety to the channel's content, including video journalism workshops, enterprise-sponsored video journalism competitions, auditions for news anchors, profiles of campus personalities, as well as interviews with NTU students and leaders of society.



▲ A student anchorperson on the new online campus news channel NTU Palm Groove News reports on a humorous photographer's special tricks for capturing NTU's smiles.

NTU Palm Groove News, an online news channel produced by NTU Library's Multimedia Center, has gone online, bringing NTU into the era of we media, also known as self-media, which is a form of news created by individuals or small groups with no funding from a media organization or group.

The campus news outlet produces multimedia reporting that relies on video, multimedia graphics, animation, images, and text. Although

Teaching and Learning



Although the vital life lessons taught in the course “Freshman Forum—Life Education” can be especially beneficial to first-year students, the general education course is nonetheless designed to help all NTU students identify and work toward their goals in life. The course invites “life instructors” from various professional backgrounds to share their own life stories and outlooks and engage students in exploring such topics as the meaning of life and life decisions. The goal is to help the students discover their inner callings and put them on the path to working toward their personal goals. This course was created by Prof. Johannes Hsiao-Chin Sun of the Department of Philosophy, who is the current director of the Life Education Center.

One recent weekly session featured the best-selling author Cyril Shiyong Chu, who, as an NTU alumnus, enjoyed good rapport with the students as he discussed the topic “Being Your Own Number One” with them. Drawing on the experience he gained while going through situations similar to the students’ situations today, Chu urged his junior schoolmates to get beyond competitive thinking, telling them, “The world does not lack successful people, but it does urgently need a diverse spectrum of individuals who can bring peace to society, who can heal and restore others, who can tell stories, as well as people who can truly understand love.”

One student posed the following questions to the author, “How is someone as common as myself to contribute to the world? Isn’t this a goal too far?” Chu immediately replied, “Were each and every one of us to learn, within the range of our capacities, to care about people, affairs, and things with whom we share no specific relationship, then the part of the world that is unrelated to ourselves would become smaller and smaller, and then our relationship to the world would become deeper and stronger.”

This winter, Chu demonstrated just this affection for others by joining the Yilan Migrant Fishermen’s Union in organizing a campaign to collect second-hand winter clothes for needy international fisheries workers. The Life Education Center also provided support to Chu during the campaign, by posting promotional announcements on social media as well as designating its office as a collection point for donated items. During the single month of December, NTU student volunteers and center staff were able to collect more than 200 items of warm clothing for the cause.

CANAL TO LINK LUNA POND WITH LIUGONGJUN POND

A century ago, the colors green and blue predominated in the area now occupied by the NTU campus as a network of canals and farmland covered a vast area of NTU's terrain. For more than a decade, NTU has endeavored to restore some of the old blue back onto the verdant green, which still blankets the campus.

In 2002, NTU initiated a project aimed at restoring parts of the canal system, allowing water to again flow along the road between Luna Pond and the farm beside Choushen Road. In 2003, a section of the farm was used to create the Liugongjun Pond and. In 2011, Luna Pond was given new life as its cement banks were replaced with permeable stone while its depths were increased so there would be more room for aquatic inhabitants to flourish there.

In 2015, NTU obtained access to water from the Hsindian River. This newly found water source can supply the water volume required to form and sustain a canal, finally making it possible to link Luna Pond with Liugongjun Pond. Designed to be one- to two-meters in width and up to 20 centimeters in depth, the canal will follow the original route of the campus' only historic canal.



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