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A QUARTERLY NEWSLETTER FOR UNIVERSITIES BY QS ASIA

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ISSUE NO

20

NWU now developing trailblazing medicine – the only in Africa!

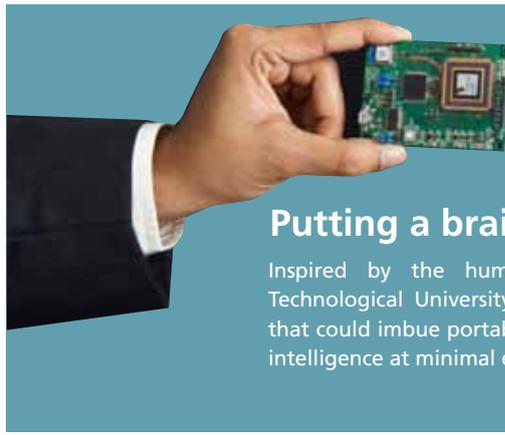
South Africa – New pharmaceutical technology that will not only cure patients more quickly, but also... *Read more on page 77*



Supercomputer Aziz is on!

Saudi Arabia – Another successful high-performance computing deployment has come to fruition at King Abdulaziz University (KAU)...

Read more on page 73



Putting a brain on a chip

Inspired by the human brain, researchers at Nanyang Technological University (NTU) have developed a smart chip that could imbue portable and wearable devices with artificial intelligence at minimal energy use and cost...

Read more on page 15

First time in Russia, International Olympiad on Informatics

Russia Federation – Talented young programmers from all over the world will take part in the XXVIII International Olympiad on Informatics (IOI) in Kazan from August 12–19, 2016...*Read more on page 30*



Palm waste more valuable than thought

Qatar – Qatar is home to more than 600,000 palm trees, which results in large amounts of palm waste being generated every year...

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Nobel laureates join research institute at CityU to promote innovative research

Page 21



Breakthrough epilepsy treatment transforms lives

Page 34



Another option for urban mobility: students create smart bike

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ASEACCU - Association of Southeast and
 East Asian Catholic Colleges and Universities

IFCU - International Federation of Catholic Universities

ASAIHL - Association of Southeast Asian Institutes
 of Higher Learning

UMAP - University Mobility in Asia and the Pacific

UMAC - University Museums and Collections

AUPF - Asian University Presidents Forum

IAU - International Association of Universities

AUAP - The Association of Universities of Asia
 and the Pacific

AIMS - ASEAN International Mobility for Students

SSEASR - South and South East Asian Association
 for the Study of Culture and Religion

Creating a niche in the international academic arena; Expanding knowledge

NORTH AMERICA 13

EUROPE 23

SOUTH AMERICA 1





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through academic linkages with partner universities in five continents

ASIA **55**



OCEANIA **10**





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TOP GLOBAL UNIVERSITY JAPAN

The Top Global University Project is a bold initiative funded by MEXT* that aims to enhance the international competitiveness of higher education in Japan.

37 universities have been selected for their innovative approaches to institutional reforms that will provide a blueprint for global education in the 21st century.

*MEXT: Ministry of Education, Culture, Sports, Science & Technology





The University of Tokyo
Constructing a Global Campus Model
at UTokyo

Keio University
Enhancing Sustainability of Global
Society through Jitsugaku (Science)

Chiba University
Chiba University : inspiring leaders with
a global perspective

Ritsumeikan University
Bridging the World and Asia
Human development to collaborate
across cultures and contribute globally to
Asian communities

Hokkaido University
Hokkaido Universal Campus Initiative
— Collaborate with the World —

Tohoku University
Tohoku University Global Initiative
University of Tsukuba
Transforming Higher Education for
a Brighter Future through Transborder
University Initiatives

Tokyo Medical and Dental University
—Health for All— TMDU initiative in
creating next generation professionals for
global health promotion

Tokyo Institute of Technology
Enhancing Tokyo Tech Education and
Research Quality through Administrative
Reforms for Internationalization

Nagoya University
Asian Hub University contributing to
a sustainable society in the 21st century

Kyoto University
Japan Gateway: Kyoto University
Top Global Program

Osaka University
Global University “World Tekijuku”

Hiroshima University
Hiroshima University Global Campus
Expansion and Innovation Initiative

Kyushu University
Strategic Hub Area for top-global
Research and Education, Kyushu
University (SHARE-Q)

Waseda University
Waseda Goes Global: A Plan to Build a
Worldwide Academic Network that is
Open, Dynamic and Diverse

Tokyo University of Foreign Studies
TUFS CONNECTS resources worldwide

Tokyo University of the Arts
Geidai Power Creation Initiative:
Only One Global Strategy

Nagaoka University of Technology
The Education Program for Innovative
Global Engineers -Toward development of
an integrated global campus with
collaboration between industry,
academia, and government-

Kanazawa University
Developing Human Resources to Lead the
Global Society and Establishing the
Kanazawa University Brand by Thorough
Internationalization

Toyohashi University of Technology
Creative Campus for Nurturing Global
Technology Architects

Kyoto Institute of Technology
OPEN-TECH INNOVATION: An Initiative for
Global, Social, and Regional Collaboration

Nara Institute of Science and Technology
NAIST Global³ : cultivating Global leaders
through Global standard graduate
education on a Global campus

Okayama University
PRIME program : producing
practical-oriented human resources in
a global community

Kumamoto University
A Leading University Cultivating Global
Leaders from Kumamoto

Akita International University
Japan’s World-Class Liberal Arts University

The University of Aizu
Fostering Global ICT Innovators through
the Combined Effects of Spirit,
Technology, and Adaptability

International Christian University
Creating Responsible Global Citizens
through a Global Liberal Arts Education

Shibaura Institute of Technology
Design and Implementation of a Human
Resource Development Model for
Engineering and Sciences focusing on
Value Co-Creative Education —
Contribution to Global Sustainability

Sophia University
Creating a global campus with multiple
hub functions and supportive governance

Toyo University
TOYO GLOBAL DIAMONDS: Becoming an
Asian hub university for global leaders

Hosei University
Creating the Global University: Toward
a sustainable society from pioneering Japan

Meiji University
Going Global Meiji 8000! —Developing
Students with a Frontier Spirit for the
Future, by Encouraging Students’
Proactive Learning—

Rikkyo University
Global Liberal Arts Education x
Leadership Education x
Self-Transformation —The Evolution of
Rikkyo as a World-Class University—

Soka University
Global Initiative for Humanistic Education:
Fostering Global Citizens for Building
Peace and Sustainable Prosperity

International University of Japan
Establishing a New Global Standard
from Asia

Kwansei Gakuin University
Establishing the Global Academic Port, an
international hub for academic exchange

Ritsumeikan Asia Pacific University
Global Learning: Towards New Horizons in
University Education



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- H** High Impact Research
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Welcomes you to:

12th QS APPLE Conference and Exhibition 2016
22 - 24th November 2016, Kuala Lumpur

7th QS MAPLE Conference and Exhibition 2017

Third International Conference on Electronic Design (ICEE) (2016)
11 - 12th August (2016), Phuket, Thailand

1st International Conference on Invention and Design (ICID) (2016)
13 - 14th May 2016, Kuala Lumpur, Malaysia

The 2nd Electronic and Green Materials International Conference (EGM) (2016)
11 - 12th May (2016), Phuket, Thailand

International Conference on Advanced Materials Engineering & Technology (IAMET) (2016)
1st - 2nd October 2016, Bandung, Indonesia

Asia Circuits Conference (ACC) (2016)
2nd August 2016, Ho Chi Minh City, Vietnam

International Conference on Electronic Green Materials (IEGEM) (2016)
2nd - 3rd December 2016, Kathu, Thailand



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QS Asia's 2015 – A calendar full of cracking conferences!

By Tony Martin

QS Quacquarelli Symonds' university focused, Singapore based operation is QS Asia, headed by the indefatigable Mandy Mok and run by a team of highly skilled - and highly travelled - professionals.

Renowned for its ability to bring university leaders together on the right topic, in the right place and at the right time, in 2015 QS Asia organized no less than twelve important international education meetings in eleven countries on three continents. All had university internationalization and performance improvement at their core.

Each meeting was tailored to the state of higher education development of a region or country, to a priority of university management, or to a particular academic area. Some, such as 11th QS-APPLE and 5th QS-MAPLE, were the annual editions of major global international education conferences. Others, including the QS Exchange series, were bespoke meetings addressing the current needs of individual markets.

This review of QS Asia's busy 2015 describes the essence of each event.

February

QS in conversation – INDIA

with Amity University

"An excellent organization of presentations from an experienced pool of experts!" – Dr Krishna Kumar, IIT Kanpur, India.

QS in conversation is a seminar series, presenting best practice and strategic advice to universities that are seeking to internationalize and achieve global recognition.

The unique nature of QS in conversation is its fluidity of concept and its detachment from particular regions. Each seminar can be geared towards important topics dedicated to the better understanding of the higher education in that region or country.

Over 250 delegates convened in Delhi for the first QS in conversation to be held in India. It was attended by Union Minister for Science and Technology and for Earth Sciences, Dr Harsh Vardhan.

The meeting was hosted by Amity University, a leading private research university with many campuses in India and abroad.

March

8TH QS WORLDCLASS – THAILAND

Classroom for leaders of Asian institutions

with Mahasarakham University

"The theme selected for this event is very important to the sector," Ahmed Al-Rawahi, Chancellor, University of Nizwa, Oman.

The 8th QS WorldClass adopted an innovative theme—*Higher Education, Commerce and Community: New Partnerships for Knowledge Development*.

This seminar gathered university heads and industry representatives from around the globe in a world-class destination, JW Marriott Phuket Resort & Spa. The discussions and presentations focused on the topic of university-business partnership and its effects on higher education traditions, practices and policies. They also looked at its role in business productivity and competitiveness, and

its short- and long-term impacts on the regions.

27 expert speakers delivered 24 topics including 8 sessions where an academic joined hands with a business partner in a co-presentation. 19 countries were represented at the seminar.

May

5TH QS-MAPLE – QATAR

QS Middle East and North Africa Professional Leaders in Education Conference and Exhibition

Theme - International Innovation and Co-operation in Higher Education.

with Qatar University

"QS-MAPLE never fails to give me a lifelong learning experience to realize the need for quality and excellence in international higher education... The QS Squared debates were simply brilliant and an enlightening experience. Let us work together for this academic legacy to continue forever!" – Dr D K Giri, Swami Vivekanad Subharti University

Held under the royal patronage of the Prime Minister of Qatar and co-hosted by Qatar University the 5th QS-MAPLE addressed the theme: "International Innovation and Co-operation in Higher Education.

5th QS-MAPLE convened 350 academics and university administrators from 35 countries whose mission was to exchange valuable knowledge, learn from the discussions and presentations, and network in a relaxed setting. 70 papers were presented in 2 days.

Joining their colleagues from the majority of Middle East and North African countries were university representatives from 27 other nations.

The 5th QS-MAPLE conference continued the altruism of QS Asia Quacquarelli Symonds by presenting US\$6,000 in scholarships to two deserving students from Qatar University.

In closing, Qatar University President Prof Sheikhha Abdulla Al Misnad said "We learned that higher education is not just a matter of designing programs and building research—it is also about understanding the dictates of the development of our societies and working alongside it instead of in front of it."

June

QS SUBJECT FOCUS SUMMIT – SINGAPORE

with Nanyang Technological University (NTU)

"Sincere thanks for taking the initiative to bring leaders in civil engineering education together to discuss the most significant issue facing civil engineering educators: how to attract the best students to take our global industry to the next level.

"The inspiring speakers and lively discussion at the QS Subject Focus Summit have provided direction and a supportive network for those of us leading change at an important time for our discipline." Dr Mark Richardson, Head of the School of Civil Engineering at University College Dublin.

Dr Richardson's words neatly sum up both the ground-breaking vision and the successful execution of the first QS Subject Focus Summit – Civil Engineering, held in June in partnership with Nanyang Technological University College of Engineering.

The summit's carefully focused tracks were *Branding Civil Engineering: Rediscovering our Narrative and Trends in Civil Engineering Education: Professional Orientation, and Future Directions of Civil Engineering Research and its Translation to Industry*.

By providing a global forum for networking and the exchange of new ideas, the 1st QS Subject Focus Summit was able to generate a deepened understanding of the challenges and opportunities facing civil engineering.

QS Subject Focus Summit – Civil Engineering attracted 125 academics and industry professionals from 26 countries, representing 29 entities that included higher education institutions, government organizations and businesses.

September

1st QS WORLDWIDE

NIZHNY NOVGOROD, RUSSIA

New directions for Russian and Central Asian higher education with Lobachevsky State University of Nizhny Novgorod

"I express our gratitude to QS for having organized such a wonderful QS Worldwide conference in Nizhny Novgorod. It proved to be a real success and we received nothing but positive remarks and emotions from all our colleagues. It was a real pleasure...to meet such amazingly professional people from around the world." – Anastasia Solomentseva, Moscow State Institute of International Relations (MGIMO-University)

This groundbreaking QS conference brought Russia's aspiring top universities into global view. It was a historic event for Russia and marked a major milestone in the internationalization of Russian higher education.

The event was co-hosted by Lobachevsky University and strongly supported by the Russian Academic Excellence Project 5-100.

The 1st QS WORLDWIDE convened 333 academics from 32 countries and representing 118 institutions to exchange their valuable knowledge, learn from the discussions and presentations, and expand their networks within Russia and beyond. 60 papers were presented in the two days.

In attendance was the deputy minister of science and education of the Russian Federation, Mr Alexander Povalko, who gave the opening speech.

Plenary topics, delivered by higher education experts from around the world sessions, included success secrets of world-class universities, higher education quality assurance in Europe, and the transformation of university landscape in Asia.

A highlight was a plenary panel discussion by Russian Academic Excellence Project 5-100 member universities on the best practices of the Project 5-100.

The closing plenary included an exclusive analysis of QS World University Rankings 2015 and QS BRICS University Rankings 2015.

November

11th QS-APPLE – MELBOURNE, AUSTRALIA

QS Asia Pacific Professional Leaders in Education Conference and Exhibition

New directions in Asia-Pacific higher education: Challenges and opportunities

With RMIT University

"I think QS-APPLE is the leading conference in the region for educators in my position," – Prof Thomas Antony Downes, provost and CEO of University of Reading Malaysia.

Flagship event QS-APPLE marked yet another *first*, bringing its Asia Pacific higher education focus to Australia, staging its eleventh annual edition in Melbourne, co-hosted by RMIT University.

The 11th QS-APPLE attracted delegates from nearly 200 institutions in 39 countries to address the theme *New directions in Asia-Pacific higher education: Challenges and opportunities*. 72 papers were presented by 88 speakers. Selected universities also showcased their offerings in the QS Hub – Exhibition which formed the heart of the invaluable networking.

Richard Colbeck, Australia's minister for tourism and international education, and senator for Tasmania delivered the closing plenary.

The innovative QS Squared debate engaged delegates on the topic *Graduate Employment Should Be the Number One Academic and Strategic Priority for Universities*. At the start of the session 51% supported the motion and 49% were opposed. By the end, the tables turned... supporters dropped to 10%, and those opposed gained the majority with 59% of the votes. The power of debate was manifested yet again.

University rankings played a key role in the content. A three-hour parallel session on QS's latest area of ranking, QS University Graduate Employability, was a highlight. The 2015 QS Top 50 Under 50 Ranking was announced at the QS Young Universities Forum, and QS Best Student City Ranking for 2015 were announced in plenary.

During the proceedings, QS Star Rating certificates were presented to four more universities and QS Creative Awards were presented to the region's universities that excelled in their marketing communications.

December

2ND QS SUMMER SCHOOL SUMMIT – KUALA LUMPUR

with University of Malaya

December saw QS Asia's final meeting of 2015. The 2nd QS Summer School Summit was held at the Grand Hyatt Hotel in Kuala Lumpur, bringing together 85 participants from 45 institutions in 19 countries.

The Summit offered a highly interactive format, including the Summit's signature "Elevator Pitch", an opportunity to promote a summer program in just 90 seconds. "Round Robin Chat Groups" happened for the first time, sharing knowledge and experience from all participants.

An engaging panel discussion touched on the importance of maintaining academic quality control, offering a unique student experience, and future trends for Summer Schools.

Unique content included a session dedicated to internships. Living labs offered insight into how short-term programs can meet students' experiential learning needs. Further insights into the Summer School student experience arose from the results of the QS Sunshine project pilot study. It appears that, while students often select programs based on their academic rigor, they most value the social aspects of the program once they are there.

Making an excellent summit unforgettable was the colorful hospitality and entertainment provided by hosting partner, the University of Malaya – Malaysia's oldest and one of its very finest institutions of higher learning.



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New in 2015: QS XCHANGE SEMINARS KAZAKHSTAN, JAPAN, SOUTH AFRICA AND THAILAND

"Nanyang Technological University is the top ranked young university in the world, and branding and marketing play a pivotal role in our success. We are happy to support QS Asia's innovative QS Xchange meetings which, while sharing our experience with host universities, have further established our reputation in the participating countries."
– Professor Bertil Anderson, President of Nanyang Technological University

With the flexibility of being held anywhere in the world, QS Xchange seminars were introduced in 2015 as bespoke one-day meetings for university international strategists. Their aim is to help develop international marketing and branding of the host universities and of their national higher education systems.

Starting in June and finishing in September, the inaugural circuit of QS Xchange seminars embraced Kazakhstan, Japan, South Africa and Thailand.

Says Mandy Mok, QS Asia's CEO and the inspiration behind the initiative: "We created QS Xchange to help our longstanding university partners to showcase themselves and their country's higher education strategies to a single host country.

"In a nutshell, the benefits are, for the host institution, to learn what its international peers are doing in this area and for the travelling universities, to showcase themselves and their country's higher education to key universities in one country, under one roof, and in one day.

"QS Xchanges cost nothing to the travelling universities. QS Asia acts pro bono for its partners to sustain and grow its deep commitment to the generation of international university cooperation."

June **Almaty, Kazakhstan**

with Asfendiyarov Kazakh National Medical University

Attended by the Ministry of Education and Ministry of Health and Social Development of the Republic of Kazakhstan, the QS Xchange seminar was very well received by the hosts. QS Asia expert, Mandy Mok, gave a presentation on "External Strategies for Marketing and Branding for Kazakh Universities".

Other notable speakers were Prof Yi-Ming Arthur Chen, vice president of Kaohsiung Medical University (Taiwan), and Winnie Eley, pro-vice-chancellor at the University of Newcastle (Australia).

July **Tokyo, Japan**

with Rikkyo University

This QS Xchange seminar attained special attention from the Japanese government, which was represented by the Ministry of Education's (MEXT's) Higher Education Bureau and Director-General for International Affairs.

Also speaking at the seminar was the chairman of Japan's National institution for University Evaluation.

One of India's top universities—Amity University—was represented by its chancellor, Dr Atul Chauhan, who delivered a speech on "Revolution in Higher Education in India through Private Initiative".

Osaka, Japan

with Osaka University

The highly world-ranked Osaka University played host to QS Xchange's second Japan venue in the country's third largest city. In attendance and speaking were representatives from Bank of Mitsubishi, MEXT's Minister's Office and the president of Kwansai Gakuin University.

Dr Francisco Javier Cantú Ortiz, provost for research and entrepreneurship from Tecnológico de Monterrey (Mexico) gave a presentation on his university's experience in "strengthening worldwide academic reputation".

August **Port Elizabeth, South Africa**

with Nelson Mandela Metropolitan University Business School

In conjunction with the 2015 IEASA (International Education Association of South Africa) Conference, QS held a half-day Xchange seminar on the theme of creative ways to build a brand, illustrated by successful case studies from a number of universities. Educators from India, South Korea, Malaysia, Taiwan and the Philippines shared their universities' branding stories with the audience.

September **Bangkok, Thailand**

with Thailand Association of Governing Boards of Universities and Colleges

The inaugural series of QS Xchange seminars concluded with a hugely successful meeting in Thailand, which attracted high-ranking Thai government officials as well as university leaders.

Dr Chumpol Pornprapa, president of Thai Association of Governing Boards of Universities and Colleges and Dr Piniti Ratnanukool, secretary general of Commission on Higher Education gave the opening speeches. Former deputy prime minister of Thailand, Dr Somkit Chatusripitak, gave a keynote lecture on Thai Universities in Global Positioning.

Advancing the future of a connected world

Singapore – To undertake the future of seamlessly connected world of devices for improving quality of life and work, a joint laboratory by Singapore's Nanyang Technological University (NTU) and Delta Electronics, a global company headquartered in Taiwan, has launched a series of research projects covering from sensors and connectivity to intelligence.

The laboratory was jointly set up by Delta Electronics and NTU's School of Electrical and Electronic Engineering (EEE) in November 2014, focusing on advanced technologies of the Internet of Things (IoT). These advanced IoT technologies seek to provide solutions to enhance and improve the quality of industrial manufacturing and life science such as precise location-tracking system for automation or novel wearable device for cardiac and respiratory monitoring.

Since its creation, Delta and NTU have put together a capable team of more than 18 team members consisting of researchers and research students. The multi-domain expert team from electronics, computer, analytics and biomedical field has been working on next-gen communications, data analytics and low-powered, embedded sensors and systems.

From positioning system, intelligence surveillance to wearable healthcare device, the laboratory aims to drive IoT innovations to meet the future needs of both business solution and also individual consumer needs. The rapidly growing IoT sector could add up to US\$19 trillion (S\$27 trillion) to the world economy in the next decade, according to projections by well-known technology giants. Delta and NTU's School of EEE envision their collaboration to become a world leader in research and commercialization in advanced IoT solution.



Demonstration of using focused ultrasound to perform noninvasive brain drug delivery

French President Hollande visits Ewha



South Korea – French President Francois Hollande, who made a state visit to Korea for the 2016 the France-Korea Year, visited Ewha on the morning of November 4.

President Hollande was welcomed by Ewha President Choi Kyunghee at ECC Square, and enjoyed a complimentary concert by students from the Department of Korean Music in the presence of Korean and French students at Ewha. Then he looked around the Ewha Campus Complex (ECC), Korea's largest underground campus structure, with the guidance of French architect Dominique Perrault, who built the ECC.

Along with President Choi, the French President participated in the high-level symposium titled "Climate and Green Growth" at Aryeong-dang (Home

Management House) and said: "I was touched by Ewha's beauty and its influence that goes beyond Korea." He also urged member countries of the United Nations Climate Change Conference to provide more aggressive support by saying that "an additional US\$100 billion is needed to help support developing and rising countries for the prevention of climate change by 2020."

President Hollande visited the Ewha Campus in the wake of many important international guests including Queen Elizabeth II (1999) and Chancellor of Germany Angela Merkel (2010). His visit to Ewha is particularly meaningful in that it marks the first time for a French head of state to pay a visit to a Korean university since the establishment of ties between Korea and France in 1886.

QS News2WOWU

QS News2WOWU is a quarterly newsletter published by QS Asia Quacquarelli Symonds, the Singapore-based regional subsidiary of QS Quacquarelli Symonds, producer of the widely respected QS World University Rankings in London.

Editorial Profile

QS News2WOWU features news and views on higher education achievements and developments across the globe, which are extraordinary and outstanding.

Circulation Profile

The online edition is also emailed to our database of half a million university academics and administrators across the world.

Up to 5,000 complimentary copies of the print edition are sent to the presidents of universities around the world. Copies are also distributed at QS events worldwide, including QS-APPLE, QS-MAPLE and QS WORLDWIDE international higher education conferences, QS Summer School and QS Subject Focus Summits and QS WorldClass and QS in conversation seminars.

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Advertorial

Putting a brain on a chip

Singapore – Inspired by the human brain, researchers at Nanyang Technological University (NTU) have developed a smart chip that could imbue portable and wearable devices with artificial intelligence at minimal energy use and cost.

They tested the small and lightweight prototype, which can be mounted on a headgear, and were able to decode a monkey's brain waves and predict how it wanted to move its fingers with 99.3% accuracy. This could pave the way for currently non-existent implants to help paralyzed people regain use of their limbs.

The team from the School of Electrical and Electronic Engineering said the chip could also enable surveillance cameras to automatically identify intruders and alert security staff, and health-monitoring devices to recognize when a person is about to have a heart attack or epileptic seizure and call for help.

The researchers tapped on manufacturing imperfections—viewed as a problem in electronics—to make their chip smaller, lighter and less power-hungry than commercial counterparts.

Electronic devices consist of transistors that amplify electric currents or act as switches. While transistors are supposed to have specified sizes and properties, they deviate, from the design and from one another, due to manufacturing inconsistency.

The NTU chip uses these unintended variations in the transistors' threshold voltage, which determines their ability to produce current for a given input voltage. It uses mathematical formulas that multiply input signals such as



The NTU team led by Professor Arindam Basu (sitting) from the School of Electrical Engineering working on the brain-inspired chip at VIRTUS, IC Design Centre of Excellence

brain waves, sounds and images using the array of transistors with varying threshold voltages. This fleshes out the signals' similarities and differences.

The chip can then better compare each signal to specified patterns. A doctor might study an epilepsy patient's brain activity and program the chip to recognize the signature of an impending episode and activate help. Military government agencies could train a surveillance camera with the chip to understand whether it is looking at, say, two soldiers or two tanks.

Conventional smart chips use an extra component to generate random numbers for the mathematical formulas. They also convert the signals to digital bits, and use digital circuits for the multiplications, to avoid using transistor multiplier components that might not conform to design specifications. These additional steps make their power usage about 100 times that of the NTU chip.

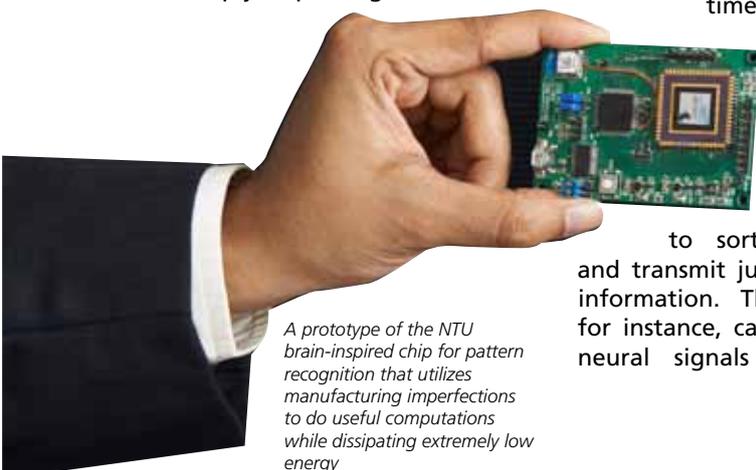
Professor Arindam Basu, who leads the NTU researchers, said their low-power and compact chip can be embedded in sensors to sort through raw data and transmit just refined or specified information. The monkey headgear, for instance, can decode the animal's neural signals and send just the

instructions to the robotic hand.

While wearable medical devices that monitor physiological parameters such as heartbeats, blood oxygen levels and brain activity are becoming more common, most of them simply collect the data and visualize it with a smartphone, he added. The chip could match the data with knowledge from patient databases to give people useful, refined information instead.

The research could also help realize Singapore's ambition to become a smart nation: "We are talking about having smart traffic lights, cameras in many places, and so forth. These devices cannot be transferring all the data all the time. It is much more feasible and scalable if they have some intelligence upfront to understand and transmit just the data's content."

The team's research was published in September 2015 in the United States-based Institute of Electrical and Electronics Engineers' (IEEE) scientific journal *IEEE Transactions on Biomedical Circuits and Systems*. The scientists are also forging ahead on several fronts, including the development of an implant integrated with their chip for brain-machine interfaces. They have also received a \$250,000 proof-of-concept grant from the Singapore-MIT Alliance for Research and Technology to improve their prototype, including its ability to recognize images.



A prototype of the NTU brain-inspired chip for pattern recognition that utilizes manufacturing imperfections to do useful computations while dissipating extremely low energy



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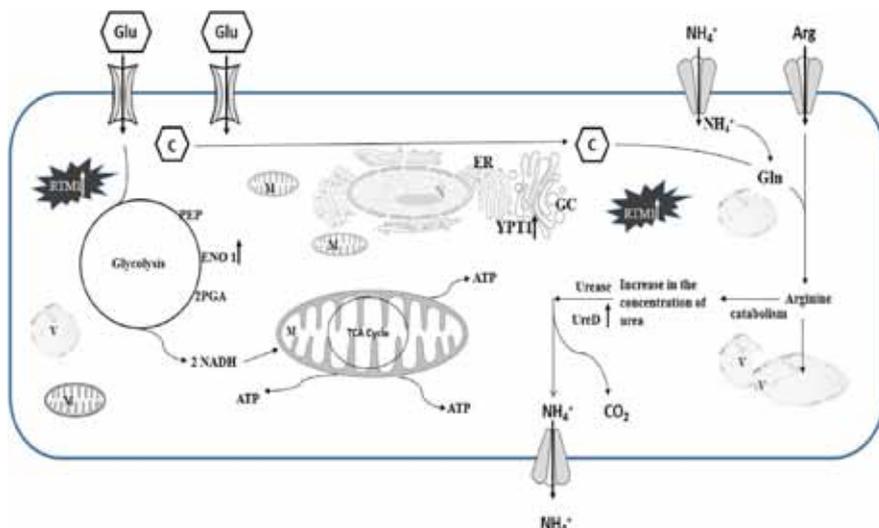
By India Today (India's Leading
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Unfolding astonishing magic fungus

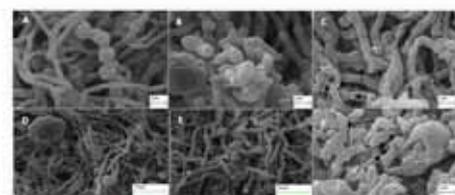


Published in *Scientific Reports, Nature*. Sept 2015. Scanning electron micrographs of *P. indica* morphology in isolation and co-culture with *A. Chroococcum* (WRS and M4)

India – About one-third of the Earth's biome is considered as arid/dry land and it is moving to desertification along with rise in global population. Keeping food security in mind, the major limiting factors affecting the agricultural productivity worldwide are environmental stresses. Desertification aside, global human population is going to reach 11 billion by the end of this century wherein about 8.7 billion individual are estimated

to be undernourished, mainly from developing countries. This will impose great pressure on the ecosystem in near future, especially from the expansion of agriculture for feeding the population.

Then, how does one get food to survive upon arrival of such devastating conditions? With this thought, back in 1990, Prof Ajit Varma of Amity University discovered a magic fungus (Rootonic) namely, *Piriformospora indica*, from



rhizosphere (area around root) of the xerophilic (dry loving) vascular plant (woody shrub *Prosopis juliflora*) grown in Thar desert of western India.

Prof Varma was very keen to find out a novel microorganism with potent features to replenish undernourished surviving in a depauperate climate. The "Rootonic" microscopic study shows that its spore looks like pear in shapes and has the ability to grow in vitro. Interestingly, *P. indica* being a symbiont, recovered in vitro (cultivable) on Petri dish in a rhythmic fashion.

Since 1998, after having a German patent on functionality of *P. Indica*, without any contention, *P. indica* has shown potential with various functional attributes to plants grown under natural/stressed conditions around globe. Being a benign player, *P. indica* reflects biotechnological implications for "Green" whereby one can grow with food security.

Insidious pollutant may have met its nemesis, orange peel!



Australia – Mercury is a neurotoxin, with developing fetuses most vulnerable. It pollutes water and soil and accumulates in animal tissues, most notably fish, which is why women are advised to avoid eating large amounts of fish during pregnancy.

Now Flinders University researcher Dr Justin Chalker and his collaborators have unveiled a new material that can scrub mercury from the environment. Sulphur-limonene polysulphide is a polymer made, as the name suggests,

from sulphur and limonene.

Sulphur is the element known for smelling like rotten eggs when combined with hydrogen to produce hydrogen sulphide. Limonene is found in the oil of orange peel and other citrus fruits.

Both are waste products, so the polymer effectively solves two problems: cleaning up pollution, and doing it sustainably. The petroleum industry produces between 60 million and 70 million tons of sulphur each year. There

are literally mountains of sulphur lying around the globe, unused. The citrus industry produces more than 70,000 tons of limonene each year.

While there are other materials that are very efficient at removing mercury from water, the new material is unique in that it is non-toxic, sustainable and far less expensive. It has the added bonus of changing color when it binds when mercury, helping to see how effective it is.

Since the Industrial Revolution humans have increased the concentration of mercury in the oceans by 10%, and the rate is increasing. The aim is to use this material to remove mercury from groundwater and soil. It might also be a useful component in water filters to ensure safe drinking water.

More generally, Dr Chalker hopes to inspire other scientists and engineers to develop novel and useful materials that address urgent challenges in sustainability.

Siberian Federal University researchers discover a unique historic period



Dendroclimatic station ZOTTO

Russian Federation – Researchers from Siberian Federal University (SibFU) in cooperation with their colleagues from the Forest Institute, Siberian Branch of the Russian Academy of Sciences, and some international institutions have discovered a unique period in world history characterized by extreme volcanic activity and significant climate and vegetation changes.

In recent years, Krasnoyarsk researchers have been developing a large spatial network of dendroclimatic stations and studying millennial tree-ring chronologies in North Eurasia. The research work is aimed at the detailed analysis of the past climate changes and their affects on the nature and society.

As Dr Eugene Vaganov, rector of Siberian Federal University, member of the Russian Academy of Sciences, says, tree-rings are a unique source of information about the past climate changes, forest fires, insect outbreaks and other events in natural ecosystems.

“The two recent years have been the most fruitful and we have gained the research outcomes of the global significance. First, on millennial tree-ring chronology we have managed to identify a unique historic period (536–547 years of the first millennium) with extreme volcanic activity and minimal solar activity that was fixed by other methods. That period was identified in the northern latitudes of Asia (Taymyr and north-east of Yakutia) as well as in its continental part (Altay–Sayan highlands).

The network of continental millennial

chronologies in Russia that show long-term changes in summer temperatures allows comparing them with the changes in Austrian Alps. Those geographically remote reconstructions of climate changes have revealed a significant similarity in long-term changes of summer temperature and allowed identifying the period from 536 to 660 of the first millennium as a unique historic period. Besides, that period is connected with important events in the history of the civilization and movement of vegetation zones,” says Dr Vaganov.

The researchers note that the scientific work of the same importance has been done in cooperation with the overseas partners to reveal contemporary tendencies in tree-ring growth as the indicators of temperature and precipitation changes in the comparative analysis of the long-term tree-ring chronologies on the territory of Siberia and Mediterranean area. It has been proved that in the contemporary warming conditions the synchronism in tree growth changes that took place on vast areas increases.

The researchers suppose that in northern forests it was connected with the earlier growth season start and tree-ring formation as a consequence of temperature increase, while in the Mediterranean area it was determined by the earlier tree growth start as well as by its rough limitation due to increasing drought. The SibFU dendrochronology school representatives and their international partners are sure that the results show a good preliminary signal of climate changes in the sub-continental scale.

Taiwanese university's first attempt ends in World Robot Olympiad championship



Oleksii Tkachenko adjusting the bowling robot

Taiwan – With the advancing of technologies, future robots will have visual capabilities that can create convenient lives for human beings. Led by their advisor, Dr Kai-Tai Song, a professor at the Institute of Electrical Control Engineering, Mr Oleksii Tkachenko, a student of Department of Computer Science, and Ms Chien Chin-Tze, another student of EECs Undergraduate Honors Program, participated and competed in the 2015 World Robot Olympiad (WRO) in Qatar from November 6–8, 2015.

Applying visual imaging techniques, the NCTU team precisely positioned the bowling robot, knocked down bowling pins accurately and successfully, and won the world championship in competition with 1,850 contestants from 47 countries around the world.

Under the university level, the pitching robot design competition is scored based on a full “STRIKE” of bowling pins initially. At stage 2 of the competition, a green bowling pin must be hit to gain scores. In the final stage, the obstacles placed in the line of vision have to be avoided in order to knock down the pins. Each test required a combination of robotic visual applications to identify the correct colors and relative positions of the pins. Once the visual system is stabilized, an accurate throw of the bowling ball is executed to make a score.

According to Professor Song's experience, the robotic vision system is vulnerable to lighting and moving shadows. The greatest difficulty is to achieve “hand-eye coordination” so that the robot can transform the visual input into corresponding actions. Perfectly overcoming the challenge is the essence of the outstanding performance of the NCTU team.



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A tale of two brands; rebranding with the times



HUFS logo



New Emblem

South Korea – Marking the 60th anniversary of its foundation, Hankuk University of Foreign Studies (HUFS) created a new emblem to redefine its university identity (UI) and project an integrated image.

In light of 60 years of its existence, HUFS has made an effort to settle a visual image which can reflect its characteristics as a “prestigious and influential” university.

In the course of developing a new emblem, the school encouraged active participation and feedback from the faculty, students, staff, and alumni.

The emblem, chosen through a questionnaire survey, consists of three components: Minerva, the owl, and the globe. At the center stands Minerva, the Roman goddess of wisdom. She is also known as Athena in the Greek mythology as goddess of wisdom and crafts. The name Minerva possesses a special place in the heart of HUFS family as it used to be the name of a peaceful hill located within the campus. Next to the goddess lies the famous owl of Minerva, a sacred bird which also represents wisdom. In addition to the goddess and her little companion, the last component of the new HUFS

emblem is the globe, to represent the insights and intelligence of HUFS in resolving global challenges and shaping the future.

“HUFS Vision 2020” declares that HUFS is dedicated to strengthening its specialized education in 45 foreign languages and to expanding the potential of HUFS members. The emblem represents “HUFS Vision 2020,” aspiring to become a world-class global university based on academic convergence.

“Now that our university has succeeded in building HUFS image with a new emblem, we will continue to fulfill the mission of fostering talents who embrace the value of academic consolidation,” said Dr KIM In Chul, the president of HUFS.

The new emblem will be used widely along with the existing symbols and logos to project the unique image of HUFS.

Nobel laureates join research institute at CityU to promote innovative research

Hong Kong – The recently launched Institute for Advanced Study (IAS) at City University of Hong Kong (CityU) marks a new phase in the promotion of innovative research in Hong Kong by world-leading scholars to address critical global challenges of today.

IAS is one of the few such centers in the region. It aspires to be an international center of excellence for the advancement of technology and innovation by bringing together an interdisciplinary team of world-renowned scholars and researchers, including Nobel laureates and academicians, to contribute to finding solutions for pressing real-world problems.

IAS will extend the frontiers of knowledge, and enhance its global outreach by integrating research capabilities informed by the sciences, technology and humanities to develop innovative solutions for human betterment. It will raise and invest resources to advance interdisciplinarity and innovation work with an initial focus on three themes: One Health, Digital Society, and Smart City.

Professor Way Kuo, CityU president, said IAS would be the perfect platform for



Nobel laureates Professor Serge Haroche (2nd from left) and Professor Jean-Marie Lehn (2nd from right) join the Institute of Advanced Study at CityU

spearheading the university’s drive for excellence in interdisciplinary research that benefits society. Internationally acclaimed scholars appointed as IAS senior fellows will work with and mentor other research fellows and students at CityU in problem areas of their choice.

Among the newly appointed IAS senior fellows are: Professor Serge Haroche, Nobel laureate in physics and member of French Academy of Sciences; Professor Way Kuo, member of US National Academy of Engineering and Academia Sinica in Taiwan and foreign member of Chinese Academy of Engineering and Russian Academy of Engineering; Professor Jean-Marie Lehn, Nobel laureate in chemistry, Member of

French Academy of Sciences; Professor Frank Shu, member of US National Academy of Sciences and Academia Sinica in Taiwan, and Recipient of the Shaw Prize in Astronomy; and Professor Stephen Smale, Fields Medalist and Wolf Prize recipient and member of US National Academy of Sciences.

IAS will also benefit immensely from the expert guidance of Professor David D Ho, scientific director and CEO of the Aaron Diamond AIDS Research Center and member of US Institute of Medicine and Academia Sinica in Taiwan, and Dr Lee Kai-fu, chairman and CEO of Innovation Works. They have joined IAS as members of its International Advisory Board.



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PROGRAM

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UI offers opportunities for international students to experience studying at UI for one or two semesters, while experiencing life at one of Indonesia's leading universities with the unique opportunity to live in Jakarta, the capital of Indonesia, and Depok. This program will enrich and develop your international outlook experiences.

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Our Short Course is a comprehensive living and learning program for international students offering you a study about contemporary Indonesia in its different aspects, while learning and experiencing Indonesian language and culture. Students are challenged to discuss their views and gain new insights with our lecturers knowledgeable about the issues.

Visiting scholar

UI welcomes applications from students, senior academics, professors, and researchers to exchange expertise and carry out research with UI's academic counterpart.

World's top green campus announced



Indonesia – Universitas Indonesia (UI) Integrated Faculty Club has announced the world's top ranked green campuses. UI GreenMetric ranking results show University of Nottingham achieving first place with total score of 7,267, followed by the University of Connecticut in second place and University of California, Davis, in third place from a total of 407 universities participating in this ranking. Universitas Indonesia (UI), the developer of this assessment, found itself in the 33rd place with a total score 6,157.

UI rector, Prof Muhammad Anis, stressed the importance of UI GreenMetric as a benchmarking tool for other universities that are serious in improving their environment-friendly campus. "The UI GreenMetric ranking itself is also a mechanism for those universities that want to excel their efforts to make the university a role model for students, academics and the general public of how an eco-friendly environment is generated by learning from those that achieved top position in UI GreenMetric ranking."

Since its launch in April 2010, UI GreenMetric World University Ranking has seen a pleasantly surprising popularity and recognition from universities around the world. As a result, the number of participating universities has been increasing steadily every year. In the outset only 95 universities from 35 countries participated for the 2010 assessment.

The number increased to 178 universities from 42 countries in the following year. In 2015 UI GreenMetric saw 407 universities from 65 countries, including 5 new countries, namely Bangladesh, Iraq, Spain, El Salvador and Australia. This trend speaks for itself; there is a high commitment of universities around the world in improving the green quality of their campus environment through various preservation efforts.

UI GreenMetric that was initiated by Universitas Indonesia as a call of action for sustainability in higher education institutions through a global ranking

of green university campuses 5 years ago seem to fit well with this need. UI deeply believes that this initiative should continue to be improved and to be expanded to more universities around the globe.

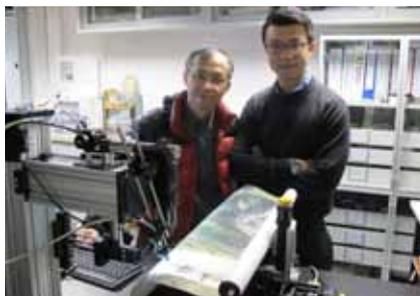
Currently, UI GreenMetric ranking is based on six indicators: campus green statistics, solid waste management, energy and climate change, water usage, transportation, and education. These indicators are derived from three basic principles, namely environment, economic, and equity (3'Es). According to Prof Riri Fitri Sari, chairwoman of UI GreenMetric, the 2015 UI GreenMetric ranking had added several criteria related to water conservation and carbon footprint calculation.

In addition, the most recent measurement also incorporated scoring

and weighting adaptation for each criterion. It is worth noting that UI GreenMetric was officially accepted as a member of IREG Observatory (International Ranking Expert Group) at IREG-6 Conference in April 2012 in Taipei. IREG is a Belgium-based foundation that functions as quality assurance board of world's ranking systems by employing audit and certification mechanisms.

UI GreenMetric has been mentioned and complimented in numerous events in various university forums, including the ranking utilization analysis in UNESCO forums, world's university websites, and various scientific publications. UI believes that the UI GreenMetric ranking initiative is part of UI's responsibility as a higher education institution to answer global environment challenges.

HKBU team's breakthrough laser technology for art authentication at least 100 times more sensitive



Professor Cheung Nai-ho (left) and Dr Bruno Cai (right) demonstrate the use of patented laser technique Zep2Probe to analyze the chemical information of cinnabars on a Chinese painting

Hong Kong – Professor Cheung Nai-ho of the Department of Physics of Hong Kong Baptist University (HKBU) and Dr Bruno Yue Cai, a former PhD student of Professor Cheung, have developed a laser technique that can sensitively analyze the chemistry of artworks such as antiques and paintings. Unlike conventional laser ablative microprobes which cause irreversible damage to valuable art works, their technique causes no visible damage even when examined under a high-magnification microscope. Moreover, the technology, which has been granted a US patent, is capable of measuring the chemical information in real-time and achieves 100 to 1,000 times better sensitivity than current methods.

Zep2Probe, the instrumentation platform developed by the team,

delivers a laser pulse onto the sample and vaporizes only about one nanogram of the material, in contrast to conventional laser microprobes which typically remove micrograms. The gas plume so produced is excited to fluoresce by another ultra-violet laser pulse. The fluorescence reveals the elemental composition of the sample.

Using a government grant that supports technology start-ups from public universities, they set up ANA Artwork Material Analysis Company Limited. Dr Cai, president and co-founder of the company, said that through the new technology, they aim to help local and overseas museums, art institutions and private collectors in analyzing paintings, ceramics and frescoes.

The Louvre Museum in France is embarking on a collaborative project with the team to authenticate and analyze their art objects. ANA has also tapped into the demand for authentication in China's burgeoning art market. Examples of their projects include the analysis of Chinese black inks and cinnabars on xuan paper and the chemical sorting of Yixing teaware. The new laser technology can also be extended to other fields, including forensic analysis of questionable documents presented in a legal trial.



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Prof. Hartwell with CGU faculties and Prof. Pao



Assit. Prof. Schuyler with student



Prof. Hartwell with Prof. Pao



Prof. Nicholson in CGU



Prof. Tseng and his Innovation & Startup Challenge award-winning team with the entrepreneur Stan Shih



Prof. Fugmann with student



Prof. Shiao with his metabolomic team

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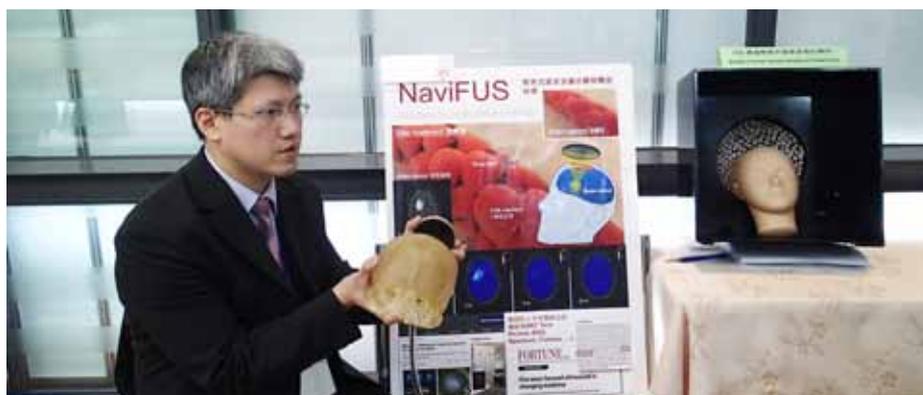
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Groundbreaking for Taiwan: first Proton Therapy Center



Demonstration of using focused ultrasound to perform noninvasive brain drug deliver

Taiwan – Under the leadership of Professors Leland Hartwell (Nobel laureate, 2001), Chia-Chu Pao (president of Chang Gung University) and Yu-Sun Chang (director of Molecular Medicine Research Center), Chang Gung University (CGU) has gathered more than 70 basic scientists and 100 clinicians interested in cancer research working together to understand how cancer cells outgrow and become life-threatening with the aim of providing solutions for prediction, prevention and treatment of cancer.

Cancer researchers in CGU have received many national and international awards. Professor Yu-Sun Chang has recently received the 25th Wang Ming-Ning Award from the Wang Ming-Ning Memorial Foundation and the Excellence in Academic Research Award from Taiwan's Ministry of Science and Technology. These awards recognize her contributions to the cross-disciplinary research in virology and oncology. Her team has recently revealed that leukemia inhibitory factor in serum promotes Epstein-Barr virus-associated nasopharyngeal carcinoma tumorigenesis and its level may predict local recurrence and radio sensitivity of the patients.

Another example is Professor Hao-Li Liu, chairman of the Department of Electrical Engineering. He leads the development of a focused ultrasound array technology to temporally open the blood-brain barrier to facilitate drug and gene delivery to the brain. Recently, he has received the Frederic Lizzi Award from the International Society of Therapeutic Ultrasound (ISTU) in recognition of his achievement in integrating ultrasound technology and treatment of brain tumor. The Fortune Magazine phrased this technology as

“one of the five ways focused ultrasound is changing medicine”. A startup company has recently been licensed with the technology to promote its clinical applications.

CGU is also recognized worldwide for excellence in biomedical research facilities. CGU is home to a modern proteomic technology platform. The National Cancer Institute (USA) sponsored Clinical Proteomic Tumor Analysis Consortium (NCI-CPTAC) will collaborate with CGU for early detection and diagnosis of oral cancer. CGU has also established metabolomic and genomic core facilities to complement the proteomic core. CGU has been invited by Professor Jeremy Nicholson of Imperial College, UK, to join his Phenome Center.

A groundbreaking move in CGU's cancer research program is the commissioning of the first Proton Therapy Center (PTC) in Taiwan, located in Linko Chang Gung Memorial Hospital. “Equipped with state-of-the-art devices and technologies, we can improve cancer treatment and advance medical science,” said Professor Chuan-Jong Tung, dean of CGU's Institute for Radiological Research.

In addition to cancer, scientists and physicians in CGU are also making excellent progress in the study of another degenerative disease, namely, heart failure. Using a metabolomic technology, they have found a new approach for early predication of heart failure, and their findings have been published in J. Am. College of Cardiology (the top ranked journal in cardiology). Moreover, the editor of JACC has commented that the findings by CGU can revolutionize the clinical monitoring of potential heart failure patients.

Almaty Management University with four Palmes by Eduniversal



Vice rector for science and strategic development, Ms Daniya Asanova, receives the Eduniversal award on behalf of AlmaU

Kazakhstan – Almaty Management University won four Palmes of Excellence at the 8th worldwide convention Eduniversal, held in Harvard University, in Boston (USA) in October 2015.

In 2008 the International Academy of Business (as AlmaU used to be called) was awarded the “Palmes” for the first time. This title has been awarded every year until 2013, when IAB first earned three Palmes. Since then, AlmaU has received four Palmes—as a “top business school with significant international influence”.

The Eduniversal system rates schools according to the international reputation of a school at national and global levels, and by geographical zone. After the 1000 best business schools in 154 countries have been selected, they are divided within each country into five levels of excellence which Eduniversal calls the Palmes of Excellence. There are five leagues of Palmes of Excellence: business schools with significant local influence (one Palme), good business schools with strong regional influence (two Palmes), excellent business schools with strengthening international influence (three Palmes), top business schools with significant international influence (four Palmes) and universal business schools with strong global influence (five Palmes). Having earned four Palmes in Eduniversal ranking in 2013, AlmaU entered the top 300 of the best business universities of the world.

UNMC reaps awards at international engineering



Dr Amin Malek mohammadi (left) with the UNMC team

Malaysia—The University of Nottingham Malaysia Campus (UNMC) team won one Gold, one Bronze and the Special award from Malaysian Research and Innovation Society (MyRIS) at the 2015 International Engineering and Technology Exhibition.

UNMC team consisted of Dr Amin Malek Mohammadi, Dr Mohanna, Mr How Chin Joe, Mr Ong Jun Yang, Mr Mohamed Asaad Elsherif, Mr Nguyen Dong Nhat, Mr Lee Han Lin and Ms Trishna Saeharaseelan.

“UNMC is a research intensive university. I am very proud of this achievement by my students after competing against more than 40 excellent teams from various universities,” said Dr Amin Malek Mohammadi, head of Electrical and Applied Mathematics Research Division.

Researchers from the Electrical Systems and Applied Mathematics Research Division, Faculty of Engineering at UNMC won the awards for the Design and Implementation of an

Autonomous Underwater Vehicle (AUV); and the Mapping Multiplexing Technique (MMT), a Power Efficient Transmission Format for High-Speed Optical Networks.

An AUV is ultimately an unmanned underwater vehicle that is able to navigate autonomously. This submersible vehicle is used with ultrasonic sensors to create a mapping of submerged elements and the underwater terrain. After its task completion, the AUV returns to its default location, or home location, with the data collected stored on a memory storage device.

MMT challenges the high power consumption issue that exists in high speed short-haul data centers. The N-channel MMT scheme provides means for increasing both, the information capacity and power efficiency of high speed optical transceivers.

The Chinese University of Hong Kong pioneers breakthroughs in solar energy research



Prof Yi-Chun Lu (Department of Mechanical and Automation Engineering, CUHK) and her research team are assembling lithium sulphur-impregnated carbon composite flow battery in a glovebox. Their work has demonstrated the highest catholyte volumetric capacity to date

Hong Kong – The fast-growing demand for energy and the recognition of man-made global climate change underscore the urgency of developing clean and renewable energy resources to replace fossil fuels. Harvesting energy directly from sunlight by photovoltaics (PV), photo catalysis, artificial photosynthesis, and other enabling technologies is a promising way to meet such requirements.

Professor Wong Ching-ping, dean of the Faculty of Engineering, The Chinese University of Hong Kong (CUHK), is leading an inter-disciplinary, multi-institutional team consisting of more than 30 senior academics to carry out the research project “Smart Solar Energy Harvesting, Storage and Utilization”. Funded by the Theme-based Research Scheme (TRS) (US\$7.7 million, 2014–18) of the Research Grants Council (RGC) of Hong Kong, the project covers the development of thin film PV devices and modules to enhance the performance of solar harvesting; the design of smart electricity storage; and the establishment of distributed grid systems to increase the penetration of solar energy utilization. The project aims to strengthen the competitive edge of Hong Kong in solar energy technologies and their market penetration by combining the newly developed PV modules with the intelligent system integration.

The project has recently achieved significant breakthroughs: development of a high-energy-density catholyte that exploits highly concentrated sulphur-impregnated carbon composite, to achieve the highest catholyte volumetric capacity (294 ampere-hours per liter) reported to date, which is five times that of the state-of-the-art vanadium catholyte; development of nanostructured metal oxide-carbon composites for asymmetric

supercapacitors, which exhibit high energy and power densities of 98.0 Wh kg⁻¹ and 22,826 W kg⁻¹, among the best performances reported to date; design of single-junction organic solar cells with a record efficiency of 11.5%, which has been officially certified and is noted as a major technological breakthrough by the US Department of Energy in its renowned NREL chart of “best research-cell efficiencies”. In addition, the team members found that thermal radiation is an attractive route for photon-energy “upconversion”, with efficiencies higher than those of state-of-the-art energy-transfer upconversion under continuous-wave laser excitation.

In the final stage, field demonstration of micro grids will be carried out at a student hostel at CUHK by incorporating PV modules, smart storage and advanced management system developed from this project. This will be the first R&D project of its kind focusing on rooftop solar panel and building-integrated PV (BIPV) powered urban-level micro grid systems at the very end of power grid (lowest voltage level). Uniquely, a full-scale system solution of urban micro grids from specific devices to system operation and management level will be provided, offering a significant reference for PV development in modern metropolises like Hong Kong.

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	Ranked 130 by U.S. News & World Report - Best Global Universities for Engineering in 2016
	Ranked #56 by THE BRICS & Emerging Economies Rankings 2016
	Ranked #61 by QS Asian University Rankings 2015
Awards	Tier 5 (Excellent) in the Malaysian Higher Education Institutions Rating System SETARA'13
	6-Star Rating in Malaysia Research Assessment Instrument (MyRA)



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CHERISH CHONG

Current student

*Selected for the year-long
Pre-doctoral Research Training
Programme at Harvard.*



ALVIN TEO KUO JING

Graduate

*Pharmacist working with Médecins Sans
Frontières (Doctors Without Borders).
Pictured on a mission in South Sudan.*



DENNIS LAU

Graduate

*CEO of Mosaic Music Entertainment.
Electric violinist, composer and
music producer.*

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First and only in Malaysia, UCSI University students to conduct research at world's no.1 medical school



UCSI medical students, Tan Jia Wei (left) and Ting Pei Yee

Malaysia – Two more UCSI University medical students have been selected for the year-long Pre-doctoral Research Training Program at Harvard University, boosting UCSI's track record of engagement with the world's best universities.

UCSI medical students, Tan Jia Wei and Ting Pei Yee, recently left for Boston where they will conduct clinical research at Harvard Medical School.

They will be allowed to focus on their own research projects after an initial period of supervision and training.

At Harvard, the duo will be attached to the research team led by Professor Dr Gordon Williams, a leading clinician-scientist who has published over 500 papers in high-impact scientific journals. Professor Williams also heads the Hormonal Mechanisms of Cardiometabolic Injury Program at Harvard's Brigham and Women's Hospital.

"You can only advance medicine through research and I can't wait to get started," enthuses Jia Wei who intends to be an oncologist. "It's a privilege to work with the world's best minds and I will be analyzing big data to understand as much as I can about patients, diseases and the correlations that drive important decisions in medicine."

Jia Wei's and Pei Yee's selection marks the second straight year UCSI has sent its best medical students to Harvard for cutting-edge research—the latest development in an annual arrangement between the two universities.

Cherish Chong was the first UCSI student to be selected to pursue

research at Harvard at the end of 2014 and her contributions resulted in the publication of two research papers. Subsequently, UCSI sent its top engineering students to Imperial College London for research.

"The selection of our medical students by Harvard shows how far UCSI has come as a university," said UCSI Vice Chancellor Senior Professor Dato' Dr Khalid Yusoff. "The first student we sent to Harvard was happy with her experience. More importantly, her supervisors are delighted with her contributions.

"We have provided a scope for our students to perform at the world's best universities and it's gratifying to see them making an impact through the advancement of science. We will continue engaging—and aligning ourselves with—leading universities from around the world to provide our students with more opportunities."

Presently, UCSI is the first and only private university in Malaysia that provides such opportunities for students. More two-way arrangements with the world's best universities will be announced in 2016 as UCSI celebrates its 30th anniversary.

Moscow Aviation Institute first to sign satellite deal with Skolkovo

Russian Federation – On December 23, 2015, Skolkovo Foundation held a meeting of the friends of the space technologies and telecommunications cluster, whereby a cooperation agreement was signed between

Moscow Aviation Institute (National Research University), aka MAI, and the Center for Orbital Launches "Skolkovo".

The subject of the agreement is to implement the launch of a small

spacecraft of MAI production as a payload together with the Progress-MS on the launch vehicle "Soyuz-2" through the Center for orbital launches "Skolkovo". The start is scheduled for October 2016.

The general director of the Center for orbital launches "Skolkovo", Alexey Belyakov, said that MAI is the first university with which Skolkovo has concluded such an agreement.

MAI trains engineers not only for aviation but also in the field of rocketry. On the one hand, the chance given to MAI team of researchers to send a student satellite into space is not unique, as MAI is traditionally engaged in these issues and has already launched seven university satellites. But it is certainly a landmark event, and each launch of similar spacecraft is a great responsibility for the university.



Signing of the cooperation agreement between Center for Orbital Launches "Skolkovo" and Moscow Aviation Institute (National Research University). General Director Aleksey Belyakov (left) and MAI Acting Rector Alexander Rozhdestvensky (right). Photo credit: Sk.ru

First time in Russia, International Olympiad on Informatics



Russia Federation – Talented young programmers from all over the world will take part in the XXVIII International Olympiad on Informatics (IOI) in Kazan from August 12–19, 2016.

During the 2012 Olympiad in Italy, the International Committee decided to hold the XXVIII International Olympiad on Informatics in Russian Federation in Kazan. Despite its 25-year history, this authoritative and large-scale competition has not been conducted in Russia before.

This intellectual contest will take place on the premises of Kazan Federal University (KFU). KFU combines

rich scientific traditions and new educational technologies and the IT sector is one of the priority directions of its development.

International Olympiad on Informatics for school students has been held under the auspices of UNESCO since 1989. It is the most prestigious annual competitive programming competition for secondary school students.

Young talents from about 85 countries are involved in this seven-day competition. Each participating country sends a delegation of four contestants. The program includes the opening and closing ceremonies, a practice round

and two rounds of the competition. There are also forums, conferences, round tables and excursions to cultural and historical places.

The IOI gold medal winners are considered to be the best young computer scientists in the world. The Olympiad is well known in IT industry. It is no secret that many winners of this prestigious competition later become the main driving force of software companies.

The primary goal of the IOI is to stimulate interest in informatics and information technology and develop school programming.

Lingnan the only Asian university to help drought-hit Ethiopian farmers



Prof Alex Wong, PhD student Haftom Bayray Kahsay and members of the local fieldwork team conducting household surveys in a rural township in Ethiopia

Hong Kong – In early 2015, a teacher-student partnership from Lingnan University's Department of Economics initiated a challenging project which involves adding a weather insurance product in North Ethiopia's social security network to alleviate their farmers from poverty.

With an impressive research proposal, the partnership was awarded a €300,000 research grant by WOTRO Science for Global Development under the Netherlands Organisation for Scientific Research (NWO) to conduct a two-year study on "The Cost Effectiveness of Integrating Weather Index Agricultural Insurance into the

Productive Safety Net Program in Ethiopia".

Among the seven awardees, Lingnan University was the only university in Asia whose research proposal was funded by NWO. The other six came from the Netherlands, the UK and Switzerland. "In many developing countries, rural farmers are highly vulnerable to weather risk. Without access to insurance, they often adopt vigilant farming behaviors which further affect their harvest, income and livelihood," said Assistant Professor of Economics Alex Wong. With degrees from University of California, Los Angeles, and Stanford University, Prof Wong has extensive research experience in development and agricultural economics.

On the other hand, PhD student Haftom Bayray Kahsay from Mekelle University in Ethiopia is working on his PhD topic relating to risk, poverty and the impact of agricultural weather index insurance. The teacher-student partnership was glad to have received the prestigious grant.

During the two-year research studies, the Lingnan partnership leads a

consortium of research units including Wageningen University, Mekelle University, Columbia University, The Relief Society of Tigray and Nyala Insurance to provide policy recommendations on the use of agricultural weather insurance as an additional component in Ethiopia's safety net program. Following the first site visit to 32 rural villages conducted by Mekelle University, the Relief Society of Tigray and Nyala Insurance in late August and September 2015, Lingnan University and Columbia University analyzed the data collected and started the first-round development of the weather index insurance product. Their plan is to provide insurance product in April and evaluate its effectiveness in June, the sowing month, and October, the harvest month.

Over the years, Lingnan University's faculty and students have contributed to the local and international community through original research and knowledge transfer. Their knowledge transfer project areas span from informing public policy, revitalizing heritage, raising professional standards, promoting arts and culture to building social understanding.



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26

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40

% of all courses
delivered in English



1

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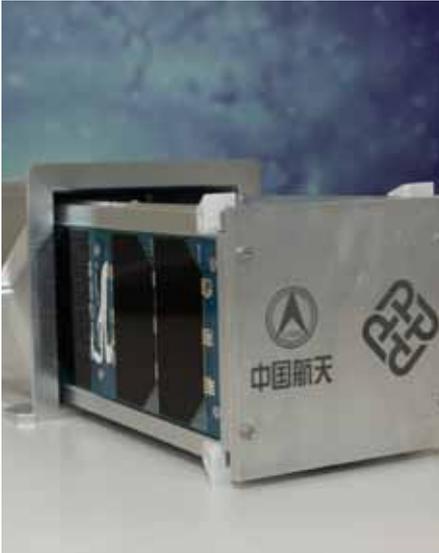
Number of
international partner
universities



4,023

International students
on campus

PolyU's microsatellite platform follows rocket launch into space



"Kaituo-1B" microsatellite

Hong Kong – On September 20, 2015, China successfully launched the "20 satellites in one rocket" of Long March 6. In this historical mission, The Hong Kong Polytechnic University (PolyU) contributed by jointly developing a microsatellite platform and a deployment system with Aerospace Dongfanghong Development Ltd, Shenzhen, China.

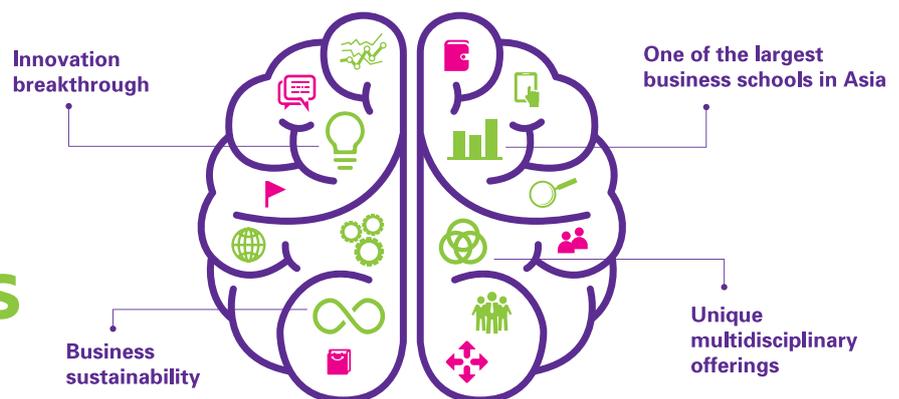
Led by Prof Yung Kai-leung, associate head of PolyU's Department of Industrial and Systems Engineering, a research team designed the microsatellite platform and deployment system which were installed in the "Kaituo-1B" microsatellite. Being the first such space device developed by Hong Kong, the invention has advantages, including low-cost, light-weight, easy-to-assemble, simple-to-manufacture, reusable in ground tests and spaceflight proven.

On the day of the rocket launch, "Kaituo-1B" piggybacked on its mother satellite "Kaituo-1A" and was separated at a 500-km altitude to perform a series of verification tests and experiments in space. Among those experiments was the "Integrated Experimental Payload" designed by Dr Cheng Ching-hsiang, assistant professor at the Department of Industrial and Systems Engineering, and his team. The objective was to monitor ground images, space particles and chamber environment. The designed life span of "Kaituo-1B" is three months. It is expected that "Kaituo-1B" will de-orbit eight years later and return to the atmosphere without creating any space debris.

The success of "Kaituo-1B" with PolyU-developed microsatellite technology will simplify the procedures and reduce the costs of future space research experiments. Researchers are no longer required to spend enormous resources on small-scale space experiments. They only need to design their own experiment modules and load them on a microsatellite for launching into the space. The technology will bring benefits to a wide range of disciplines, including the aviation, pharmaceutical and advanced material industries as well as the education sector.

This partnership project is another notable aerospace collaboration between Hong Kong and the Chinese mainland. Looking ahead, PolyU will further optimize the microsatellite platform's design, simplify its usage as well as reduce its weight and development cost. The university will also work with industries and education institutes to facilitate low-cost space experiments with the use of PolyU's novel inventions, thereby bringing space technology closer to the general public for civilian applications.

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Breakthrough epilepsy treatment transforms lives



Prof David Liley and Glenda Saade

Australia – Glenda Saade suffered her first epileptic fit at 23. For the next 30 years, seizures major and minor were a frequent and disturbing part of her life. Worse, almost, than the physical pain they caused was the anxiety about when the next one might strike, and how serious it would be.

In January, Glenda had surgery guided by a revolutionary technique being developed at Swinburne University of Technology. Eight months on she is seizure-free, has cut her medication, travels independently and is looking forward to getting her driver's licence back.

The still-mysterious realms of the human brain that cause the physical and emotional distress of an epileptic seizure are being laid bare and the condition surgically arrested, thanks to painstaking application of a novel imaging technique by Swinburne scientists.

The technique uses a non-invasive way of reading and measuring the magnetic signals generated by brain activity, and locating their source, which is called MEG, or magnetoencephalography. It was discovered in the 1960s, but recent advances have turned it into one of the safest and most powerful tools for interpreting brain function. Used in combination with electroencephalography (EEG), MEG is opening a new window into the processes and the precise location of the electrical storms that trigger an epileptic event.

In collaboration with neurologists Dr Chris Plummer and Professor Mark Cook, neurosurgeon Associate Professor Michael Murphy and imaging specialist Simon Vogrin of Melbourne's St Vincent's Hospital, Professor David Liley

of Swinburne's Brain and Psychological Sciences Research Centre is using MEG/EEG to locate and help plan surgical treatment for patients with focal epilepsy. The condition affects about 40% of all epilepsy sufferers, about 100,000 Australians, and is caused by an electrical storm that emanates from a single point in the brain. So far the team has successfully pinpointed and surgically removed the source of the trouble—usually a bundle of nerve cells less than five millimeters across, buried deep within the brain—in five patients.

For the patients, the treatment is life-changing. "It's incredible. I can't tell you how good it feels not to have to worry about the next seizure," says Ms Saade, who once burned her hand painfully on the gas stove when she collapsed while cooking dinner for her family.

The advance offered by MEG/EEG is groundbreaking in two ways. Before it, the only way a surgeon could locate the source of the problem was to open a patient's skull and insert long, delicate needles into their brain. Now the MEG helmet—which resembles a large hairdryer—sits on the patient's scalp, without any need to open the cranium. This halves the need for surgery, reducing time, cost, and stress on patients.

MEG measures brain magnetic activity in femto-tesla, signals so faint they are a mere fraction of the power of a normal household magnet, requiring the subject and equipment to be shielded in a special chamber to avoid interference from ambient magnetic fields.

No other imaging method can match its precision. It enables the surgeon to delicately excise abnormal cells without risking damage to surrounding brain tissues vital to functions such as walking, sight, speech or hearing. The team is now using the method to improve recovery prospects for more than 70 patients.

"Australia has 10,000 to 12,000 new cases of epilepsy diagnosed each year," he says. "Around 4,000 to 5,000 of those are focal epilepsy cases, where the condition arises from a single point within the brain. We can now state with some confidence that we have a method that can make a profound improvement in the lives of many of these people."

Taipei Tech student wins Olympics gold medal in technical skills



Taiwan's medal winners at the 43rd World Skills Competition

Taiwan – The World Skills Competition has been held every two years since 1950. It is the biggest skill competition on earth with over 60 participating countries and is known as the Olympics in Technical Skills.

The 43rd World Skills Competition was held in Sao Paulo Brazil. The Chinese Taipei team was awarded five gold medals, seven silver medals, and five bronze medals. Its performance was ranked 3rd in 63 participating countries, being the best result for Taiwan representatives so far.

One of the gold medals was earned in the field of refrigerating and air conditioning. The winner, Pei-Hao Juan, is a student from the Department of Refrigerating Air-Conditioning Engineering at Taipei Tech.

Hong-Ping Cheng, chair of the Department of Refrigerating Air-Conditioning Engineering at Taipei Tech, noted that Pei-Hao Juan decided to participate the World Skills Competition in his second year. In order to support Juan, Ching Song Zhuo, professor at Taipei Tech, and Chian Yu Lin, teacher at Taipei Municipal Nangang Vocational High School put together a training team to assist Juan in perusing his dream.

Juan noted that it was common for him to be trained in an over 35 degree Celsius environment. During the 11-month training, Juan always told himself that one could only achieve more by devoting more. It was this hardworking spirit that helped Juan to become national champion and won the first gold medal in refrigerating and air conditioning field of the World Skills Competition for Taiwan.

Leehter Yao, president of Taipei Tech, noted that students should learn from Juan's experience and get out of their comfort zone to reach for the stars. Dreams do come true when you carry through firmly to the end.

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Entrepreneurship project that won a national award



Old Ho and his champions

Taiwan – Old Ho is a farmer who has a dream of sharing his delicious, with the public. Six ambitious students majoring in Marketing and Distribution Management at NPTU helped an old farmer, Old Ho, sell his natural and inexpensive produce to the public at large. Dean Chi-Hsing Tseng of the College of Management was the one who bridged the gap between the hopeless Old Ho and her enthusiastic six students.

According to the SWOT analysis, Dean Tseng's team determined that the best

way to raise young people's awareness of Ho's products would be to create an internet presence for him. So the six students constructed a page for him on Facebook called "Let's Nature", using nature as a verb to highlight the natural spirit and organic qualities of Ho's produce.

On the "Let's Nature" page, the students chose to use a black dog named Happy (in Chinese, "black" sounds like "happy") as a product spokesman, telling heartwarming stories about how the farm products

are cared for and manufactured. Happy is a stray crippled dog taken in by Ho and treated with great care and respect.

The six students have been devoting themselves to managing the "Let's Nature" page, inspiring more people to read, "like", and "check in" by making micro films to introduce Ho's Farms. In these micro films, actors and actresses talk candidly about Ho's farm products and help familiarize the viewers with them. Moreover, the six students periodically post information about how to use Ho's products to make people healthier. They also help Ho process internet orders, not only learning internet selling skills but also making their first bucket of gold out of the sales in the process.

These six students have helped Ho promote his farm products to young consumers and have also made themselves some money. What is even more thrilling is that they used this case to write a campus entrepreneurship proposal and won the second prize in the national campus entrepreneurship competition.

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For the full story visit www.newcastle.edu.au/innovate



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Light pollution a threat to annual coral spawning



An Acropora millepora colony releasing gametes during broadcast mass spawning

Australia – University of Queensland (UQ) research has pinpointed artificial light as a threat to coral reproduction, in a discovery that will help guide reef and marine ecosystem protection plans.

UQ Global Change Institute researcher Dr Paulina Kaniewska said work at UQ's Heron Island Research Station revealed that the Great Barrier Reef's annual coral spawning was dependent on an intricate mix of conditions, with moonlight playing a vital role. "The introduction of artificial light competes with moonlight and can prevent corals from spawning," she said.

Dr Kaniewska said the research provided insight into how corals fine-tuned and coordinated the release of eggs and sperm into the water for fertilization.

"Even though corals don't have a brain, they have a spread-out nervous system that allows them to transmit signals in response to sensing changes in light conditions on a cellular level," she said. The study suggests that the release of sex cells in corals is triggered by a protein similar to the photosensitive melanopsin molecule. "In mammals, melanopsin plays an important role in synchronizing circadian rhythms with the daily light-dark cycle."

She said the research resolved long-standing questions about how corals synchronized the mass release of sex cells with the phases of the moon or bio-rhythms.

"Effects of light on the timing of spawning are so important because sexual reproduction is vital to reef survival. This research suggests that urban light pollution from excessive artificial light can be a real threat to coral reproduction," she said.

Dr Kaniewska and colleagues exposed the coral *Acropora millepora*—one of the dominant coral species that make up the Great Barrier Reef—to different light treatments and sampled the corals

Minin University modernizing pedagogical education in Russia



Russian Federation – Minin University of Nizhny Novgorod, Russia, has created a unique bachelor program of special needs education which fits into a greater framework of modernizing pedagogical education in the country, a big endeavor led by Russian Education and Science Ministry.

For several reasons, the project proved to be highly relevant for the pedagogical education in Russia. First, it is the lack of variability regarding the ways to obtain such education. This leads to absent competencies of school teachers who are to provide comprehensive care for the children with disabilities. There is a big demand for specially trained staff able to embrace a wide range of activities outside of school, underlining the necessity of creating a viable system of special and inclusive education. However, the opportunities for the students of non-pedagogical specialties to master special needs education programs were severely limited.

The main principles of the new program were: professionalization of teacher education; multiple options of "entering" the profession; and academic mobility of students in the network environment mode. The program leaders started creating a change team, then stating problems and identifying high priority SMART objectives. After having chosen the network environment as a key feature of the implementation model, they proceeded creating content and services. More than a third of the university professors as well as 36 institutions of secondary vocational and general education of

different Russian regions participated. Testing of the ready modules was conducted together with four leading pedagogical universities of Russia. 536 future teachers who were specializing in 19 subject areas enjoyed the training on new modules. The quality assessment system included student satisfaction monitoring; assessing student portfolio achievements; scoring and rating evaluation system and an independent assessment system of educational results.

The university staff considered the participation in the project as a new stage of their professional development. However, the wow factor of the project was immediate embedding its results into the programs of the university itself. New educational products were created providing innovative logistics of the educational process. The developers found effective approaches to the educational modules content creation using the ICT environment for teacher-student interaction. The students could test the acquired knowledge and skills within the s.c. "clinical practice base institutions" (special needs schools, rehab centers etc). They had the opportunity to construct their individual educational route, designing their personal and professional success while improving their hard and soft skills.

All materials were reviewed by independent experts and approved by the Russian Ministry of Education and Science. Recently, Minin University received a special diploma from the Ministry, certifying high recognition of project results.

before, during and after spawning.

"The annual coral spawning on the Great Barrier Reef is a spectacular synchronized reproduction event where changes in water temperature, tides, sunrise and sunset and the intensity of the moonlight trigger large-scale mass spawning of hundreds

of coral species over several nights. The egg and sperm cells combine and develop into larvae. These settle back on the reef to form new coral colonies. Many different coral species commonly spawn simultaneously to improve their chances of success," Dr Kaniewska concluded.

Kaohsiung Medical University

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- ★ 2015 QS World University Rankings by Subject
Medicine: TOP400



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UTP first among the private universities to receive MYRA six-star rating



Malaysia – Universiti Teknologi PETRONAS (UTP) has been awarded a six-star rating for its research, development and commercialization efforts by the Malaysia Research Assessment, or MyRA. It is the first private and a non-research university in the country to receive six stars—the highest performance level for its research excellence.

The university was assessed for its research and innovation achievements in eight different areas, namely the quantity and quality of researchers; the quantity and quality of research; number of postgraduates; quality of postgraduates; innovation; professional services and gifts; networking and linkages and support facilities.

UTP Vice Chancellor Datuk Ir (Dr) Abdul Rahim Hashim said participating in various rating and ranking initiatives was part and parcel of the university's efforts to improve its standing and branding as a reputable provider of higher education services and credible partner for research.

“Such participation enable us to position ourselves vis-à-vis our peers. They also help us to understand where our strengths and gaps are, which will allow us to address them appropriately for continuous improvement,” he said.

Apart from the six-star rating, the university has attained prestigious national and international recognitions in less than two decades since its establishment.

One of its most significant achievements was breaking into the top 200 of the 2014 QS World University Rankings by Subject for chemical engineering, a success that was repeated in 2015.

The institution climbed up the ranks to be among the top 160 universities in Asia under the QS Asian University Rankings making it the only private university in Malaysia to attain such distinction.

UTP's accomplishments include an overall four-star rating from QS in 2014 as well as receiving five-star awards in the areas of employability, facilities, internationalization, inclusiveness and innovation.

Negotiating the future of planet Earth

Australia – “There is no Plan B for action, as there is no Planet B,” once said United Nations Secretary General Ban Ki-moon. In the lead-up to December's COP21/CMP11, an annual meeting between nations which have vowed to take action on climate change, this statement weighs heavier than ever before.

Dr Sheila Nguyen, director, Master of Business (Sport Management) at Deakin Business School, had been invited to present on how sport can positively impact the environment at global climate summit at COP21 on behalf of the Australian and New Zealand sport sector—an area that is often considered ‘resource intensive’ in its use of water, energy, and materials.

“This year's conference has been hailed crucial for its objective to come to a renewed global agreement aimed at stabilizing atmospheric concentrations of greenhouse gases and keeping global warming below 2°C,” said Dr Sheila.

“In order to contribute towards this common goal, it is my hope that we share our stories to firstly increase awareness around the Australasian sport industry's good work in environmental stewardship, and secondly to be considered a valued stakeholder in the wider climate change effort and

conversation,” she added.

A LEED Green associate and the co-founder and executive director of the Sports Environment Alliance, a not-for-profit focused on strengthening the connection between sport and recreation with the natural environment, Dr Nguyen first discovered her passion for the environment when she was eight years old.

“At that young and impressionable age I was greatly inspired by the ‘enviro-consciousness’ of my best friend's parents and since then have always had an underlying passion, which had its coming out in the research domain where I started exploring how high-profile industries, like sport, can use their star power to influence social attention,” Dr Nguyen says.

She explains that research findings support the notion that higher-profile entities have proportionally bigger expectations and thus, responsibility to influence and make decisions that improve their communities. She adds that environmental leadership is one such way to do so.

“The planet needs all hands on deck and the sport industry can quickly mobilize a mass of fans, spectators, participants to back a movement that

impacts everyone's lives, not to mention, protecting our natural assets is business prudence.

“Without water, energy and materials, we cannot deliver key components of our business—participation, entertainment and employment. The sport industry needs to move the environment up the agenda.”

Dr Nguyen also argues that across the board, the sporting industry actually isn't particularly more environmentally offensive than other businesses per se. Even more so, she says that “sport can and should use its star power to influence social attention towards environmental sustainability.”



Malaysia's first academic collaboration on flavor and fragrances

Malaysia – With industry increasingly becoming the customer and partner of higher education, Universiti Malaysia Pahang (UMP) is deepening its partnership and pedagogy with industry based on learning and internships.

The Bioaromatic Cluster of Flavour and Fragrances serves to increase the productivity with which Malaysia can compete globally in this sector. UMP is associated with the Bioaromatic Cluster in Pahang which is an ecosystem of interconnected businesses, suppliers, and associated institutions through a number of initiatives within the State of Pahang and beyond.

An aroma compound is a chemical compound which imparts scent or odor such as volatile ingredients or essential oils usually derived from plant parts, plant exudates, herbs and spices. They play the essential role in the flavor (food) and fragrances industry to increase the appeal of products. The Bioaromatic Centre of Excellence comprises a team of researchers of multidiscipline focused on developing and upscaling production of high value

aroma compounds using fermentation technology. This initiative is realized through collaboration with Swiss-based company, Evolva Holdings SA and facilitation by Malaysian Biotechnology Corporation (BiotechCorp).

The Pahang Bioaromatic Park is an agrobiotechnology initiative realized in collaboration with the East Coast Economic Development Corridor (ECERDC) and facilitated by BiotechCorp on a 72.8 ha land in Maran (Pahang). This initiative focuses on research and commercialization of essential oils and high value herbs propagated within the Park. The initiative is targeting research plots and contract farming of patchouli (nilam) as its inaugural high value herb. This initiative is also expected to also utilize abandoned agriculture land around the State of Pahang.

Grasse in France is regarded as the world's perfume capital. Grasse produces over two-thirds of France's natural aromas for the industry worth over USD65 million annually. The 12 main industry leaders on flavor and fragrances generate over USD20 million

annually. UMP's third initiative within the bioaromatic framework is the collaboration with the world renowned Grasse Institute of Perfumery (GIP) and BiotechCorp.

Many "Noses" or "Les nez" (French) are trained in Grasse to distinguish over 2,000 kinds of scent. GIP training requires developing the fundamental knowledge of creating a perfume using traditional and modern techniques. Tailor-made academic and training programs will be established in this collaboration which will carry certification by both UMP and GIP, with UMP as the training center outside of France.

This is Malaysia's first academic collaboration on flavor and fragrances with GIP. The initiative is expected to produce local and regional talents to drive the flavor and fragrance industry. It is also expected to realize Malaysia's potential in becoming ASEAN's main hub in the formulation of signature fragrances especially for the halal market, while further boosting the bio-economy of the country.

World-record pressure was achieved using NUST MISiS supercomputer

Russian Federation – Through the application of quantum mechanical modelling calculated with the use of computational capability, the Laboratory for the Modeling and Development of New Materials laboratory (NUST MISiS) research team, led by visiting professor Igor Abrikosov (Linköping University, Sweden), theoretically substantiated the results of a unique experiment conducted earlier by Bayreuth University (Germany) scientists on metallic osmium compression under the extreme pressure of more than 7.7 million atmospheres.

The goal of the German colleagues' experiment was the examination of crystallographic structure changes under ultra-high pressure. Osmium was selected as a test material because it possesses properties such as high-density under normal pressure, one of the highest cohesive energies and melting temperatures, and very low compressibility similar to a diamond.

During the experiment a world scientific record was achieved when an extreme pressure under static compression measurement of 7.7 million atmospheres was reached. The previous record

was 4 million atmospheres (400 GPa). State-of-the-art equipment was used in the project: an ultra-high pressure installation developed by Bayreuth University, synchrotrons by APS (USA), ESRF (France), and PETRA III (Germany) and supercomputers from Sweden and France.

The world-record pressure was achieved through the implementation of micro-hemispheric nano-diamonds, which is an additional step when compared to the traditional method of diamond anvils. This development allows an extension of the pressure range in experiments on statistic compression to achieve pressure above 750 GPa (twice as high as the Earth's core pressure). The study has revealed the unprecedented structural stability of osmium. With an enormous pressure of about 770 GPa, it has the same structure as atmospheric pressure. At the same time, precise measurements of X-ray diffraction showed that the behavior of the lattice parameter when pressurized exhibits features not described in theory.

The theoretical underpinning and description of these features were the



NUST MISiS supercomputer ranks among the 50 top supercomputers in CIS countries. The peak capacity of the cluster is 33 teraflops or 33 trillion operations per second

goals of the NUST MISiS research team. The research on different material behavior is significant for both fundamental physics and industry. Understanding the physics and chemistry of materials under high pressure helps to simulate the processes which occur in giant planets and stars, and also to synthesize materials that are used under extreme conditions.



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LPU Cavite:

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NATIONAL ACCREDITATION - PAASCU AWARD

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- 2014 Employer of the Year Finalist by (PMAP)

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Power of peels and petals!



Graduate Research Scholar Roshan Kumara working on fruit peels' ability to act as natural sensitizers for Natural Dye Sensitized Solar Cells. Photo credit: Abu Hurairah Hj MohdClinton

Brunei Darussalam – UBD researchers have made yet another remarkable discovery of the ability of fruit peels to act as natural sensitizers for Natural Dye Sensitized Solar Cells (DSSC). This discovery is an important milestone in the study of new energy resources that is certainly of much need and use for the nation to diversify its economy.

The project on “Optimization of Natural Dye Sensitized Solar Cells (DSSC)” is a multi-disciplinary collaboration between biodiversity and energy studies by Dr Lim Chee Ming from the Centre for Advanced Material and Energy Sciences (CAMES), Dr Piyasiri Ekanayake, a senior lecturer in the Department of Physical and Geological Sciences at Faculty of Science (FOS), and Pg Dr Mohd Iskandar Pg Hj Petra, dean

of Faculty of Integrated Technologies (FIT), along with Graduate Research Scholar (GRS) Narayana Thotagamuge Roshan Nilantha Kumara (N.T.R.N. Kumara).

The group of multidisciplinary researchers identified some local and regional fruits to have peels proven to be a potential natural sensitizer for Natural Dye Sensitized Solar Cells (DSSC). The fruit peels could be a cost-effective and eco-friendly alternative to commonly used synthetic and artificial dyes such as Ruthenium.

DSSC is a relatively new global research campaign on the use of low-cost solar cells that shows great promise for its low-cost materials, its simplicity and for being eco-friendly. DSSC functionality can be described as the interaction between the anode, the cathode, and the nanoparticles of metal oxide conductors such as titanium dioxide, which are coated with a light-sensitive dye and surrounded by an electrolyte. The anode, being a transparent surface that allows light into the cell, makes it possible for the dye-coated nanoparticles to convert the photons (light) into electrons (electricity). Since different color dyes absorb different wavelengths of light, and hence carry different amounts of energy, the choice

of the optimal dye to use as sensitizers in solar-cells is a very important one.

In one experiment, a DSSC was sensitized with the pigment extracts of a local fruit known as kembayau (canarium odontophyllum) that has a photo-energy conversion efficiency of 1.43%, proving its suitability as a sensitizer in DSSCs. A special combination of kembayau with ixora flowers gives 1.55%. The research group also experiment on other tropical fruits and flowers such as Melastoma malabathricum, locally known as kuduk-kuduk (1.16%) and black tea waste extracts (0.46%).

Another similar experiment involved the use of Rambutan fruit (scientifically known as Nephelium lappaceum), which showed enhanced performance of Dye Sensitized Solar. The results of these findings were published in the Journal of Solar Energy Engineering in 2013, and in the renowned Journal of Chemistry in 2014.

As the techniques and equipment from this research are patented, potential researchers are looking to further their exploration on DSSCs using fruit peels and flower pigments to enhance knowledge on local and renewable energy resources.

World's first wearable device for pathological tremor suppression in the making



Team TAME at Best IT Innovation Awards (BITA) 2015

Pakistan – Around 280 million people worldwide suffer from a neurological disorder symptom which causes involuntary rhythmic shaking of various parts of the body, most commonly the hands. Severely

affected people may find it difficult to independently perform daily tasks like eating, drinking, dressing, etc. While many studies have been conducted to find the root cause of this condition, no definite cure has yet been established. However, those affected by tremor may see a solution to their suffering with the introduction of a device called Tremor Acquisition and Minimization (TAME).

Developed by a team of students from National University of Sciences and Technology (NUST), TAME describes itself as the world's first wearable device for pathological tremor categorization and real-time suppression. As a non-invasive, tremor suppression device, it gives tremor patients the freedom to perform their daily routine tasks with ease and control.

While TAME facilitates tremor patients by acting as a complete treatment and diagnosis solution in the form of a user-friendly, easily manageable, wearable device which connects to cloud storage for easy management and sharing of diagnosis files.

The team behind this breakthrough technology, comprising three students from NUST School of Electrical Engineering and Computer Science (SECS) working under the supervision of Dr Syed Muhammad Raza Kazmi, recently won the Best IT innovation Award 2015, with a cash prize of PKR 1 million. According to Dr Kazmi, the device is under development as a Final Year Project (FYP) which will culminate by May 2016, with the first prototype planned to be tested in about a month's time.

Industrial design course that is not for “girls who do pink designs”

Australia – An interdisciplinary team at the University of Canberra, Australia, is mid-way through a unique research consultancy project with the University of Dammam in Saudi Arabia. The project aims to contribute to education in general, and, in particular, to women’s education in Saudi Arabia. The first phase of this project was to develop a curriculum for the first female only Bachelor of Industrial Design in Saudi Arabia, at the University of Dammam’s College of Design.

The College of Design is a female-only college, founded in 1975, and offers Bachelor degrees in Design education. Design education at the college is closely tied to the cultural context of the Arab and Islamic society while simultaneously exposing students to the latest global trends and technologies.

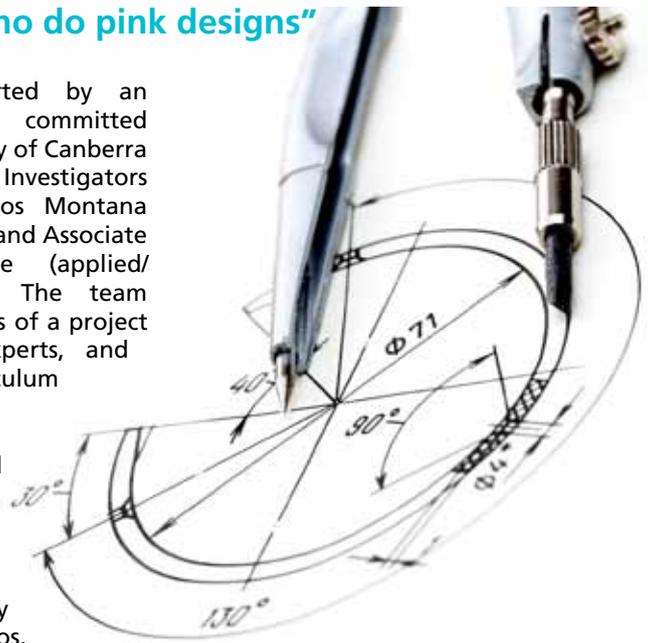
Building on the University of Canberra’s industrial design course, which started in 1974, the project required research into current design education, industrial design curricula and cultural aspects of design education within female-only courses in the Islamic culture. The main challenge of this new course is addressing local and national industries, namely Saudi Arabia’s petrochemical industry, with an international perspective. This balance, along with the cultural context of this project, is a key point of difference for the college

The project is supported by an enthusiastic and committed interdisciplinary University of Canberra team comprising Chief Investigators Associate Professor Carlos Montana Hoyos (industrial design) and Associate Professor Elke Stracke (applied/educational linguistics). The team also draws on the services of a project manager, curriculum experts, and industrial design curriculum writers.

After an extended period of initial planning, one of the first steps in the project was a visit to the University of Dammam in mid-February 2015 by Carlos Montana Hoyos.

In addition to visiting the college to assess existing resources (including infrastructure and current staff), he visited local industries as the college is building up its contacts and examining potential employment opportunities for future graduates.

The collaborative design process included consultations with Saudi Arabia staff and future students about the focus of the program. There was a strong demand for a scientific and technological approach, similar to an industrial design-engineering program, with the focus of 50 % engineering, 30% business, and 20 % arts. This is because of the technological focus at Dammam, as well as the determination



of the female students to position themselves as strong professionals, able to work in both local and global industries. As commented by a female staff member, they don’t want to be perceived as “girls who do pink designs”.

The first cohort of female students has now started studying Industrial Design at Dammam. The University of Canberra team will continue to support Dammam through concurrent research projects. This project has been an exciting journey and is opening new educational, professional and business opportunities for females in Saudi Arabia.

Ritsumeikan University professor receives Minister of METI Award

Japan – Dr Gang Xu, professor at College of Information Science and Engineering (CISE), Ritsumeikan University (RU), was awarded the 13th Minister of Economy, Trade and Industry (METI) Award for Industry-Academia-Government Collaboration in the 2015 academic year.

This award was for his achievement in successfully commercializing 3D-robot-vision-sensor series called TVS, developed and commercialized by a spin-off, 3D MEDIA Co Ltd, founded by him based on his expertise in computer vision. The co-winner of this award is Mr Tomohiro Nakamichi of the same company, an RU graduate. The product has a market share of over 70%, being

used in a wide range of industries: automotive, food, building material etc.

“I am so proud of this recent achievement by my colleague Dr Xu,” said Prof Yoshio Nakatani, dean of CISE.

“CISE promotes transferring research findings to industry and also has a number of faculty with industry background or having strong ties with industry. Currently, we have a graduate program in English, but plan to start an international Bachelor of Engineering program in April 2017, where both domestic and international students have opportunities to learn IT together in English from experts.”



Dr Xu in front of his award winning TVS set

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In 2014, UM was elected the president of the Association of Portuguese Speaking Universities (AULP). The Times Higher Education (THE) has ranked UM No 39 among the world's top 100 young universities. UM has established partnerships with over 200 academic institutions in order to provide students with horizon-broadening international experiences.

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Nanyang Technological University (NTU Singapore) is a young and research-intensive university. It is ranked No.13 in the world by Quacquarelli Symonds (QS) and is also named the World's Fastest-rising Young University by Times Higher Education (THE). Helmed by Professor Bertil Andersson, winner of the Wilhelm Exner Medal, an honour bestowed on the world's best scientists, NTU is a melting pot of international

award-winning scientists, young talents and eminent global partners such as BMW and Rolls-Royce. It is No. 1 among top Asian universities in terms of normalised research citation impact (Thomson Reuters InCites 2015). With its state-of-the-art facilities, NTU has strengths in interdisciplinary cutting-edge research that improves lives and shapes the future. NTU also has a joint medical school with Imperial College London.



NTU Singapore scientists unveil social and telepresence robots



Professor Nadia Thalmann (right) shaking hands with Nadine, a social robot developed by scientists at NTU Singapore

Singapore – Say hello to Nadine, a “receptionist” at Nanyang Technological University, Singapore (NTU Singapore)! She is friendly, and will greet you back. Next time you meet her, she will remember your name and your previous conversation with her.

She looks almost like a human being, with soft skin and flowing brunette hair. She smiles when greeting you, looks at you in the eye when talking, and can also shake hands with you. And she is a humanoid.

Unlike conventional robots, Nadine has her own personality, mood and emotions. She can be happy or sad, depending on the conversation. She also has a good memory, and can recognize the people she has met, and remembers what the person had said before.

Nadine is the latest social robot developed by scientists at NTU Singapore. The doppelganger of its creator, Prof Nadia Thalmann, Nadine is powered by intelligent software similar to Apple’s Siri or Microsoft’s Cortana. Nadine can be a personal assistant in offices and homes in future. And she can be used as social companions for the young and the elderly.

A humanoid like Nadine is just one of the interfaces where the technology can be applied. It can also be made virtual and appear on a TV or computer screen, and become a low-cost virtual social companion. With further progress in robotics sparked by technological improvements in silicon chips, sensors and computation, physical social robots such as Nadine are poised to become more visible in offices and homes in future.

Prof Thalmann, the director of the Institute for Media Innovation who led the development of Nadine, said these social robots are among NTU’s many exciting new media innovations that companies can leverage for commercialization.

“Robotics technologies have advanced significantly over the past few decades and are already being used in manufacturing and logistics. As countries worldwide face challenges of an aging population, social robots can be one solution to address the shrinking workforce, become personal companions for children and the elderly at home, and even serve as a platform for healthcare services in future,” explained Prof Thalmann, an expert in virtual humans and a faculty from NTU’s School of Computer Engineering.

“Over the past four years, our team at NTU Singapore have been fostering cross-disciplinary research in social robotics technologies—involving engineering, computer science, linguistics, psychology and other fields—to transform a virtual human, from within a computer, into a physical being that is able to observe and interact with other humans.

“This is somewhat like a real companion that is always with you and conscious of what is happening. So in future, these socially intelligent robots could be like C-3PO, the iconic golden droid from Star Wars, with knowledge of language and etiquette.”

Nadine’s robot-in-arms, EDGAR, was also put through its paces at NTU’s new media showcase, complete with a rear-projection screen for its face and two highly articulated arms.

EDGAR is a telepresence robot optimized to project the gestures of its human user. By standing in front of a specialized webcam, a user can control EDGAR remotely from anywhere in the world. The user’s face and expressions will be displayed on the robot’s face in real time, while the robot mimics the person’s upper body movements.

EDGAR can also deliver speeches by autonomously acting out a script. With an integrated webcam, he automatically tracks the people he meets to engage them in conversation, giving them informative and witty replies to their questions.

Such social robots are ideal for use at public venues, such as tourist attractions and shopping centers, as they can offer practical information to visitors.

Led by Assoc Prof Gerald Seet from the School of Mechanical and Aerospace Engineering and the BeingThere Centre at NTU, this made-in-Singapore robot represents three years of research and development.

“EDGAR is a real demonstration of how telepresence and social robots can be used for business and education,” added Prof Seet. “Telepresence provides an additional dimension to mobility. The user may project his or her physical presence at one or more locations simultaneously, meaning that geography is no longer an obstacle.

“In future, a renowned educator giving lectures or classes to large groups of people in different locations at the same time could become commonplace. Or you could attend classes or business meetings all over the world using robot proxies, saving time and travel costs.”



NTU social robots EDGAR 1 (right) and EDGAR 2 (left), tele-presence robots optimized to project the gestures of their human user

Donation turned into exhibition and public outreach programs



Hong Kong – The University Museum and Art Gallery (UMAG), The University of Hong Kong (HKU), this January received a collection of near three hundred artworks—paintings, seals and photographs—by the Chinese painter Tao Wan, generously gifted to the museum by the artist’s children Julia and Luke Tao. In celebration of this large and documentary gift, UMAG is organizing an exhibition, guided exploratory tours and artist workshops.

Based in the heart of Hong Kong and operating to serve both the university’s students and general public alike, UMAG reached out to the “studio” of Tao Wan to engage several of his teaching students to create a free-for-all workshop program that complements

the museum’s guided visits to the exhibition.

Tao Wan (Tao Yun, 1911–2004), courtesy name Shuya, art name Yunshan, from Panyu, Guangdong, was a master painter of his generation. Renowned for his traditional landscape paintings, he did not follow the prevailing trends of revolutionary Chinese art. He was a typical literatus, who devoted himself to painting, calligraphy and literature.

His life was simple and unadorned; he was indifferent to fame and wealth. After obtaining his undergraduate degree in law from Sun Yat-sen University, Guangzhou in 1932, he first taught at Yushan Secondary School, and later became principal of the Guangyu School.

In 1949, he migrated to Hong Kong and taught painting at a primary school until his retirement in 1975. After retiring, he taught Chinese landscape paintings for over 10 years at HKU SPACE, formerly known as the University of Hong Kong’s Department of Extra Mural Studies (DEMS), and the Department of Extramural Studies of the Chinese University of Hong Kong (CUHK) (presently named the School of Continuing and Professional Studies, CUSCS).

Tao Wan was a member of the Chinese Painting Research Society in Guangdong, and its Hong Kong branch—founded in 1926—both of which typified traditional styles of Chinese painting amidst the 20th century’s political and social upheaval, and innovation in the arts. In addition, he was a member of numerous celebrated art clubs, including the Qing You Club. The distinctive qualities of his paintings incorporated both traditional and contemporary styles, which were rendered with an agitated, dry and ragged brush.

In 1980, Tao Wan established the Wu Liu Art Studio, where he held regular elegant gatherings (yaji), as a way to inspire his students through the arts, including painting demonstrations and lectures. He was a popular teacher and he continued to teach painting after moving to Canada in 1989.

The University of Hong Kong appreciates the artist’s engagement with his students, his lifelong giving to society and promotion of Chinese art, and hopes to do its part by turning this donation into an exhibition and outreach program. It is by continuing Master Tao’s vision that the university hopes to engage increasingly younger generations and teach the appreciation of Chinese art and culture.

Cloning mammoths!



Evgenia Mikhailova, NEFU rector, with Korean partners, Sooam Biotech Research Foundation

Russian Federation – According to North-Eastern Federal University (NEFU) Department of Strategic Development, the “Mammoth Restoration” project of NEFU and Sooam Biotech Research Foundation will continue: Professor Hwang Woo Suk told about the achievements and expressed his confidence that

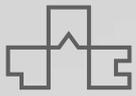
the result of mammoth cloning will be successful. On December 3, Rector Evgenia Mikhailova paid a visit to Seoul to see the progress up close.

“Dr Hwang Woo Suk showed the guests the unique laboratories and demonstrated the process of cloning in practice. His team has been cloning

police dogs, which are the best in their breed, for a long time, by order of the Governments of China, the Republic of Korea and the United States. The process has been demonstrated in the laboratory,” said the chief specialist of the Department, Nikolay Artemyev.

The “Mammoth Restoration” project will be continued with the participation of NEFU scientists within three months; Robert Markov, junior researcher at the Institute of Applied Ecology of the North, will undergo training at Sooam Foundation.

The Russian-Korean project “The Mammoth Restoration” was launched in 2012. Scientists are looking for the living cells of an ancient fossil to get material for cloning. This March, the International Center for Collective Use “Molecular Paleontology” was opened at NEFU within the frameworks of agreement on cooperation.



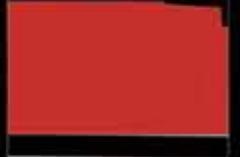
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No more pricking yourself when testing blood sugar



India – A student team of VIT University developed a non-invasive device “E-Stick” for the measurement of diabetes patients’ blood glucose. “E-stick” will save the patients from the pain of pricking themselves every time.

The team uses an infra-red beam to human body to get the data from blood. These data are processed electronically which ultimately ensures the patients and doctors about the

disease. The device can perform tests such as monofilament test, vibration threshold test, temperature threshold test, and screen Diabetic Peripheral Neuropathy (DPN).

This is a low-cost solution (around US\$100) and has the potential to reach patients of primary health centers, nursing homes and diabetic centers. The team earned the best Prize in the Innovation Challenge of “Diabetes Innovation Hackathon for introducing innovative diabetic devices”—a global competition organized by the Consortium for Affordable Medical Technologies (CAMTech)—in October 2015 at Hyderabad, India.

The team members acknowledge the support of “VIT University creation Lab” founded by Dr G Viswanathan, the chancellor and founder of the university.

The fight against antibiotic resistance



Australia – A new Cochrane Review shows that when doctors and patients are encouraged to discuss the need for prescribing antibiotics for acute respiratory infections jointly, fewer are prescribed. This may be useful in the fight against antibiotic resistance.

The Bond-led research shows shared decision making between clinicians and patients is an important part of patient-centered care. The ideal process combines the best available evidence about the benefits and harms of an intervention with the patient’s values and preferences, as part of a discussion with their general practitioner (GP) or health professional. As a result, the health professional and patient jointly make the decision about what to do next.

Acute respiratory infections such as an acute cough, middle ear infection, or sore throat are among the most common reasons to see a doctor, especially during the winter. Health professionals commonly prescribe antibiotics for these conditions, despite good evidence that they provide little benefit.

There is concern about the continued over-use of antibiotics, which has led to some bacteria becoming resistant to their effects. This means that antibiotics will no longer work to treat conditions for which they used to be effective. This development is widely considered a major threat to global health.

Professor of Clinical Epidemiology Tammy C Hoffmann, from the Centre for Research in Evidence-Based Practice, Bond University, Australia, says: “The evidence from this review shows that fewer antibiotics for acute respiratory infections could be prescribed if more patients and doctors made decisions jointly. It is important that health professionals and patients are supported to have quality conversations about the use of antibiotics so that informed decisions can be made.”

RANEPA representatives shine at international contest



Eventiada Awards – one of the largest contests of student projects in Eastern Europe

Russian Federation – Representatives of the Russian Presidential Academy of National Economy and Public Administration (RANEPA) won three awards at one of the largest contests of student projects in Eastern Europe—Eventiada Awards 2015.

Eventiada is an international contest of student and corporate projects in the fields of marketing, public relations, event management, advertisement and integrated marketing communications. In 2015, organizers received 515 proposals. Russian and foreign students, companies and agencies are invited to present their experiences and ideas.

The competition is aimed to share ideas and experience in the communication field and to establish the inter-connection between Russian and foreign universities. It also helps

to create standards of student and corporate communication projects.

Edutainment project “RANEPA Model UN” organized by the students of Russian Presidential Academy under the leadership of 3rd year bachelor student Alina Pavlova took 3rd place in the nomination “The best student project”.

First place in special category “Faculty of the Year” was awarded to the Faculty of Marketing, Advertising and Service of RANEPA’s Institute of Sectoral Management (ISM).

Alexander Vartanov, coordinator of the RANEPA extracurricular activities won the nomination “Teacher of the Year”.

Thanks to this contest, employers can attract talented students and offer them jobs after graduation.



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Refer to the Japan Student Services Organization's website for more detailed information on living in Japan.



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Cancer research proves that metastasis can be predicted



Press Conference

Taiwan – A new study, co-authored by Prof Tang-Long Shen of the Department of Plant Pathology and Microbiology and Center for Biotechnology of National Taiwan University, could prove valuable in helping doctors predict whether a cancer tumor will metastasize and to which organs it will spread. Published online by Nature on October 28, the paper “Tumour Exosome Integrins Determine Organotropic Metastasis” has been hailed by mainstream and science media around the world as a major breakthrough in the field of oncology.

For the past three years, Professor Shen has been working as a member of an international team of scientists led by

Dr David C Lyden at the prestigious Weill Cornell Medicine in New York City. The interdisciplinary team was comprised of 12 researchers from institutions in the United States, Taiwan, Spain, Portugal, Germany, Norway, and Japan.

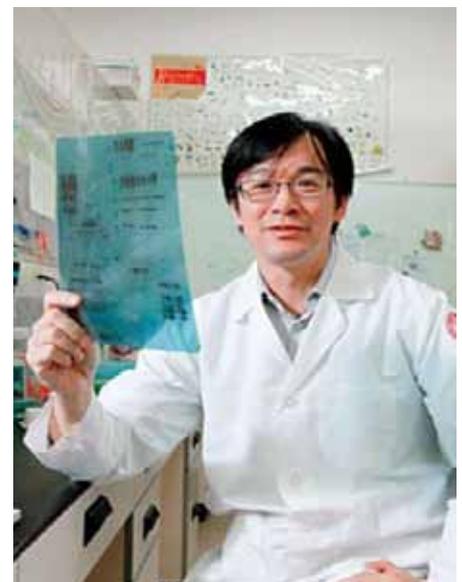
The team discovered that cancer cells secrete a large volume of nano-scale extracellular vesicles called exosomes into the bloodstream prior to metastasizing, and on the surface of the exosomes lie binding proteins known as integrins that exclusively target particular organ tissues and transfer biological molecules from within the exosomes into the targeted organs. The researchers also found that the integrins function to create microenvironments within the remote

organs, making the tissues fertile for the metastasis and growth of cancer cells even before the cancer cells spread. The team’s findings prove that tumor cells do not metastasize to random organs; instead, they move to predetermined organs that have been prepared for their arrival.

In explaining the significance of the findings, Prof Shen pointed out that this is the first investigation to provide support for the “seed and soil” hypothesis of cancer metastasis first presented by an English physician named Stephen Paget in 1889. Paget proposed that metastasis does not occur haphazardly; rather, just as seeds require soil that has been fertilized, cancer cells need a suitably prepared tissue environment to achieve metastasis and growth.

Furthermore, Prof Shen’s team discovered that, in addition to preparing organs for metastasis, each type of integrin serves to direct its exosomes to specific organs, like the zip code on a package. For instance, the integrins released by breast cancer exosomes deliver the tumor cells to the liver and lungs.

As metastasis is associated with 90% of deaths caused by cancer, the study serves as a potential gateway to discovering new lifesaving therapeutic approaches. As a result, doctors may be able to identify and measure integrins in blood samples to predict which organs might be targeted by a tumor, enabling them to initiate preventive therapies before the cancer cells have begun to spread.



Prof Tang-Long Shen

FPT ranked among “Asia 300” companies of Nikkei Asian Review

Vietnam – Nikkei Asian Review recently selected the 300 largest companies in Asia (Asia 300) including FPT and 4 other Vietnamese companies.

Asia 300 is a list of notable companies in Asia, based on market capitalization and value growth potential.

Currently, FPT has more than 25,000 employees and presence in 19 countries worldwide. In Asia, FPT appears in 12 countries, including Vietnam, Japan, Myanmar, Cambodia, Laos, Thailand, Kuwait, Bangladesh, Malaysia, Indonesia, Singapore and Philippines.

FPT, the report wrote, is the largest information technology company in Vietnam, engaged in a wide array of activities including software

development, telecommunications and the marketing of IT products. In the field of software development, FPT provides services to many foreign partners. Besides FPT, Vietcombank, PetroVietnam Gas (PVGas), Vinamilk, and Vingroup appeared on the Asia 300 report, which was released recently by Nikkei Asian Review.

Among the Asia 300, China and Hong Kong recorded 83, India 44, Korea 42 and Taiwan 40. In Southeast Asia, Singapore, Thailand, and Indonesia had 25, Malaysia 22, the Philippines 20; and Vietnam has now 5 included in the list.

In 2014, FPT was Vietnam’s sole representative in the list of the Nikkei ASEAN 100 companies.



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 - 193rd in '2015 QS World University Rankings'
 - 300,000 Alumni
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First Russian expedition of meteorite in Antarctica concludes successfully



UrFU Meteorite Expedition

Russian Federation – The First Russian Meteorite Expedition of Ural Federal University is returning home from Antarctica. Six members of expedition, Vitaliy Lazo, Mikhail Larionov, Sergey Malagamba, Ruslan Kolunin, Aleksander Pastukhovich and Andrey Korolyov, carried out successful search work in the region of the Lomonosov Mountains at the South Pole. They collected over 300 samples, two of which were identified as meteorites right in the field.

The first meteorite was found by Sergey Malagamba on December 31 after six days of the storm in Antarctica. The meteorite was later classified by Mikhail Larionov as meteorite-chondrite.

“This sample is a 100% meteorite, Mikhail has studied it and confirmed the presence of chondrules, fusion crust and regmaglypts,” says the expedition leader, Ruslan Kolunin.

The second meteorite was found by Aleksander Pastukhovich on January 2. UrFU expedition also collected about 300 samples resembling meteorites. The expedition also prepared the blocks of blue ice.

According to Victor Grokhovsky, UrFU professor and the head of the expedition, the blue ice of Antarctica contains meteorites and dust from the Moon and Mars: “Antarctica is a storehouse of space material and a variety of ores in general. There are ‘blue ice’ territories, which in fact are glaciers, rearing over rocks due to the movement of ice on the mountain slopes; they have been moving very slowly, but for millions of years. Powerful winds from the coast blow away the snow, sublimating

ice. And in these ice there are a lot of meteorite fragments, which had been reaching the surface of our planet over the millions of years; you can just go and collect them. Lunar soil is literally ‘free’ material, which is as old as our planet, and is about 4.5 billion years old. Imagine how much you can learn about the origin of the universe, life, its natural laws and, therefore, the future of our planet!”

The samples and ice blocks had been packaged and now are waiting to be shipped from Novolazarevskaya station to Ekaterinburg through St. Petersburg in April. The blue ice will be studied by the scientists of St. Petersburg Nuclear Physics Institute, Ural Federal University and their French colleagues. The samples which resemble meteorites are to be studied and classified by the team of scientists led by professor Victor Grokhovsky in the laboratories of Research and Educational Centre “Nanotech UrFU”.

UrFU meteorite expedition to Antarctic took place in the framework of the 61st Russian Antarctic Expedition. The author of the expedition project is UrFU professor Viktor Grokhovsky.

UrFU Antarctic Meteorite Expedition has been the first scientific project in the history of modern Russia aimed at search of meteoritic matter on the southernmost continent. It became possible thanks to the participation of the university in the Project 5-100. The budget of the expedition is estimated at about 12.8 million rubles, most of which sum being provided by Ural Federal University. Thanks to the efforts of the UrFU Students’ Union, 500,000 rubles were collected by means of crowd-funding; some through sponsors.

First Korean Studies MOOCs open this year



South Korea – The Massive Open Online Courses (MOOCs) taught by Yonsei faculty have proven to be quite popular both within Korea and overseas. In 2016, Yonsei will offer its first Korean Studies MOOCs, which will expose international students to the politics, economics, history, culture, and language of Korea.

According to Jeong In-kwon, dean of academic affairs, “Yonsei University is leading the diffusion of knowledge and information by affiliating with overseas MOOC platforms and establishing the Open and Smart Education Center (OSE). Yonsei will try to create a big impression internationally through its MOOCs by establishing an educational Korean wave.”

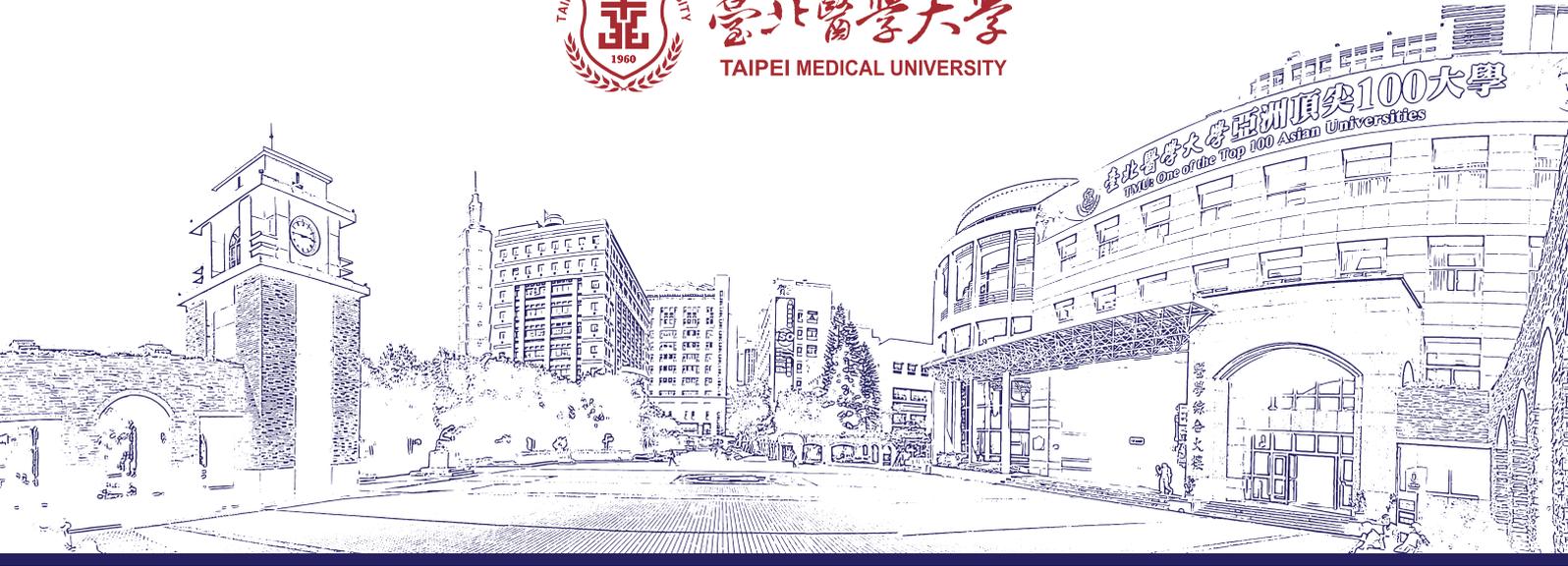
Yonsei is the only university in Korea to offer MOOCs through two different international platforms. Furthermore, Yonsei has been selected as a participating institution in the government’s K-MOOC pilot project, which is sponsored by the Ministry of Education. Between now and 2017; eleven K-MOOCs will be offered through OSE.

Currently, Yonsei offers seven MOOCs through the FutureLearn platform and another two through Coursera. For domestic learners, the university also provides several online Korean courses, or K-MOOCs.

Yonsei was selected as a winner of the Coursera Specialization Lecture RFP Contest, which recognizes the quality of MOOCs offered by a university. The award includes a US\$30,000 fund, which is being used to prepare a series of new MOOCs that will be offered in the coming semesters.



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In Universitas Islam Indonesia (UII) we strive for **perfection** through **innovation** with the perennial **values** as our points of departure.

First-of-its-kind teaching accountancy firm in Malaysia

Malaysia – On December 29, 2015, Universiti Malaysia Terengganu (UMT) signed a memorandum of understanding with Salihin Chartered Accountants, whereby they established Teaching Accountancy Firm (TAF)—a significant milestone for UMT as it is the first of its kind in Malaysia and perhaps in the world. The cooperation between UMT and Salihin is in line with the aspiration of Ministry of Higher Education (MOHE) to require public universities to work closely with industries as to strengthen its curriculum, enhance the expertise of lecturers and increase graduate employability.



Exchange of MoA between UMT, represented by the vice chancellor, Prof Dato' Dr Nor Aieni Mohktar (2nd from left), and Salihin Chartered Accountants, represented by the managing partner, Mr Salihin Abang

The concept of TAF is almost similar to that of "Teaching Hospital" which is used for training medical students. Jointly managed by Salihin and

UMT through a Joint Management Committee (JMC), TAF has five units: auditing, accounting, tax and GST, secretarial, and consultancy. Selected

students of Bachelor of Accountancy program are placed in TAF and supervised by both UMT's lecturers and Salihin's staff.

Neuroscientists from NSU discover "cold-blooded" killer gene

Russian Federation – A group of scientists NSU and SB RAS, who collaborate in the frameworks of the Federal Research Center Institute of Cytology and Genetics, have published results of their research on the genes responsible for violent crimes. The article appeared in *Journal of Criminal Justice*, a leading international journal in the criminal justice area.

This research is an example of multidisciplinary and applied approach, where disciplines such as forensic science, psychology and mental disorder studies, molecular neuroscience and medical genetics can influence one another and benefit from using methods of modern applied statistics.

Factors involved in committing a severe, violent crime can be analyzed from different angles. Neuroscientists, who study biological contributions to criminal or antisocial behavior, used to explain it by impulsive aggression developed in the criminal during the childhood due to attention deficit hyperactivity disorder (ADHD). However, research data demonstrate that a lot of carefully planned, "cold-blooded" violent murders were committed by adults with no history of ADHD. These criminals were not susceptible to impulsive cruelty

having been brought up in well-to-do families. Their aggression was "cold", carefully planned, and appeared to be linked with some forms of Dopamine receptor 4 (DRD4).

The scientists concluded that the risk variants of the DRD4 VNTR polymorphism, the 7-repeat and 5-repeat (7R and 5R) alleles might be associated with the increased occurrence of violent behavior in adults with no history of ADHD. Thus, the results support the hypothesis that proactive aggression might be a genetically-based, separate feature of personality that is independent of ADHD.

The D4 subtype of the dopamine receptor is one of the five subtypes that are prominent in the vertebrate central nervous system. The human dopamine D4 receptor was first cloned in 1991. DRD4 encodes a putative 387-amino acid protein with seven transmembrane domains. It is a target for drugs which treat schizophrenia and Parkinson disease. Mutations in this gene have been associated with various behavioral phenotypes, including autonomic nervous system dysfunction, attention deficit/hyperactivity disorder, and the personality trait of novelty seeking. In humans, D4 receptors have been identified in 16 regions of the brain

with relatively high levels of expression in the prefrontal and temporolimbic structures, as well as in retina, heart, kidney cells and lymphocytes.

The study entitled Genotype and haplotype frequencies of the DRD4 VNTR polymorphism in the men with no history of ADHD, convicted of violent crimes draws our attention to the idea that ADHD medications commonly used in western schools may not have a suppressive effect against aggressive or antisocial behavior in the society.

The Federal Research Center Institute of Cytology and Genetics, created in accordance with the RF President order, merges with the Institute of Physiology and Fundamental Medicine, the Research Institute of Clinical and Experimental Lymphology, the Scientific Research Institute of therapy.



The only 5-star teaching institution in Thailand



Thailand – Early last year, Asian Institute of Technology received an overall 4-star QS rating. The university received 5 stars for *teaching, facilities, and internationalization*; 4 stars for *research and employability*; 3 stars for *innovation and inclusiveness*; and 2 stars for *Specialist criteria*.

Also in 2015, AIT was adjudged the world's top-ranked international university by the EU-funded U-Multirank 2015 institutional ranking. Today's AIT graduates are a who's who of success stories in both the public and private sectors in more than half the world's countries, including the current Premier of Taiwan. AIT has a very strong global network of institutional partners from all over the world, and as a neutral non-political independent international institution with a regional mandate, provides a platform for Asia, in addressing cross-border regional issues.

Over the past 55 years of its history, the Asian Institute of Technology's (AIT) primary focus has been on postgraduate education. AIT experimented with a pilot undergraduate program in 2009. Subsequent to that the Institute has discontinued its undergraduate program and into the future, the institute will focus on postgraduate programs only.

QS Stars is a rating system which allows students to get a wider picture of an institution's qualities, looking at everything from the employability of graduates, to sports facilities and community engagement. The audit evaluates an institution against over 50 different indicators, and awards universities between 1 and 5+ stars over 8 wider fields, as well as an overall rating.

First time in the world – Sogang University implements three dimensional artificial intelligence

South Korea – For the first time worldwide, Sogang University implemented a three dimensional artificial intelligence chip that can function similar to the human brain with the least amount of energy by using integrated technology of semiconductor and nanomechanics. The result of the research, conducted by a team from the Department of Electronic Engineering, was published in the prestigious academic journal IEEE Electron Device Letters on September 1.

The new semiconductor technology works via the accumulated fusion of nanomachine circuit from the existing 2D CMOS circuit. Compared to the artificial intelligence semiconductor chip, developed with CMOS circuit technology, which is accumulated with existing 2D, the new technology has shown a 400% improvement in

accumulation and 50% better energy efficiency. Artificial intelligence chip technology which was simulated by using embodied cognition of 3D accumulation technology can be applied in driverless cars, big data, smart robots and mobile devices.

This research is meaningful in that, by developing a fundamental technology of three dimensional semiconductor that simulates functions of the human brains, it is expected to contribute towards implementation of electronic devices that can better understand and have mutual interaction with humans. Sogang University Department of Electronic Engineering professor Choi Woo-young was acknowledged for this achievement and awarded the minister citation from Ministry of Trade, Industry and Energy.

Russian university expands its open online courses



Russian Federation – Tomsk Polytechnic University (TPU) has launched a new massive open online course "Introduction to Petroleum Engineering". The topic was not chosen by chance. TPU has trained professionals for oil and gas industry for more than 60 years. Talented students are recruited during their study, and the university is deservedly considered a leading center of the petroleum education in Siberia.

Students will learn how oil is produced and refined. Together with a lecturer, they will visit the training ground of a real oil company and the largest core storage in the Tomsk region. The training will be held in English. The course starts on February 8 and will last for seven weeks.

The course was developed by leading experts of the Petroleum Learning Centre (Heriott-Watt Approved Learning Centre), together with the TPU e-Learning Institute and funded by PJSC Gazprom. The course is designed for

young professionals of the oil industry, non-core specialties, accompanying the oil production. High school students and undergraduates who want to tie their future with the oil and gas industry can also join the course.

The course is published on iversity.org – Europe's digital learning platform of massive open online courses (MOOC) that allows enthusiast to learn from the best professors in the world—for free. Course participants are viewing video lectures, read interesting articles and materials, perform tests, weekly homework assignments, virtual labs, as well as communicate with people from different parts of the planet.

This is the second massive open online course of Tomsk Polytechnic University, located on iversity.org. The first course Myths and Facts About Rocks which started in December 2015, has already enrolled more than 1,000 people from 17 countries; registration of participants still continues.



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USM materializes this agenda through pioneering multiple **initiatives**, having successfully set up the first **Student Parliament** and the **APEX Constitution**, allowing for **autonomy** in administrative and policy matters, providing full authority on **student intake**. Simultaneously, it paves the way for other research universities or institutions to follow suit. This promotes both the positioning and excelling of USM in **research and innovation**.

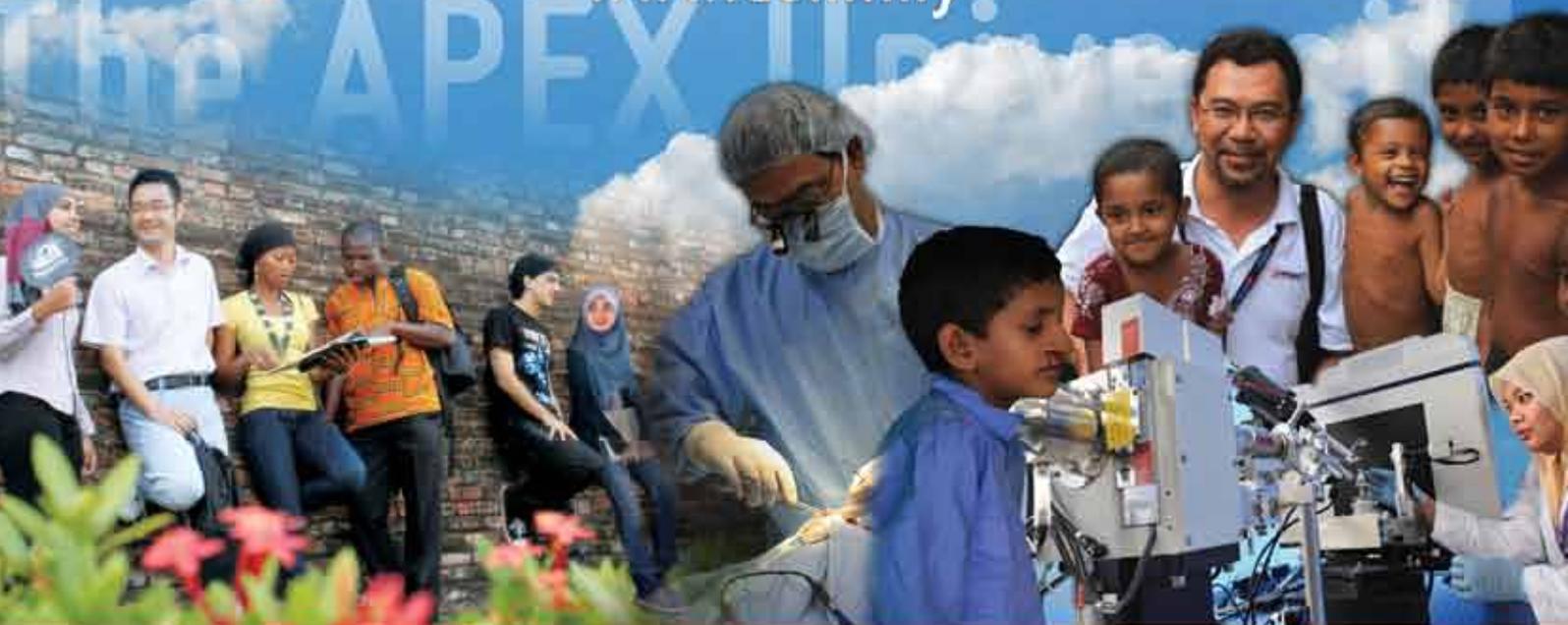
USM too champions issues on **Global Sustainability**, zooming on the **Bottom Billion** society, providing them life of better quality, opportunities and hope. Research at USM continuously put focus on all these, to understand and provide solutions to **human issues** in society.

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Khalifa University professor becomes UAE's first in Thomson Reuters list



Professor George K Karagiannidis

United Arab Emirates – Khalifa University Professor George K Karagiannidis, a member of the Department of Electrical and Computer Engineering, has been named as one of Thomson Reuters Highly Cited Researchers for 2015.

Thomson Reuters is the world's leading source of intelligent information for businesses and professionals, combining industry expertise with innovative technology. This enables the delivery of critical information to leading decision makers in the financial

and risk, legal, tax and accounting, intellectual property and science and media markets, powered by one of the world's most trusted news organizations.

The list of "Highly Cited Researchers 2015" represents some of world's most influential scientists. About 3,000 researchers have earned this distinction by writing the greatest number of reports officially designated by Essential Science Indicators as Highly Cited Papers—ranking among the top 1% most cited for their subject field and year of publication, earning them the mark of exceptional impact.

Prof Karagiannidis's area of expertise is computers, information and communications, and he is one of only 108 researchers from this field to be included on the list. In addition, he is the first and, so far, the only researcher from the UAE (in all scientific disciplines) to be included on this list.

Prof Karagiannidis said, "It is an immense pleasure to receive recognition for my

scientific achievements over the past decade. Conducting broad cutting-edge research is not an easy task, as it typically comes with significant efforts and personal costs. However, recognition of these contributions and their impact on the scientific community is a source of strength to me, and encourages me to continue my research efforts with devotion. I would also like to take this opportunity to sincerely thank my fellow colleagues and collaborators for their encouragement and support during these years."

"We are very pleased that Prof. Karagiannidis has earned this distinction," said Dr Tod Laursen, president of Khalifa University. "In the world of science, citations are increasingly important as a way of both recognizing the hard work of a researcher, but also of spreading their work and ideas. To be named as a top researcher by one of the biggest intellectual databases in the world is truly a great accomplishment, and we are proud to name Prof Karagiannidis as one of Khalifa University's faculty."

Palm waste more valuable than thought



Qatar – Qatar is home to more than 600,000 palm trees, which results in large amounts of palm waste being generated every year. This waste is usually incinerated which not only results in loss of a valuable resource, but the process of its incineration is environmentally unfriendly.

To overcome this issue, a team from Qatar University Center for Advanced Materials (QU-CAM) is currently undertaking a promising research project aimed at utilizing palm waste to produce value-added products.

Entitled "Renewable palm waste: More valuable than people think", the research project is led by QU Qatar Petrochemical Company (QAPCO) polymer chair Prof Igor Krupa, and includes postdoctoral researcher Dr Patrik Soboliciak and research assistant Ms Aisha Tanvir.

The center is focusing on extracting nanocellulose from palm waste—this cellulose can then be used in a variety of applications such as reinforcement of polymers, water purification, paper manufacture and more.

Nanocellulose extracted from date palm waste exhibits mechanical properties akin to Kevlar, a lightweight material used to manufacture high-strength products, Prof Krupa said, adding: "Similar mechanical properties and being an environment-friendly material makes nanocellulose a superior alternative to Kevlar and other fossil fuel-based materials."

Dr Soboliciak said: "Cellulose can

be extracted from palm waste by employing either chemical or mechanical processes. These cellulose nanofibers have the ability to replace common inorganic fibers for material reinforcement in the medical, cosmetic and pharmaceutical industry. Moreover, the transparent nature of cellulose nanocrystals also makes them promising candidates for use in protective eyewear, windows, or displays."

CAM director, Prof Mariam Al-Maadeed said: "It is fitting that date palm, which is indigenous to Qatar and is deeply embedded in our cultural history is found to be exhibiting strong potential as a sustainable green reinforcement material. This research activity embodies QU's continued commitment to actively tackle local challenges and research solutions for real-world problems, and is in line with Qatar's stated ambitions towards building a knowledge-based economy."



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HCT engineering students design multi-use amphibious drone



Abdulhamid Mohammed Abbas, Abdalla Al Zarooni and Zaid Al Bitar

United Arab Emirates – Three highly enterprising Aviation Engineering students from the Higher Colleges of Technology (HCT) are making their own contributions to the United Arab Emirates' burgeoning field of drone development by building their own drone or Unmanned Aerial Vehicle (UAV) which is capable of use on land and water.

Three final-year students have designed, developed and built a prototype of a remote-controlled, amphibious UAV which is capable of

landing on ground and water, and which can fly for long distances.

This level of commitment comes naturally to these students, as building UAVs has grown into a serious passion during their student life. This has meant giving up weekends, spare time and even family commitments to pursue their dreams.

"We have developed a passion for creating drones from scratch. It has gone from thinking and talking about it to building drones with our own money and wanting to set up a company," Zaid, 24, said.

"We would like to become the UAE's first UAV manufacturing company started by Emiratis, which provides drones for civil and military use," Zaid added.

With the UAE's rapidly growing drone manufacturing industry starting to flourish the students would like to see their prototype, named the AC3000LS, used for multiple purposes including search and rescue, research, emergency services, surveillance, medical, transportation and exploration.

"This aircraft has multiple uses for both civilian and military purposes. It has wireless GPS and can take clear, high-res photos with a wide-lens camera that is perfect for distances," Abdulhamid, 22, said.

Zaid, who takes charge of future development for the drone, explained that the tight-knit team wanted to create a special addition to the local industry. "It's a special plane because of its capacities and uses in research and exploration, and also very flexible as it can work in many climates and is highly effective landing on any surface, from sand, bitumen, greenery and even water," he said.

Abdulhamid, the group's planner and strategist, said the UAV's characteristics were not, as yet, found in other drones. "This is special. It can help security people in the desert and in open and closed water. It is also very good with exploration, flies for long hours and can land on both rivers and oceans, while also recording images from a remote distance," he said.

The students are now keen to propel their prototype to the next level, where it will be commercially manufactured in the UAE. "We want to be able to provide everything that people want from a drone," Zaid concluded.

KFUPM 13th in global patent filing

Saudi Arabia – King Fahd University of Petroleum & Minerals (KFUPM) has jumped to the 13th position in the world universities ranking for the number of patents filed in US Patent Office, according to IFI CLAIMS Patent Services.

According to this specialized website in providing global industries with annual reports on patents, King Fahd University of Petroleum & Minerals filed 115 patents in 2015 with an increase of 29 patents from 2014 where the university filed 86 patents, jumping from the 22nd position in 2014 to 13th in 2015.

King Fahd University surpassed Middle East and Africa universities, and won the 3rd position in Asia after China's Tsinghua University and the Korea Advanced Institute of Science and Technology.

HE Dr Khaled S Al-Sultan, KFUPM rector, said that the university exceeded its strategic goals in the field of patents, pointing out that the university, which owned only five patents in 2005 snapping at the heels of top ten universities in the world in the field of patents filling.

"Building an integrated innovative system is the cornerstone of the university success in the best investment of inventions' patents. KFUPM had paved its success by focusing on excellence in basic research. Then, the founding of Dhahran Technology Valley became the largest gathering for oil and

gas research centers. DTV system includes an Innovation Center, Entrepreneurship Institute and Technology Advancement and Prototyping Center," he added.

Dr Al-Sultan said that KFUPM is not focusing on patents filing as much as the selection of innovative activities and making sure of its feasibility. KFUPM focuses on specific areas and develops its own method of inventions marketing.

He pointed that the university has reached the utmost in preparing its techniques by licensing a number of innovations and brought it to the global markets through making alliances with international companies and a number of local and international start-up companies which had been founded based on the university patent.

He said that the university's success in patent filing and commercialization was a critical result of its strategy in the production, licensing and marketing of intellectual property, in order to contribute in supporting the national economy through creating business entities based on the innovations ideas of KFUPM members.

The university has been listed among the top producers of patents since 2011, when it came in 55th place, and continued to rise until it reached the 13th in 2015.

Effat Students excel in Robotic Competition



Effat University students in the GCC Robotic Challenge 2015

Saudi Arabia – A team of five students from the Department of Electrical & Computer Engineering at Effat University, won first place in the GCC Robotic Challenge 2015, held at the Al-Faisal University in Riyadh, and then won third place competing on the GCC level in Kuwait in December 2015.

The GCC Robotics Challenge is a yearly challenge for the Gulf Cooperation Council Countries. The competition aims to encourage undergraduate students and young professionals across the GCC to build an innovative robust robot and compete in a pre-designed arena with space and time constraints utilizing their diverse academic and technical exposure.

Dr Haifa Jamal Al-Lail, president of Effat University, said: "I am very proud of our students who won this competition, and we are happy to have proven the talent and skills of the girls in that field of engineering, which is unique in the Arab world."

Dr Akila Sarirete, dean of College of Engineering at Effat University, added: "The competition focuses on technical feasibility, efficiency, and innovation of the proposed solution as well as testing the creativity of the participants. Today, we have witnessed our talented students excel in these areas and compete in an honorable way."

Effat University's student Zainab Khan expressed her excitement on winning, saying: "We have worked hard for this competition, and this means a lot to us. It was a very nice surprise to see that we were able to exceed the expectations of everyone."

The winning team included the following students: Sarah Toonsi, Zainab Khan, Malak Buqami, Asia Ibrahim, and Sadaf Osman.

Theater of hope

Palestine – In the northeastern corner of Birzeit University's main campus stands the newly inaugurated Nasib Aziz Shaheen Theater, a modern facility that opens its doors to both students and the Palestinian community, exposing them to innovative approaches to the arts, culture and literature, and upholding and promoting the Palestinian identity.

With clarity of vision and the mission of creating an environment that fosters individual creativity and perspective, Board of Trustees Chairperson Hanna Nasir and University President Abdul Latif Abu Hijleh inaugurated Naseeb Aziz Shahin Theater on December, 19, 2015.

The inauguration of the theater represents the university's deep commitment to boosting artistic and cultural activities on campus and in the Palestinian society. This is a long-term strategy that aims to enhance students' ability to understand the world around them while broadening their perspective on life and engaging them in a vital dialogue with the voice of the community, generating social discourse and creativity.



Theatre Inauguration

The new theater can accommodate up to 850 people and another 100 in its lobby, which is equipped with a display screen and loudspeakers. Its opening crowns three years of hard work and commitment to create a free space for expressing ideas and thought through all kinds of performance—music, drama and dance from Palestine and the world.

It is hoped that the theater will present a stimulating blend of cultural diversity, intellectual rigor and professional acting for the university's "artistically-minded", becoming a "stimulating place to learn and grow."

Saudi Arabian university wins Wharton-QS prize

Saudi Arabia – Princess Nourah University (PNU) achieved a bronze medal in the Wharton-QS Stars Reimagine Education Award 2015 for its academic partnership with Dublin City University.

The partnership excelled among 500 participating projects competing for the prize during a celebration at the Wharton Center at the University of Pennsylvania.

The Wharton prize is an international prize concerned with creative educational methods that promote learning. The prize was developed through a partnership between QS for university ranking and the Wharton Center at the University of Pennsylvania, to promote innovative projects in higher education.

The partnership project between PNU and Dublin City University includes three academic programs: Marketing Technology and Innovation; International Finance; Master of Science in Business Administration.

The three programs with Dublin City University are directly under the supervision of the College of Business and Administration at Princess Nourah University. These successful programs are unique for their interactive and versatile teaching methodologies. They utilize traditional classroom instruction as well as online and distant learning with the help of faculty and staff from both universities.

The Technology and Innovation as well as the International Finance programs are offered to highly qualified undergraduate students who are very well capable of completing the programs.

The Master of Science in Business Administration, one the first graduate level programs at the university to be launched in partnership with an international university, exposes enrolled students to the best practices in the world of business with the help of faculty and staff from both Princess Nourah University and Dublin City University.

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Supercomputer Aziz is on!



Saudi Arabia – Another successful high-performance computing deployment has come to fruition at King Abdulaziz University (KAU). The Fujitsu-built machine, called Aziz, was officially switched on by His Royal Highness Prince Mishaal bin Majed bin Abdul Aziz. The ceremony was attended by Akira Kabemoto, head of Fujitsu's service platform business, and some 250 researchers, academics and students.

The event also served to launch KAU's Center of Excellence. The 230-teraflops (peak) cluster and new center will support leading-edge research in fields with regional significance, including meteorology and climate modeling,

nanotechnology, aeronautics, genomic research, real-time vision, bioinformatics, water desalination, and a wide range of numeric simulations. These efforts are all part of KAU's mission "to enrich society through cultural prominence, scientific acumen and pioneering research."

For Aziz, KAU opted for an integrated and certified cluster-type supercomputer consisting of 496 FUJITSU PRIMERGY CX250 S2 servers and four PRIMERGY CX270 x86 servers, connected to a storage system from the FUJITSU Storage ETERNUS series. Components include: Intel E5-2695v2 (2.4GHz, 12 cores); Intel Xeon Phi coprocessor 5110P (1053GHz, 60 cores); NVIDIA Tesla K20 GPU (706MHz, 2,496 CUDA cores). Fujitsu also supplied 43 PRIMERGY RX300 servers to be used as "peripheral systems."

System selection was carried out by the Department of Meteorology, Environment and Arid Land Agriculture with input from the Faculty of Computer and Information Technology and Genomic Research Center. The team sought "a bespoke system that is

a one-stop solution for a wide variety of research endeavors." Fujitsu will also provide support, maintenance and HPC training in tune with KAU's needs.

KAU has ambitious plans for Aziz to serve the needs of many researchers and disciplines, but priority will be given to regional use cases that affect Saudi Arabia. Initial cycles will be devoted to modeling sandstorms and developing technology for the desalination of seawater. Key application codes include the Genomic Analysis Toolkit, WRF, COSMO and OpenFOAM. Fujitsu has assigned dedicated on-site experts to assist with research and code optimization efforts at the Center of Excellence for Climate Change Research so that KAU researchers will be able to get the most benefit from this state-of-the-art system.

Saudi Arabia claims the largest share of supercomputers in the Middle East, where the need for supercomputers is being driven by industry and academic applications alike. Japanese server-maker Fujitsu is a major supplier throughout Asia and Europe.

RCSI Bahrain scholars begin training in Dublin

Bahrain – The inaugural recipients of the Royal College of Surgeons in Ireland – Medical University of Bahrain (RCSI Bahrain) landed in Dublin at the end of 2015 to begin their pre-doctoral year of core postgraduate training.

Dr Maisoon Mairghani, Laiva Ashang Luwang and Dr Ghada Al-Harbi were selected from an impressive shortlist of applicants after interview by principal investigators, the respective heads of postgraduate studies at RCSI and RCSI Bahrain and additional researchers.

An expert in diabetes, Dr Mairghani's project is entitled "Diabetic Foot Ulcers in Bahrain, An epidemiological profile of the prevalence, clinical care,

economic cost and impact on quality of life". Dr Mairghani will be supervised by Dr Ghufuran Ahmed Jassim from RCSI Bahrain, in association with Dr Khalifa Elmusharaf, and Professor Zena Moore from RCSI in Dublin.

Mr Luwang, who holds a Bachelor and Master of Technology (nanotechnology), will focus on the issue of pro-angiogenic scaffolds, adipose derived stem cells and low level laser bio stimulation under the guidance of RCSI Bahrain's Dr Michael Keogh and Professor Fergal O'Brien in Dublin.

Dr Al-Harbi, the one Bahraini among the group and a recent graduate of the University College of London with an MSc in cancer, will tackle "The clinical significance and mechanism of sepsis-induced thrombocytopenia", with Dr Manaf M Alqahtani (RCSI Bahrain), Dr Dermot Cox (RCSI) in supervisory roles.

Launched as part of RCSI Bahrain's 10th anniversary celebrations in 2014, the Dilmun Scholarship Program is an RCSI initiative to invest in Level 10 (doctoral) education in Bahrain by sharing expertise in Dublin with RCSI Bahrain. The overall aim is to mentor PhD students and establishing PhD mechanisms for RCSI Bahrain and Bahrain more generally. Upon completion of the pre-doctoral year of core postgraduate training, the scholars will spend four years in Bahrain completing research projects and developing early academic careers as educators and scientists.

This process has been managed by RCSI Bahrain head of postgraduate studies and research, Professor Davinder Sandhu and RCSI's head of School of Postgraduate Studies, Professor Niamh Moran.

First institute for systems intelligence in Africa



Prof Bhekisipho
Twala UJ ISI

South Africa – The University of Johannesburg (UJ) will open the first Institute for Intelligent Systems (UJ IIS) in 2016, to solve complex challenges in society and industry where big data is available.

Rapidly advancing technology now makes it possible to create computer-based “human-like thought processes” that can solve complex problems based on big data, says Prof Bhekisipho Twala, newly appointed head of UJ IIS.

Africa is a rapidly growing continent, presenting huge opportunities, challenges and complex problems that can be tackled with intelligent systems, but most of this kind of expertise is still developed outside the continent. “This is a good time to establish the first world-class institute for systems intelligence and related multi-disciplinary research centers and facilities in Africa,” he says.

“We will confront complex challenges in society and industry where big data is available on the African continent and in Brazil, Russia, India, China and South Africa (BRICS) countries, with the design and implementation of intelligent systems capable of learning and improving their own processes for the economic benefit and sustainable growth of diverse stakeholders.

“Some big challenges in society and industry, such as fraud prevention or better water resource management, can be addressed much more effectively with the combination of big data and intelligent systems designed to analyze and act on that data.

“By developing African expertise in Africa, we ensure the sustainable development of expertise for our continent’s future,” says Twala.

UJ IIS will partner with industry and Government to resolve challenges for the economic benefit of the country.

“For example, we may partner with an organization to design intelligent systems to assist with financing decisions, detect fraud and identify unauthorized intrusions into IT systems. We may design systems to assist with medical diagnoses such as diabetes, with legal decisions, or architectural design optimization.

“A good example of an intelligent system is determining if borrowers are likely to default on their loans from past experiences. This in turn affects whether the loans are approved or not. Intelligent systems are deployed at banks in South Africa to deal with the huge numbers of financial transactions generated every day and to determine credit risk.

“Intelligent systems can be also used to predict future wind turbine energy production using past production patterns and weather data; analyze road traffic accident information and develop precautionary measures; or to start understanding public health challenges such as diabetes, HIV/AIDS and malaria better,” says Prof Twala.

Under the direction of Prof Twala, who served as head of the Department of Electrical and Electronic Engineering Science at UJ, the Institute wants to develop pioneering researchers, engineers, scientists and academics from various disciplines in intelligent systems. The institute will focus on pure research, developing patents and delivering solutions to industry for significant return on capital employed. UJ ISS will also collaborate with international centers, such as the IEEE Community of Intelligent Systems, and the Korean Institute for Intelligent Systems.

University in Kuwait among the top 5% of business colleges worldwide



Kuwait– Gulf University for Science and Technology (GUST) has accomplished an outstanding feat recently.

GUST’s College of Business Administration was accredited by the AACSB-International, one of the world’s leading accreditation organizations for educational institutions, making it the first private university in Kuwait to earn the accreditation, and ranking it amongst five percent of universities in the world to have earned this prestigious achievement.

AACSB-International is the longest-serving global accrediting body for business schools that offer undergraduate, master’s, and doctorate degrees in business and accounting. AACSB accreditation is the hallmark of excellence in business education, and has been earned by 746 business schools in 51 countries,

with GUST’s College of Business Administration being one of them.

In addition, GUST’s computer science program is only one of 26 programs outside the USA accredited by the Accreditation Board for Engineering and Technology (ABET). ABET is recognized as the worldwide leader in assuring quality and stimulating innovation in applied science, computing, engineering, and engineering technology education. This is the premier seal of quality in computer science education and a direct reflection of GUST’s continuous emphasis on quality faculty, quality programs, quality students, and quality processes.

Thirty-one Iranian medical scientists among world's top 1%



School of Medicine, Tehran University of Medical Sciences

Iran – The ESI (Essential Science Indicators) Ranking System has published 31 Iranian scholars in different fields of medical sciences among the top 1% most-cited scholars in the world. The list is derived from data of an approximately ten-year time span (January 2005 to April 2015) based on the ISI Web of Science database. From this elite group of Iranian scholars, 17 scientists, who are faculty members of Tehran University of Medical Sciences (TUMS), are among the advisory

board members of The Universal Scientific Education and Research Network (USERN).

USERN, created in 2015, is an independent organization with the purpose of “peaceful and humanitarian promotion of education and research, universally.” Its members are from the top 1% scientists in 21 scientific fields as advisory board members who manage and supervise the educational and research programs in their fields of specialty. The president of USERN’s

executive board is Dr Nima Rezaei, MD, PhD, a TUMS faculty member who specializes in the field of immunology.

Annually given to scientists younger than 35 for any novel advancement or achievement in scientific education, research, or serving humanity in five scientific fields, the USERN Prize praises the works of international scholars and researchers who push beyond the boundaries of sciences and expand the collective human knowledge.

The 1st International USERN Prize Festival will be held in November and the host of the first festival is Tehran University of Medical Sciences (TUMS), Tehran, Iran. International volunteers are welcome to hosting future USERN prize awarding festivals.

A prestigious label and a top-notch dealing room for USEK



Inauguration of the USEK dealing room

Lebanon – For the first time in the Middle East and North Africa (MENA) region, a faculty of business has received receive the Business School Impact Survey (BSIS) Label. The Holy Spirit University of Kaslik (USEK) received this prestigious label last September.

The Business School Impact Survey (BSIS) scheme is designed to determine the extent of a school's impact upon its local environment—the city or region in which it is located. The scheme was initially designed by FNEGE (the French National Foundation for Management Education) and is already well established in the French higher education arena. The BSIS process has been adapted for an international audience and is now

offered in a joint venture between the European Foundation for Management Development (EFMD) and FNEGE as a service to EFMD members in any part of the world.

USEK is also very proud to have set up its brand new Thomson's Reuters trading room for both professionals and students. This dealing room, inaugurated on November 26, 2015, gives real time and historical access to financial data and news, including information on currencies, equities, stocks, commodities, securities, derivatives and other financial data and news. It is worth-mentioning that the Faculty of Business was a pioneer in the region back in 2004 when it first inaugurated a state-of-the art

dealing room easily comparable to the world's biggest and most prominent ones. Constantly seeking to provide top-notch services to its students and faculty, USEK has taken upon itself the challenge of establishing a fully smart automated dealing room, equipped with a smart podium from where the whole room can be controlled, a video-wall and over a dozen of LED screens.

The Dealing room serves a great principle that goes in line with USEK's educational mission: to encourage and boost action-based learning as faculty will be able to help their students implement in real life the notions acquired in class.



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AUG students manufacture Palestine's first-of-its-kind "Mercy Sound"

Palestine – two female students from Al Azhar University-Gaza, Nesma Al Samony and Alaa AlKhalib from the Faculty of Engineering and Information Technology, have manufactured and developed a special seat for quadriplegic patients, calling it "Mercy Sound".

The seat is considered the first seat to be manufactured in Palestine, competing with global seats in terms of high quality and low cost. It also receives all the commands through only the imprint of the patient's voice.

This seat turns into a bed that contains ventilation to renew the air down the patient's body, to protect it from bone ulcers, and to facilitate the process of entering the toilet.

The students chose their project after conducting several field studies to identify the most pressing needs of the disabled. They also pointed out the obstacles that encountered them during the project due to the forced siege, most notably lacking the piece needed for sound. They overcome the problem by importing the piece which was unfortunately damaged during the experiment. Determined to finish their project successfully, Nesma and Alaa' operated the project temporarily using the hand until they got a new piece from America.



Project Mercy Sound

"The real impulse behind manufacturing the seat is to help our people who suffer from injuries leading to quadriplegia due to the successive wars on the Gaza Strip," said Nesma and Alaa'.

NWU now developing trailblazing medicine – the only in Africa!



Dr Philippe Peter and Prof Anne Grobler

South Africa – New pharmaceutical technology that will not only cure patients more quickly, but also accelerate the development of new medication by several years, was recently launched at the North-West University. Into the bargain, this technological breakthrough is a first for the African continent with the NWU being one of a few universities worldwide to have such technology.

A multimillion-rand machine that can now fill hard gelatine capsules with liquid or gel and seal them, was recently received by Prof Anne Grobler, director of the NWU's Centre for Preclinical Drug Development. "Four years ago we started talks with Capsugel—a leading dosage form solution and drugs delivery systems company, about the possibility of adapting their CFS1200 machine so that our local drug formulations could be accommodated by this instrument. We could reach agreement and are proud to say that consequently we have even attracted international interest in the manufacturing of drugs."

Grobler says a liquid administered drug

is generally absorbed by and distributed in the human body faster, therefore increasing the drug's efficacy and accelerating the patient's healing period, and through this development a capsule form is also now possible.

"The instrument is taking us to heights that were never possible before," says Grobler. The real breakthrough is that one can now use a capsule to administer therapeutic molecules that could not effectively be administered in an oral dosage form in the past. Currently there are millions of compounds with therapeutic potential that could not be used due to various deficiencies regarding dosage or safety or formulation in a useful dosage form. With this new dosage technology, the way is paved for new medicines.

Dr Philippe Peter, a chemical engineer, PhD in polymeric sciences, and project head of Capsugel, who attended to the installation, calibration and training of the instrument in Potchefstroom, says the manufacturing process of new drugs is also thus shortened significantly. "With traditional techniques it takes

approximately 20 years to get a new drug from a candidate medicinal molecule to the shelves. This is because various research phases are involved, among others the identification of the characteristics of the illness concerned, the in vitro testing phase, the preclinical phase where tests are done on experimental animals, tests on humans, the registration and naturally the mass manufacturing of the drug. "This instrument replaces the human factor to such an extent that new drugs can now be developed in a significantly shorter period," says Peter.

The North-West University has previously also made its mark at the international level with the development and patenting of a unique liquid delivery method of medication, namely the Pheroid method. In this liquid medication form, scientists at the NWU have thus far developed formulations for eight classes of medication, but had to fill the capsules manually. "The human factor can create mistakes, causing a slow manufacturing process, and contamination can occur. This apparatus is definitely one of our flagship instruments and can increase the quality of life of many people. We look forward to taking years of hard work to even higher levels with the development of a liquid dosage form," says Grobler.

According to Grobler, the instrument was funded by commercial interest and government support and there is already a possibility that the NWU and an international partner will manufacture modern drugs that could be available on the shelves soon.

GMU students bagged Best Student Paper Award at Global Healthcare Conference



United Arab Emirates – Winning the Best Student Paper Award has added another feather to Gulf Medical University's cap!

Ms Janhavi Yateen Sirsat and Mr Shivram Kumar presented their empirical research paper on "Prevalence of and factors associated with back pain among high school students – a cross sectional study" at the 4th Annual Global Healthcare

Conference organized by Global Science and Technology Forum (GSTF) in June 2015.

The paper focused on back pain, which is a widely disregarded topic on the whole, amongst high school children around the world which is on a dramatic rise. Many factors such as sedentary lifestyle, smoking, poor back support, strenuous activities and heavy loads have shown to be associated with this phenomenon.

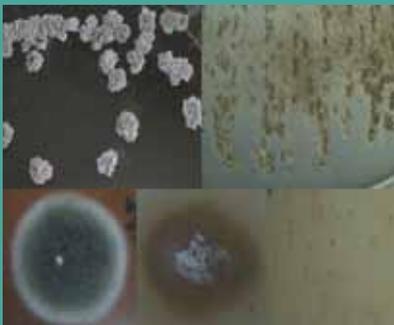
The study showed the prevalence of back pain to be 65% among high school students. Among which females suffered twice as much compared to males. The most affected area of the back was also found.

Other factors included sleeping position, hours in school, extracurricular activities, duration and weight of school bags carried by them.

Prevalence of back pain is a major issue in today's generation and awareness needs to be raised among high school students, their parents, and academic departments in schools regarding the ways to reduce these risk factors. Also, a nationwide study should be done to obtain a more generalizable result.

The students got excellent exposure to the latest research and developments from leading researchers and academicians at the conference which was also a very enriching and enlightening experience for them. This award has boosted new level of energy among the among the students and research fraternity of the university pursuing active research in coordination with dedicated Center for Advanced Biomedical Research and Innovation which has been set up recently with an investment of over AED 20 million.

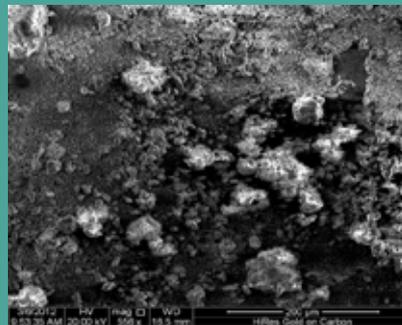
Iraqi scholar registers invention in NCBI database



The registered isolates as they appear on culture

Iraq – Dr Mohammad J Al-Jassani from University of Babylon has registered three new isolates of concrete fouling microbes in the National Center for Biotechnology Information (NCBI) database.

These isolates have proved their ability to improve the concrete compression strength by about 60% through production of group of organic acids which enhance the cement hydration reaction efficiency which was proven by TLC and XRD analyses.



SEM image showing growth on the surface of cement mortar cube

In addition, these isolates are able to grow under extreme conditions of High pH and shortage of nutrients as proven by mortar cubes SEM. This work is under publication.

Separately, a new *Penicillium* sp. was registered in the same database under the accession number. This mold isolate is producing a new antibiotic that has both antibacterial and antifungal activity especially against opportunistic bacteria like *Staphylococcus aureus* and dermatophytes.

University of Petra first in Jordan to receive Quality Assurance Certification

Jordan – The University of Petra (UOP) has been awarded the Quality Assurance Certificate of the Jordanian Accreditation Commission of Higher Education Institutions—a government entity entrusted with the quality assurance of higher education at both local and international levels.

UOP was nominated for the certification in January 2011 and has since embarked on applying the commission's 12 criteria that were stated in the manuals for quality assurance procedures and criteria in higher education institutions for the years 2009 and 2010. In August 2015, the university received the rating "Excellent in the Quality Assurance Certification" with a 4.13 mark out of 5, allowing it to set the benchmark for others to follow suit as it launches itself ahead of all others towards pursuing international accreditations.

Receiving this first-to-be-awarded certification at the country level has only been possible through the commitment and support of the university's administration, the spirit of teamwork, and the participation of its employees, students, and the local community, and through building a culture of quality and instilling it in its day-to-day lives and business dealings.

DNA barcoding, world's largest research program in biodiversity science

Canada – Urban sprawl in Malaysia, shipping traffic and resource extraction off the coast of Mauritania and effects of climate change on Costa Rican rainforests: these are just three examples of human impacts that threaten the diversity of plants and animals we rely on to sustain lives and livelihoods around the world.

Stemming biodiversity loss is the ultimate goal of the International Barcode of Life (iBOL) project based at the University of Guelph in Guelph, Ontario. The initiative is also helping to protect human health and food security, improve pest and disease control, and regulate international trade in endangered species.

The global iBOL project is based on DNA barcoding invented by University of Guelph integrative biologist Paul Hebert a dozen years ago. Scientists use the technology to identify species of organisms based on a telltale snippet of their genetic material.

DNA barcoding is now the world's largest research program in biodiversity science, involving more than 1,000 researchers in 25 countries on six continents. A global reference library maintained at Guelph's Biodiversity Institute of Ontario (BIO) contains four million barcodes from more than 400,000 species.

Now Hebert and more than 100 other scientists working at BIO have bigger plans. They aim to expand barcoding into a 20-year, \$2 billion project to catalogue all life on our planet.

That plan was unveiled in 2015 during an iBOL annual conference held in Guelph, the first time the international event was held in North America. Called "Biomes to Barcodes," the conference attracted more than 500 researchers from 56 countries around the globe. "Biodiversity scientists are using DNA technology to reveal the diversity of life and to improve the protection of threatened species, while safeguarding public health and provoking policy changes," says Hebert.

Those benefits were highlighted in international headlines in 2013, when Guelph scientists released results of the largest-ever market study showing that nearly one-third of fish sold at stores and restaurants in the United States was mislabeled.

That study—commissioned by Oceana, the world's largest marine advocacy program—established DNA barcoding as a standard for food ingredient authentication.

Besides identifying known species, scientists have used DNA barcoding to discover hundreds of overlooked species of animals, plants and even marine algae.

By identifying and cataloguing the planet's species, he says, "DNA barcodes will be a vital tool not only for conservation but also for monitoring species that have adverse impacts on human health and economic well-being," Hebert concluded.

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Positive Action Leadership

A hairy planet like a comet



Switzerland – Astronomers from the University of Geneva (UNIGE) and members of the NCCR—for National Centre of Competence in Research-PlanetS—discovered an immense cloud of hydrogen escaping from an exoplanet the size of Neptune. This phenomenon generates like a tail or a head of hair giving it the appearance of a giant comet. Already observed in some very large and very hot exoplanets, this phenomenon is viewed for the first time with such a magnitude. The cloud might explain the formation of some hot and rocky super-Earths. It would also be an indicator for detecting extrasolar oceans. Finally, it would be used to envisage the future of our atmosphere. These results are published in the latest edition of the journal *Nature*.

With a mass approximately 23 times that of our Earth, the exoplanet GJ436b rotates around its star in only three days and has an atmosphere which leaves behind a gigantic trail of hydrogen. “This cloud is very spectacular; it’s as if, after carrying the planet’s atmosphere at a high temperature, causing the hydrogen to evaporate, the radiation of the star was too weak to blow away the cloud that accumulated around the planet,” comments David Ehrenreich, an astrophysicist with UNIGE and lead author of an article reporting on these observations in the latest issue of *Nature*.

Indeed, scientists see the cloud’s shadow when it passes in front of the star. Essentially comprised of hydrogen, it absorbs the ultra violet light emitted by the star and the phenomenon remains invisible on Earth because the ultra violet light is blocked by the atmosphere. It was therefore necessary to use the Hubble spatial telescope for these observations: “When you’re searching in the visible region you only see the shadow of a planet whose size is equivalent to four times that of Earth like Neptune. But if the sensitive eye is pointed toward the Hubble ultra violet light, the planet is transformed into a veritable monster, far bigger than the star,” explains David Ehrenreich. Evaporation is spectacular, but it would not threaten the atmosphere of GJ436b, an exoplanet which was formed several thousands of years ago and which would

have only lost 10% of its atmosphere.

But evaporation might, however, explain the disappearance of atmospheres observed on rocky exoplanets, which rotate very close to their star and are extremely hot, such as the famous “super-Earths” discovered by the Corot and Kepler spatial telescopes. Just like the GJ436b, these might have been hot Neptunes orbiting around more luminous stars which would have circulated in their atmosphere that ended up leaving the rocky center of the planet bare.

This type of observation is very promising in the search of habitable planets since “hydrogen from the ocean water that evaporate on slightly hotter terrestrial planets than the Earth could be detected,” as Vincent Bourrier suggests, the second author of these results. The phenomenon might even explain the disappearance of hydrogen outside our atmosphere, an element that abounded there more than 4 billion years ago. Finally, such observations might help to envisage the distant future of our planet, when, in 3 or 4 billion years, the Sun will become a red giant and will circulate in our atmosphere making life impossible on Earth. Astrophysicists now hypothesize that our planet would be transformed into a giant comet, thus resembling a “hairy” star just like GJ436b.

Welcome the smart skeleton



Illustration by Eoin White, University of Limerick, Ireland

Denmark – Aalborg University is coordinating a strong international team of scientists and researchers

who are working on the project AXO SUIT. The AXO SUIT project is about developing the so-called exoskeleton. The purpose of an exoskeleton is primarily to help the elderly who are still mentally fit but face deteriorating physical abilities.

The exoskeleton works like a portable exterior robotic skeleton that is equipped with advanced sensors that detect and initialize strengthening of body movements. The principle is like that of an electric bicycle that gains more power the harder the pedals are pushed. The exoskeleton is controlled by sensitive sensors and powerful motors that are limited so that the user does not feel overpowered and out of control with their movements. The exoskeleton should not be thought of as a robot but rather as a tool or aid that will support everyday life. It can provide seniors with the independence

and freedom them from the need for social care.

The exoskeleton can be either a full supportive skeleton or used in smaller parts. For example, if an individual only has weak arms and wants to be able to lift shopping bags or do gardening, the skeleton only needs to be mounted on the arms.

The team of the AXO SUIT project includes scientists from Aalborg University, Sweden, Belgium and Ireland. The project is supported by the European Union and national funding organizations such as Innovation Fund Denmark and Sweden’s VINNOVA.

Shaoping Bai, the project’s head coordinator at Aalborg University, expects that the first portable prototype will be presented within a year.

Another option for urban mobility: students create smart bike



Mexico – A smart e-bike or smart pedal bicycle was created by a team of three Universidad de Monterrey (UEDEM) students. The prototype is a cutting-edge folding design that promotes the development of on-campus mobility.

The e-bike, designed and built by the students with advice from Professor Eduardo Martínez Escobedo, has been donated to the UDEM Mailroom

Department for its use on campus, thus promoting the development of sustainability within university premises.

The prototype, which represented a challenge to the students' ability to innovate, has a state-of-the-art look. It is built in stainless steel and can be carried in a car's trunk as it folds in two.

Additionally, considerations have been taken for mass production to make it available to the general community, although investors are still needed to support its merchandising.

The e-bike does not pollute and it has a torque sensor which enables the engine to start automatically when it feels the rider is struggling pedaling.

The sensor kicks in only when needed, which extends battery life. It can even store energy through pedaling, when

the engine is not in use.

"The smart pedal e-bike can detect by itself if the rider needs more force to keep going. The engine helps in such a way that with just one or two turns of the pedal, speed increases," said Tamez Peña, one of the students.

For his part, Professor Eduardo Martínez Escobedo stated that for their Final Evaluation Project students are expected to make use of all the knowledge acquired in their university courses to create a product which is in line with UDEM's vision on sustainability.

Professor Martínez stated that as a country Mexico has transitioned from "made in Mexico" to "designed in Mexico" and he emphasized the low investment cost required to produce this product since it can be manufactured on demand.

CETYS first university in Latin America to host USASBE

Mexico – CETYS Universidad sponsored this year's Annual Meeting of the United States Association for Small Business and Entrepreneurship (USASBE) held in San Diego, becoming the first university in Latin America to do so. It was also one of the five institutions nominated as "Best Foreign Entrepreneurship Program" for its MBA with a concentration on Entrepreneurship.

Activities were held both in Mexico and the US for the first time in the Meeting's history, with more than 80 international leaders in entrepreneurship discussing the advantages of the region during the "Baja California Learning Journey" offered by CETYS Universidad.

Dr Fernando Leon Garcia, president of CETYS Universidad, recognized the growing synergy between both sides of the border, stating that both countries benefit from student and faculty exchange, which strengthens academic programs and global competitiveness.

Scholars, both from CETYS and other universities, presented more than 10 papers that address the entrepreneurial efforts that are developing in the Cali-Baja region.

The world's largest bowl of quinoa



Peru – Universidad San Ignacio de Loyola (USIL) and San Ignacio College—based in Peru and Miami, Florida respectively—together with Peruvian chef Rosa Polo, prepared an enormous bowl of quinoa weighing 716.65 kilograms (5 meters long, 1.5 meters wide and 15 cm high), setting a Guinness World Record for the world's largest bowl of quinoa in Miami, Florida (USA).

The activity sought to show the world the benefits of the "golden grain" from the Andes, which is nutritious, as well as useful in fighting diabetes, malnutrition and obesity. With political and academic authorities, as well as members of the business community in Peru and the United States in attendance, the enormous bowl of quinoa was presented around noon on October 28, 2015, at Florida International University's Frost Art Museum in Miami, Florida, in the presence of Guinness World Records adjudicator Carlos Martínez.

"This is a historic day for good nutrition and healthy eating. We

want to encourage the entire world to eat Peruvian quinoa. It's a highly versatile grain that can be used to prepare different dishes, desserts and beverages. It is also a very nutritious food that is ideal for fighting many diseases, according to research conducted by the FAO, WHO and NASA," commented Raúl Diez Canseco Terry, founding president of USIL and one of the promoters of this record.

The executive president of USIL, Luciana De la Fuente de Diez Canseco, pointed out that the event was a tribute to Peruvian farmers, without whose work and sacrifice this crop would not have transcended the last 14,000 years. She recommended eating quinoa as an ideal food for good health.

Following the ceremony, close to 6000 servings of quinoa from the enormous bowl were donated to the Florida Rescue Mission and Camillus House, both charitable institutions based in Miami, as well as to homeless people on the streets of Miami.



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