



UNIVERSITI SAINS MALAYSIA

USM

N A D I

National APEX Development Indicators

The Journey towards Excellence



APEX
2011-2013
DELIVERING
EXCELLENCE



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NADI
National APEX Development Indicators
Centre

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The Journey towards **Excellence**

N ▲ D I
National APEX Development Indicators



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NADI Centre consists of 3 exhibition zones :

- Laying the Foundation
- Delivering Excellence
- Innovative USM



Laying The Foundation Zone

You can get more information on USM constitution, branding, and other official information.



Delivering Excellence Zone

Get to know more and explore about student activities and other community projects.



Innovative USM Zone

You can find the latest products that USM has currently developed from research and innovation.

Contents

LAYING THE FOUNDATION

USM Terpilih Sebagai Universiti APEX / <i>USM Chosen as APEX University</i>	4
Visi, Misi, Nilai, dan Teras / <i>Vission, Mission, Values and Thrusts</i>	5
Apa itu APEX? / <i>What is APEX?</i>	6
Rangka Kerja APEX USM / <i>USM APEX Framework</i>	7
Strategi “BLUE OCEAN” untuk APEX / <i>Blue Ocean Strategy for APEX</i>	8
Fasa-Fasa Transformasi / <i>Transformation Phases</i>	9
Ekosistem Inovasi: Pelopor Aspirasi APEX / <i>The Innovation Eco-System: The Precursor to the APEX Ideals</i>	10
Perlembagaan Baru USM / <i>The New USM Constitution</i>	11
Penjenamaan Semula USM / <i>Rebranding USM</i>	12
Pertama di Malaysia - Pemilihan Senat USM Secara Proses Pengundian <i>First in Malaysia - USM Senate Appointment on Election</i>	13
Pejabat Ombudsman: Platform Aduan Warga USM / <i>Ombudsman Office As Voice Platform of USM Community</i>	14
MUnSyI - Pengambilan Pelajar Yang Holistik MUnSyI - <i>The Holistic Intake Approach</i>	15
Bersama untuk Kecemerlangan Universiti / <i>Together for University Excellence</i>	16



DELIVERING EXCELLENCE

Gerbang ke Arah Komuniti Pencinta Alam / <i>A Gateway Towards A Greener Community</i>	20
USM Pemangkin Perkongsian Strategik Bagi Kelestarian Hari Esok / <i>USM Catalysing Strategic Partnerships for a Sustainable Tomorrow</i>	21
Parlimen Pelajar Pertama di Malaysia / <i>First Student Parliament In Malaysia</i>	22
Inisiatif Kepimpinan Pelajar - Menyemai Benih untuk Kelestarian Hari Esok / <i>Student Leadership Initiatives -Sowing The Seed for A Sustainable Tomorrow</i>	23
Mencapai Keseimbangan - Memupuk Budaya Kecemerlangan / <i>Striking A Balance - Nurturing A Culture of Excellence</i>	24
Hadiah Nobel Alternatif / <i>Laureates of The Right Livelihood Award</i>	25
USM Menyahut Cabaran / <i>USM Takes On Global Sustainability Challenges</i>	26
Mengubah Kehidupan Masyarakat Terke bawah / <i>Transforming The Lives of the Bottom Billions</i>	27
USM Melebarkan Sayapnya ke Seluruh Dunia / <i>USM Spreads Wings Through Out the World</i>	28
Pembelajaran Mudah Alih - Merapatkan Jurang Pendidikan / <i>Mobile Learning - Bridging The Education Divide</i>	29
Lalat Parasit Baru untuk Menentang Anai-Anai / <i>New Parasitic Fly To Battle Termite Soldiers</i>	30
Peneraju dalam Penyelidikan Pelancongan Lestari / <i>Leading The Way In Sustainable Tourism Research</i>	31
Kluster Penyelidikan Farmakogenom & Ilmu Terapi Baru @ Informm / <i>The Pharmacogenomics & Novel Therapeutics Research Cluster @ INFORMM</i>	32
Pendekatan Molekular Terhadap Diagnosis Tifoid & Lain-Lain Penyakit Enterik / <i>Molecular Approaches To The Diagnosis of Typhoid & Other Enteric Diseases</i>	33
Teknologi Nano untuk Mengurangkan Pemanasan Global / <i>Nano Technologies To Limit Global Warming</i>	34

INNOVATIVE USM

Teori Afrika Atau Teori Malaysia: Penemuan Alternatif Penghijrahan Awal Sejarah Manusia / <i>Africa is Out, Malaysia is In: An Alternative View of Early Human Migration</i>	38
Penemuan Kompleks Tamadun Tertua di Asia Tenggara / <i>Discovering the Oldest Civilisation Complex in Southeast Asia</i>	39
Kolagen Halal: Mencari Penyelesaian Bagi Menampung Kekangan Diet Dalam Agama-Agama Dunia / <i>Halal Collagen: Developing Solutions to Accommodate Dietary Restrictions in World Religions</i>	40
Vaksin Halal Meningokokal Pertama di Dunia: Menyediakan Perlindungan Kesihatan yang Berpatutan / <i>Innovative USM to Produce Halal Meningococcal Vaccine</i>	41
Kini Sesiapa Sahaja boleh Braille! / <i>Now Everyone Can Braille!</i>	42
Endeavor Mobile: Platform Perubatan Berasaskan Android Ciptaan Tempatan / <i>Endeavor Mobile: Home-Grown Medical Android Application</i>	43
Daripada Tembakau & Kenaf kepada Biskut Cendawan / <i>From Tobacco & Kenaf to Mushroom Cookies</i>	44
Oligo-Ct Strip Calitan Pengesanan Berasaskan DNA yang Mampu Mengesan Kuman Taun / <i>Oligo-Ct Strip Rapid Test for Sequence-Specific Detection of Cholera Toxin</i>	45
<i>Going Bananas</i> ; satu iktibar dalam kelestarian / <i>Going Bananas; a lesson in sustainability</i>	46
<i>White Coffin</i> ; USM ke arah kelestarian... / <i>The White Coffin; USM goes green</i>	48
Kit READS Bantu Pelajar Kuasai Bahasa Inggeris / <i>READS Kit Helps Student to Master English</i>	50
Genom Getah: USM Mencipta Semula Industri Global Bernilai Berbilion Dolar / <i>The Rubber Genome: USM Reinvents a Billiondollar Global Industry</i>	51



N A D I

National APEX Development Indicators

The idea to establish the National APEX Development Indicators Centre (NADI) was mooted by USM upon receiving the APEX status from the ministry of Higher Education (MOHE) on 3 September 2008, and the Centre was originally established in January 2009. In April 2011, the Strategic Communications Office (SCOMM) was tasked to revitalize NADI and to undertake its management. NADI has been established to serve as a centre to showcase achievements, mission and vision, as well as indicators of USM as an APEX University. Today, the roles of NADI are expanded to enhance the awareness on the overall achievements of USM in various aspects, including research and innovations, academic and student affairs, services, industrial and community linkages. It also hosts groundbreaking discoveries of USM as well as impactful products and activities of the University that have created headlines and significant impacts to science and humanity. Apart from being a benchmark showcase exhibition hall, NADI also functions as a one-stop information centre for visitors to USM. It can also be readily converted into a war-room that commands the strategic direction of APEX.

Strategic Communications Office

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USM Terpilih sebagai Universiti APEX USM Chosen as APEX University

USM dipilih sebagai universiti dalam program APEX oleh Kerajaan Malaysia berdasarkan sebab-sebab berikut sebagai SATU-SATUNYA Universiti yang memenuhi 'Criteria' (atau 5-bintang) dalam 2008.

- Pepang dan pejabat kelengkapan di dalam universiti bagi Pendidikan Sarjana Pembangunan Lulusan Perubatan Farmasi dan Matrika pada tahun 2008.
- Keputusan dengan mengintegrasikan bidang kesihatan dan bidang sains.
- Membangunkan pusat saranti masa hadapan sehingga tahun 2017 yang menyediakan program-program pengalihan global dan berpaksikan kelestarian.
- Prinsip utama bagi golongan kesihatan adalah yang berorientasikan kepada kesihatan masyarakat dan pembangunan sains farmasi, sains komputer, pengalihan komunikasi dan kelestarian.

Keputusan tersebut yang menunjukkan kepada perkembangan bertaraf USM ini berikutan pada penyediaan dan kemampuannya banyak dapat memenuhi. Maka dapat menunjukkan peranan signifikan dalam perkembangan di samping dunia.

USM was selected as a university in the APEX program by the Government of Malaysia because of the following reasons:

- It is one of the premier research universities in Malaysia, and has emerged as the leading university in the field of medical research.
- A major research and academic institution for the development of Malaysia's health care industry.
- It provides multi-disciplinary research activities by integrating the life and the medical sciences with business, management, communication and engineering.
- Key initiative for established future research, especially in the fields of medical research, health sciences, dental science, pharmaceutical science, computer science, management, communication and engineering.

The greatest impact contributing to USM's continued growth lies in the research and innovation areas of its disciplines, teaching, and innovation from each faculty and have been commensurate with the



Universiti Sains Malaysia is country's first Apex university

PICK OF THE BEST



Apex is about the future. We are not talking about the position of the universities. We are identifying one that can go leaps and bounds into excellence with government help.

REPORTS: PH



... bekerjasama dan berkolaborasi bersama-sama dalam perancangan USM (Universiti Sains Malaysia) pada tahun ini dan tahun-tahun berikutnya. Warga USM sepatutnya bekerja secara berkolaborasi, saling membantu, saling berinspirasi dan bekerjasama untuk mencapai kejayaan dan menzahirkan kecerdasan.

Bersama Untuk Kecemerlangan Universiti 2012

LAYING THE FOUNDATION


NADI  UNIVERSITY SAINS MALAYSIA

NADI UNIVERSITY SAINS MALAYSIA

LAYING THE FOUNDATION

Persama Untuk
Kecemerlangan Universiti
Sesuai Untuk Kelembutan
Excellence

... collaboration and putting our hands together in order to drive USM towards excellence this year and the years to come. **USM members** should not work in silos but need to share their expertise, synergistically, in high cooperation and to share experience for future development to drive towards success and excellence!



PROFESSOR AZIZ BIN AHMAD OSMAN
Vice-Chancellor



Business Incubation

Supporting the growth of new businesses and entrepreneurs through various services and resources.



USM World Renowned for Sustainability

Talent, Resources, Governance

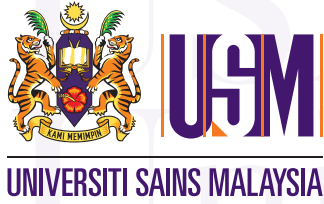
USM as a sustainability led university

Transforming into a Sustainable Future

Nurturing & Learning Students & External Services Research & Innovation



vostro



USM Terpilih sebagai Universiti APEX

USM Chosen as APEX University

USM dipilih sebagai universiti dalam program APEX oleh Kerajaan Malaysia berdasarkan sebab-sebab berikut :

- Ia merupakan satu daripada lima buah **universiti penyelidikan perintis** di Malaysia, dan muncul sebagai **SATU-SATUNYA** Universiti yang dianggap "Cemerlang" (atau 5-bintang) dalam Kajian Reputasi Akademik oleh MQA pada tahun 2006;
- Pejuang dan pendukung kelestarian di rantau ini yang dilantik oleh **Pusat Kepakaran Serantau Universiti bagi Pendidikan untuk Pembangunan Lestari Pertubuhan Bangsa-Bangsa Bersatu** pada tahun 2005;
- Mentransformasi inisiatif penyelidikan **multidisiplin** dengan **mengintegrasikan** bidang sastera dan bidang sains;
- Membangunkan pelan senario masa hadapan sehingga tahun 2025 yang menonjolkan program - program **rangkuman global** dan **berpacuan kelestarian**;
- **Pilihan utama** bagi golongan lepasan sekolah yang cemerlang, terutama dalam bidang-bidang sains perubatan, sains kesihatan, sains pergigian, sains farmasi, sains komputer, pengurusan, komunikasi dan kejuruteraan.

Impak terbesar yang menyumbang terhadap pertumbuhan berterusan USM ini terletak pada **penyelidikan dan inovasinya**. Banyak daripada penemuan, reka cipta dan inovasinya meraih anugerah serta dikomersialkan di seantero dunia.

USM was appointed as a university in the APEX programme by the Government of Malaysia because of the following reasons:

- It is one of the five **pioneer research universities** in Malaysia, and has emerged as the **ONLY** University to be rated "Excellent" (or 5-star) in MQA's Academic Reputation Survey in 2006;
- A regional champion and advocate for sustainability appointed by the **United Nations University's Regional Centre of Expertise on Education for Sustainable Development** in 2005;
- It promotes **multi-disciplinary** research initiatives by **integrating** the arts and the sciences;
- Developed a scenario plan for the future up to 2025 which features **global outreach** and **sustainability-led** programmes;
- **Top choice** for well-rounded school-leavers, especially in the fields of medical sciences, health sciences, dental sciences, pharmaceutical sciences, computer sciences, management, communication and engineering.

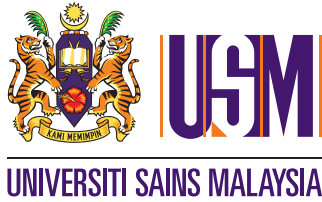
The greatest impact contributing to USM's continuous growth lies in the **research and innovation** where many of its discoveries, inventions, and innovations have won awards and have been commercialised worldwide.

Universiti Sains Malaysia is country's first Apex university
NST - 4 Sept 2008

USM dipilih universiti Apex pertama
Utusan - 4 Sept 2008

PICK OF THE BEST

Kita jangan terlalu taksub dengan ranking
Berita Harian - 7 Sept 2008



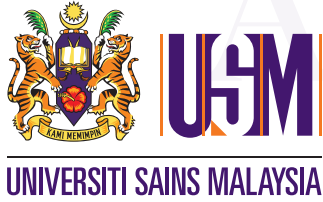
Visi, Misi, Nilai dan Teras

Vision, Mission, Values and Thrusts



“Since its inception, USM (the then Universiti Pulau Pinang) has always been built on a very strong foundation of being unique, bold and forward looking thanks to the creative vision of its founders and leaders, as well as the community of scholars whose lives have been touched by the university.”

Transforming Higher Education for a Sustainable Tomorrow
2010 Laying The Foundation



Apa itu APEX?

What is APEX?

Program Pemacuan untuk Kecemerlangan (APEX) merupakan satu program pembangunan pantas bagi institusi-institusi pengajian tinggi untuk mencapai dan diiktiraf sebagai institusi bertaraf dunia. Pada **3 September 2008**, USM telah diiktiraf dan dianugerahkan gelaran **universiti pertama di Malaysia** mendapat status APEX.

Universiti APEX antara lainnya memiliki kriteria berikut :

- Universiti yang paling berpotensi untuk menjadi **institusi pengajian tinggi bertaraf dunia**, dengan mendapat bantuan daripada Kerajaan.
- Mempunyai **autonomi** dalam hal-hal kewangan, skim perkhidmatan, pengurusan, pengambilan pelajar dan yuran.
- **Lembaga Pengarah** terdiri daripada profesional atasan, pemimpin ulung di samping staf yang berwawasan, komited dan bermotivasi bagi sebuah Universiti APEX.
- **Ahli-ahli akademik berbakat** yang terkenal kerana ciri-ciri ilmiah mereka dalam bidang kepakaran masing-masing.
- **Pemilihan pelajar** yang keseluruhannya berdasarkan merit mencerminkan profil demografi negara, termasuklah kombinasi seimbang pelajar luar negara.
- **Kemudahan pengajaran dan pembelajaran** yang dilengkapi serta ditambah baik dengan peralatan **terkini** selari dengan kemajuan teknologi semasa.

Universiti APEX akan menjadi **pusat kecemerlangan akademik negara**, selain menjadi perintis jalan agar keunggulan (**crème de la crème**) dapat dilestarikan serta ditadbir oleh pemimpin dan profesional berkaliber tinggi dengan **kuasa dan autonomi penuh**.

*The Accelerated Programme for Excellence (APEX) is a fast track development programme for institutions of higher education to achieve and to be recognised as world class institutions. On the **3 September 2008**, USM was recognised and awarded as the **first university in Malaysia** to have received the APEX status.*

An APEX University, among others, incorporates the following criteria:

- A university with the most potential to become a **world-class institution** of higher learning, with aid from the Government.
- Possesses **autonomy** in finance, service schemes, management, student intake and fees.
- **Board of directors** comprising top professionals, accomplished leaders as well as visionary, motivated and committed personnel ideal of an APEX University.
- **Talented academicians** renowned for scholarship in their respective fields.
- **Student selection** based wholly on merit reflecting the demographic profile of the country, including a healthy mix of international students.
- **Teaching and learning facilities** equipped and enhanced with **state-of-the-art** tools in tandem with current advancements in technology.

*An APEX University will be the **nation's centre of academic excellence**, as well as provider of better avenues to ensure the retention of the **crème de la crème** while being governed by high-calibre leaders and professionals **with full authority and autonomy**.*

Menggapai status USM penuhi syarat, kriteria untuk menjadi Universiti Apex

Bicara
CANSELERI

TERMASUK dalam senarai merobut status Universiti Apex salah membina keunggulan sebuah universiti sebagai institusi yang mempunyai wawasan serta strategi pembangunan tersendiri untuk terus bersaing di peringkat antarabangsa.



Ikuti pandangan Naib Canselor Universiti Sains Malaysia (USM), Prof Tan Sri Dzulkifli Abdul Razak mengenai perlunya sesebuah universiti mendapat status Universiti Apex seperti yang disampaikan kepada wartawan pendidikan Berita Harian, Norliza...

masuk dana luar bagi menjayakan program penyelidikan dan pembangunan (R&D). Berbanding proses peniad-biran sedia ada, banyak keputusan terpaksa dirujuk kepada pihak Kementerian. Pengajian Tinggi yang ada kalanya menyukarkan proses pelaksanaan sesuatu aktiviti.

dalam menjana teknologi baru memperusi aktiviti R&D. Perubahan itu bukan bertujuan mewujudkan sifat kebendaan ini. Selain itu, pengi kepada semua peringkat tajaan diturunkan ke Sarang Sarung USI diperkenalkan sejak tahun lalu.

Di peringkat universiti tunai RM5,000 ditawarkan kepada penyelidik yang berkecenderungan dan mengkomersialkan hasilnya ke peringkat kebangsaan, manakala 1 gram pendidikan ini dilaksanakan Kelestarian Ilmu yang utus semua pelajar sains sosial mer ilmu mengikut falsafah etiknya.

Proses memperkasakan program pendidikan ini dilaksanakan Kelestarian Ilmu yang utus semua pelajar sains sosial mer ilmu mengikut falsafah etiknya.

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Proses memperkasakan program pendidikan ini dilaksanakan Kelestarian Ilmu yang utus semua pelajar sains sosial mer ilmu mengikut falsafah etiknya.

Berita Harian - 2 Sept 2008

UM and USM lead the way

They are frontrunners for apex status

By **SIMRIT KAUR** and **KAREN CHAPMAN**
educate@thestar.com.my

The Star - 29 Aug 2008

Universiti Sains Malaysia (USM) and Universiti Malaya (UM) are frontrunners to receive apex university status. Many believe that by virtue of its history and status UM would be the natural choice but USM may spring a surprise.

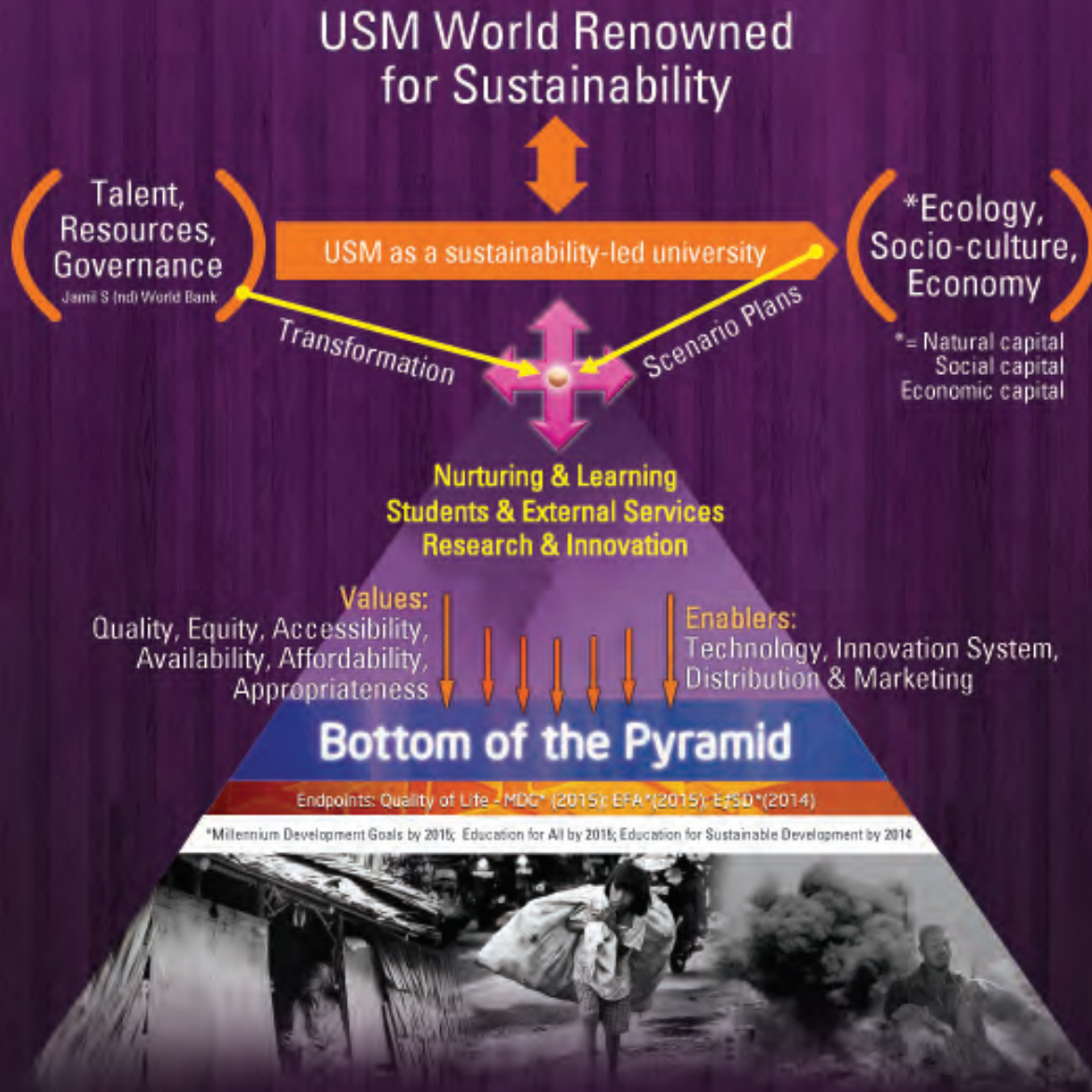


were International Islamic University Malaysia, Universiti Sains Islam Malaysia, Universiti Teknologi Malaysia as well as two private universities - Universiti Teknologi Petronas and Universiti Tenaga Nasional.



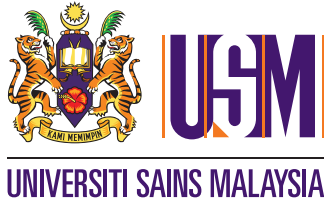
Rangka Kerja APEX USM

USM APEX Framework



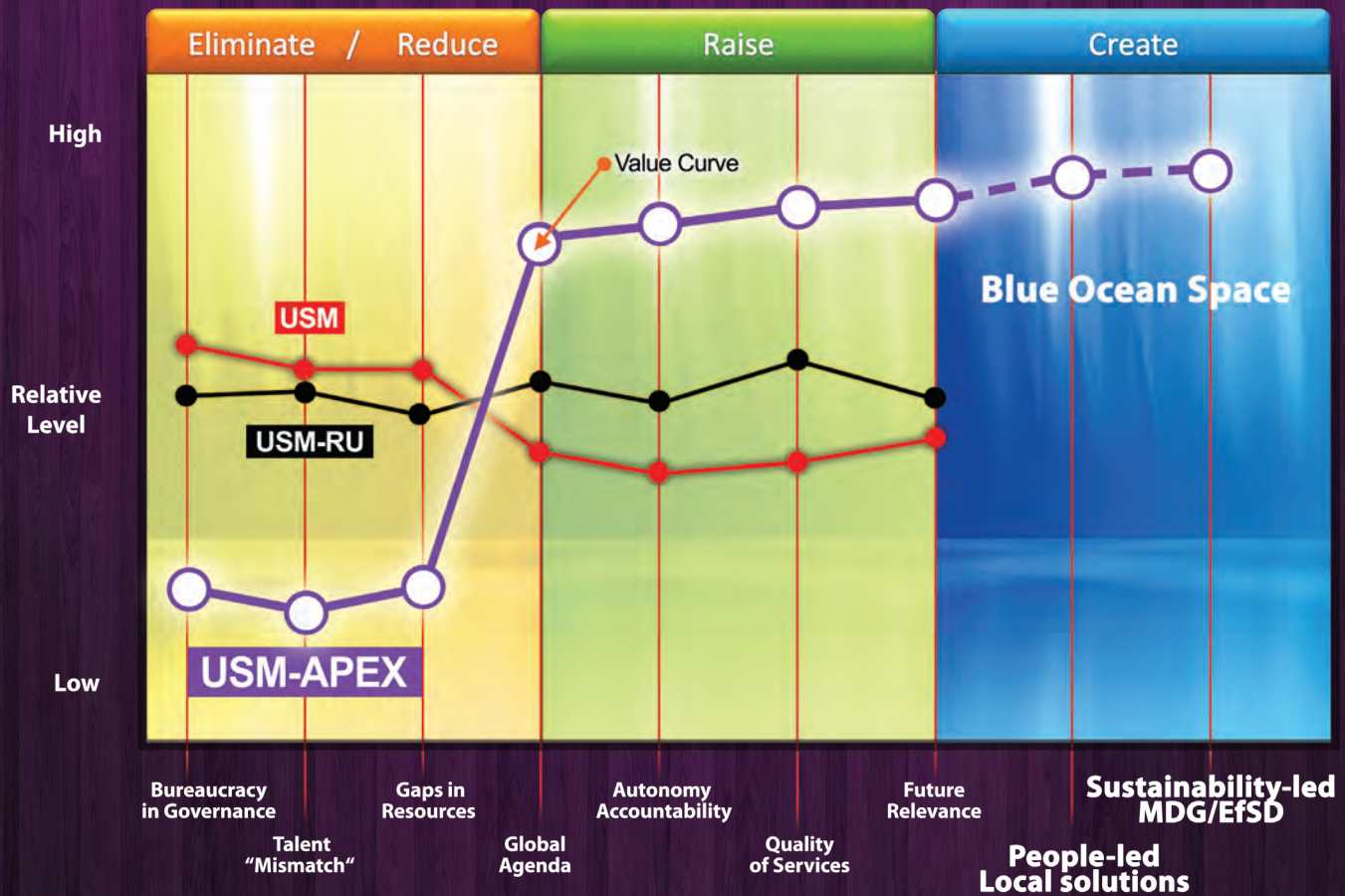
“The framework of sustainability and commitment to the *bottom billion* provides a renewed sense of intellectual and moral leadership and purpose to Malaysian universities in conditions of globalisation. Reframing and reinforcing the USM mission in normative terms are critical for the continued legitimacy of USM in Malaysian society.”

Transforming Higher Education for a Sustainable Tomorrow
2010 Laying The Foundation



Strategi “Blue Ocean” untuk APEX

Blue Ocean
Strategy for APEX



“Never try to imitate anybody, because as long as you benchmark with somebody, at best you will be like them. Meanwhile, the person you benchmark is ahead of you. You will never close the gap.”

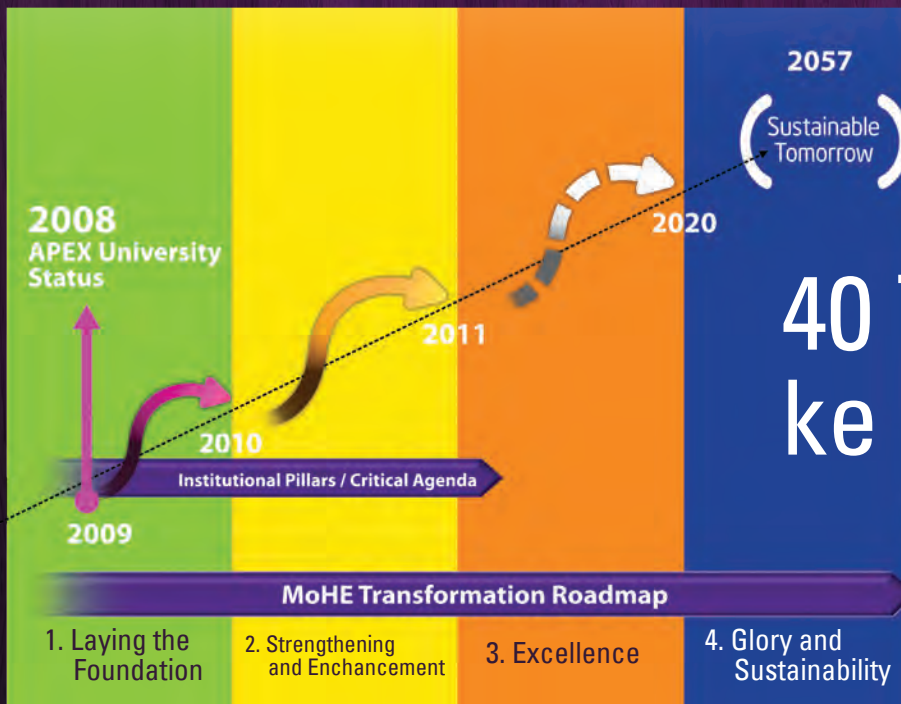
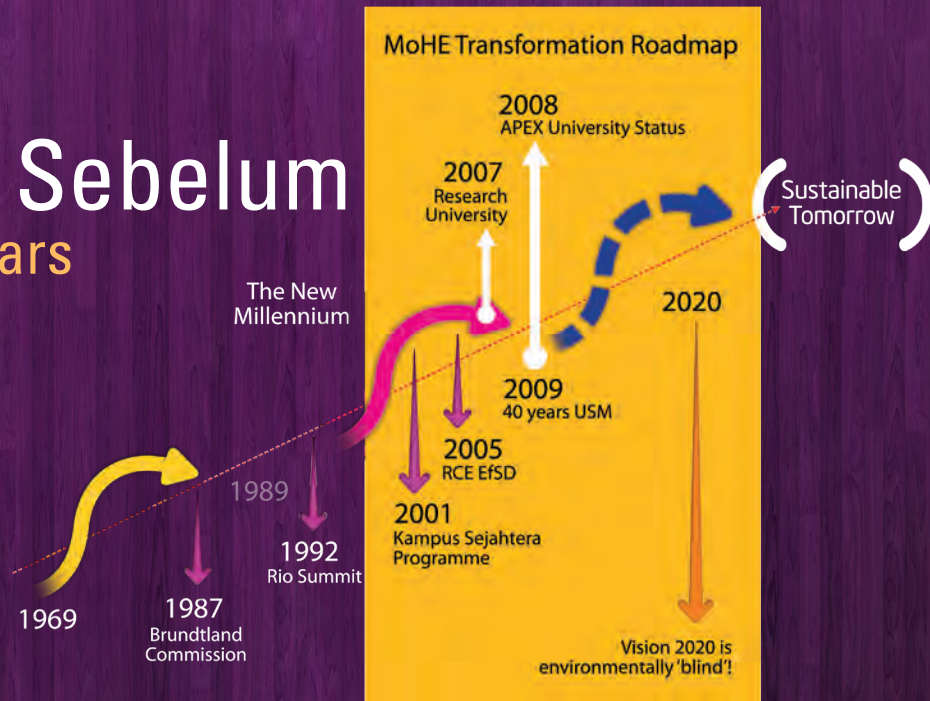
W. Chan Kim (2005), co-author,
Blue Ocean Strategy



Fasa-Fasa Transformasi

Transformation Phases

40 Tahun Sebelum Previous 40 Years



40 Tahun ke Hadapan Next 40 Years



Ekosistem Inovasi: Pelopor Aspirasi APEX

The Innovation Eco-System:
The Precursor to the Apex Ideals

Bidang inovasi di USM diperhalusi disusun dengan begitu teliti untuk **memberi khidmat kepada masyarakat** serta memastikan para penyelidiknya diberi **pengiktirafan sewajarnya** dan ganjaran atas daya usaha mereka itu.

Pada tahun 2008, USM telah memperkenalkan rangka sistem inovasinya yang tersendiri: **Taman Penyelidikan-Pembangunan-Pengkomersialan-Enterprise-Penyelidikan (R-D-C-E-P)**. Teras bagi setiap usaha penyelidikan menggambarkan semangat kerjasama dan kolaborasi kedua-dua pihak - dalam dan luaran. Bahagian Taman (Park – P) dalam rantai nilai R-D-C-E-P telah membuah hasil dengan terasnya **sains@usm**, Taman Inovasi milik USM.

Rangka Sistem Inovasi dibentuk bagi **menguatkan** lagi organisasi penyelidikan, menempatkan penilai, polisi dan prosedur penyelidikan untuk **pengkomersialan** serta memastikan ketersediaan **sumber manusia** yang berdaya saing di universiti ini.

*Innovation at USM is fine-tuned to **serve the society at large** and to ensure that researchers are given **due recognition** and rewards for their efforts.*

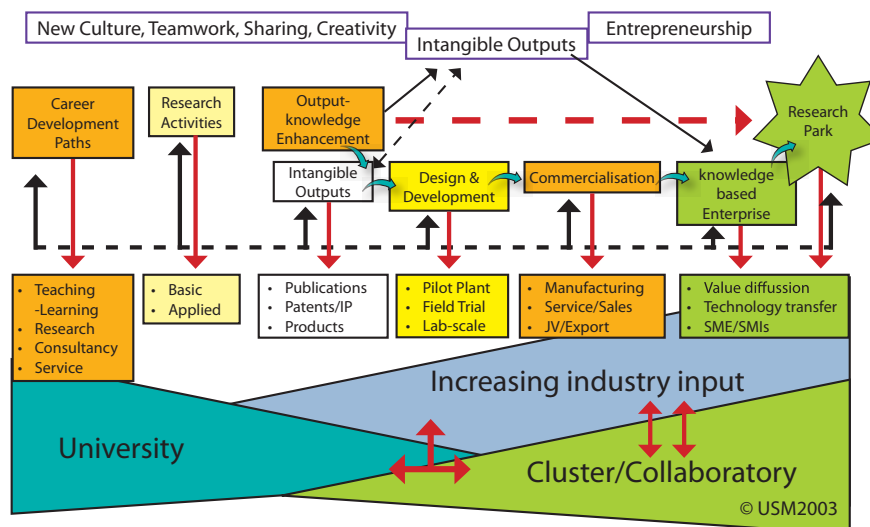
In 2008, USM established its own unique innovation system framework:

Research-Development-Commercialisation-Enterprises-Research Park (R-D-C-E-P).

*At the core of every research effort is a spirit of cooperation, collaboration both within and with external parties. The Park (P) section in R-D-C-E-P value chain came to fruition with the launching of **sains@usm**, USM's own Innovation Park.*

*The Innovation System Framework was formulated to **concretise** research organisations, to put in place research enablers, policies and procedures for **commercialisation** and to ensure the availability of able **human resources** at the university.*

THE INNOVATION SYSTEM - The USM Model





Perlembagaan Baru USM

The New USM Constitution

As at 2 June 2011

Pada bulan September 2008, Universiti Sains Malaysia telah diberi penghormatan menjadi **Universiti APEX** pertama negara dan diberi tempoh masa 5 tahun untuk mencapai matlamat yang ditetapkan oleh pihak Kementerian. USM meneruskan misi barunya dengan penuh bersemangat dan perkembangannya diperincikan dalam Buku Transformasi APEXnya.

Bagi memberi kesan terhadap misi APEXnya, USM telah menggubal satu **Perlembagaan baru** dengan peruntukan khusus untuk autonomi. Perlembagaan baru ini digubal setelah melakukan banyak perundingan dengan semua pemegang taruh. Hasilnya, Perlembagaan baru USM telah **diwartakan** pada **1 Julai 2011** selepas menerima Perkenan Agong di bawah Seksyen 26 AUKU.

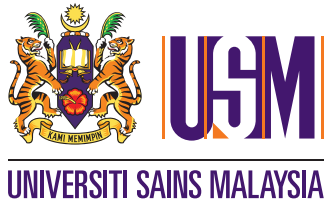
Perlembagaan baru USM ini memberi **autonomi** yang luas kepada Universiti dalam hal ehwal **pentadbiran, kewangan** dan **pelaksanaan dasar** yang menyokong misi APEX dan Universiti Penyelidikan (RU). Proses menghapuskan *red-tape* dan kerenah birokrasi turut dijelaskan dalam Perlembagaan baru ini. Peruntukan autonomi ini, bersama-sama dengan sokongan padu daripada pelbagai unit dan jabatan, dalam atau luaran, akan membantu USM memenuhi misi dan wawasannya.

*In September 2008, Universiti Sains Malaysia was granted the honour of being the nation's first **APEX University** and given a time frame of 5 years to achieve some Ministry set goals. USM pursued its new mission with vigour and its progress is detailed in its APEX Transformation Book.*

*To give effect to USM's APEX mission, USM has drafted a **new Constitution** with special provisions for autonomy. The new Constitution was drafted after many consultations with all the stakeholders, and as a result, the new USM Constitution was **gazetted** recently on **1 July 2011** after receiving Royal Order under Section 26 of AUKU.*

*The new USM Constitution provides fairly wide area of **autonomy** for the university in **administrative, financial** and **policy exercise**, supporting the mission of both APEX and Research University (RU). The process of unlocking the unnecessary red-tapes and bureaucracies are guided in this new Constitution. These autonomy provisions, together with support from various units and departments, internal or external to USM, the new Constitution will assist USM to fulfil its mission and vision.*





Penjenamaan Semula USM

Rebranding USM



Anak bulan dengan bintang pecah empat belas yang menghiasi kemuncak lambang, menandakan keanggotaan dan perpaduan tiga belas buah negeri dalam Malaysia dan Kerajaan Malaysia keseluruhannya. Ia juga membayangkan kebesaran dan keperibadian agama Islam sebagai agama rasmi negara Malaysia.



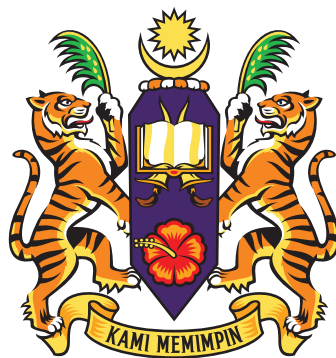
Dua ekor harimau, simbol khas bagi Tanah Melayu, menggambarkan sifat-sifat kekuatan, manakala pelepah daun bertitikan emas menandakan kesuburan ekonomi Malaysia.



Keseluruhan lambang itu didokong oleh cogan-kata yang berbunyi 'KAMI MEMIMPIN' bagi menggambarkan peranan sesebuah Universiti dalam bidang pengetahuan, pengajaran, penyelidikan dan perkhidmatan masyarakat.



Sebuah Perisai, di antara dua ekor harimau itu, ialah alat asli yang digunakan oleh bumiputera Malaysia dan warna ungu pula menandakan warna rasmi Universiti Sains Malaysia. Buku terbuka di bahagian atas perisai, diibaratkan sebagai unsur-unsur ilmu pengetahuan sesuai dengan peranan sesebuah pusat pengajian tinggi. Dua bilah kerins yang bersilang di belakangnya pula ialah senjata tua dalam kebudayaan Melayu yang dijadikan alat kebesaran dan kekuasaan Diraja Malaysia beserta di bawahnya dengan sekuntum bunga raya, bunga kebangsaan Malaysia.



UNIVERSITI SAINS MALAYSIA



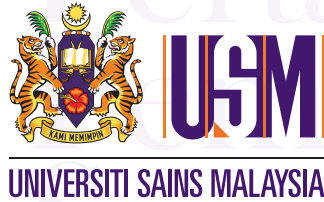
Empat garis tegak jingga pada logotaip USM melambangkan empat pegangan petunjuk USM yang berfungsi sebagai tiang utama dalam keseluruhan pembangunan Universiti.



Huruf putih S digunakan untuk melambangkan kesejahteraan (sejahtera) kampus serta cara pemikiran yang sihat dan cintakan ilmu. Huruf S yang juga melambangkan bidang Sains dan Sastera, berada dalam keadaan simetrik yang membawa makna keseimbangan dan keharmonian dalam pencarian ilmu. Pembukaan di bahagian atas dan bawah huruf S mewakili ciri khusus 'out of the box', selaras dengan aspirasi inovatif USM seperti yang tercatat dalam misi Universiti. Perkaitan antara huruf S dan huruf-huruf U dan M melambangkan perhubungan erat Universiti dan masyarakat Malaysia melalui ilmu pengetahuan yang dijana dan disebar.



Bentuk segitiga yang berwarna jingga melambangkan kekukuhan USM, berdasarkan kepada tiga nilai yang menjadi teras Universiti yakni Unggul, Sejahtera dan Mesra. Kedudukan segitiga ini pada tapak huruf S menandakan kepentingan ketiga-tiga nilai universiti yang menjadi penyangga kepada moto USM, 'Kami Memimpin'.



Pertama di Malaysia - Pemilihan Senat USM Secara Proses Pengundian

First in Malaysia -
USM Senate Appointment on Election

Pada 11 Ogos 2011, Universiti Sains Malaysia (USM) telah mencipta sejarah dengan mengadakan **pemilihan Ahli Senat** daripada kalangan ahli akademik (profesor) **melalui kaedah pengundian** dan bukannya secara lantikan oleh Naib Canselor seperti yang diamalkan sebelum ini.

Proses pengundian ini telah diadakan secara serentak di **keempat-empat kampus** USM termasuk Kampus Induk Pulau Pinang, Kampus Kejuruteraan Nibong Tebal, Kampus Kesihatan Kubang Kerian dan Institut Perubatan dan Pergigian Termaju Kepala Batas.

Senat USM kini mempunyai keseluruhan **87 ahli yang terdiri daripada 41 ketua jabatan, 41 profesor, naib canselor dan empat timbalan naib canselor.**

Senat universiti berperanan sebagai **pihak berkuasa tertinggi** yang menggubal polisi akademik di USM termasuk menetapkan kriteria pemilihan pelajar dan menentukan bilangan kemasukan pelajar baru.

On August 11, 2011, Universiti Sains Malaysia (USM) has made history holding the **election of the Senate** from among academics (professors) **through voting** rather than by appointment by the Vice-Chancellor as practiced before.

This **voting process** was held simultaneously at **four campuses**, including main campus of USM in Penang, Engineering Campus in Nibong Tebal, Health Campus in Kubang Kerian and the Institute of Advanced Medical and Dental in Kepala Batas.

USM Senate now has a total number of **87 members, comprising 41 heads of department, 41 professors, vice chancellors and four deputy vice-chancellors.**

The Senate serves as the **highest authority** in the formulation of academic policy, including setting criteria for USM students and determine the number of new intakes.

16 **NATION** The Star, FRIDAY 12 AUGUST 2011

USM holds first Senate polls

195 candidates vie for 41 seats in one-day election

GEORGE TOWN: Universiti Sains Malaysia (USM) held elections for the post of Senate members, a first of its kind for a public university in the country.

A total of 195 candidates vied for 41 seats (41 Senate memberships) in the one-day polling which were held from 9am-4pm at the main campus here and three other branch campuses.

The voters were confined to university professors, associate professors and visiting professors numbering 576 people.

USM vice-chancellor Tan Sri Datuk Dzulkifli Abdul Razak said he hoped the elections would usher the beginning of an autonomy-driven governance of the university.

"Previously, 61 members of the Senate were appointed by the vice-chancellor. They comprise 41 heads of departments and 20 people holding the rank of professors.

"Under the new constitution, we have expanded the Senate membership to 82 people. Of this, half of them would be elected," he said, after casting his ballot at the university's main campus here yesterday.

The voting would be done based on the allocation of seats to five clusters - Hybrid (nine seats), Arts (four), Sciences (13), Engineering (four), Health and Medical (seven) and Research Centre/Services (four).

Dzulkifli said under the new constitution, a number of new institu-

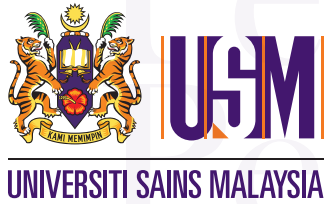
the public can complain on university matters through whistleblowing. This is for better check and balance," he said.

The university Senate is the highest authority in monitoring and implementing academic matters, such as approving the list of courses to be offered by each school.

Among those spotted casting their ballot papers were Dean of Language, Literacy and Translation Centre, Prof Dr Ambigapathy Pandian and School of Communication dean Prof Dr Adnan Hussein.

Dr Ambigapathy said students would probably view the election as a move towards further democratisation of the university.





Pejabat Ombudsman: Platform Aduan Warga USM

Ombudsman Office as Voice Platform of USM community

Menjelang akhir tahun 2011, Universiti Sains Malaysia (USM) bakal menubuhkan sebuah Pejabat Ombudsman sebagai satu **platform rasmi** untuk kakitangan dan mahasiswa **menyuarakan ketidakpuashatian** mereka terhadap pelbagai isu di universiti.

Pejabat ini akan menerima dan **menyiasat aduan di samping melindungi keselamatan dan identiti pemberi maklumat** yang berjaya membongkar sebarang penyalahgunaan kuasa atau penglibatan kakitangan USM dalam **aktiviti yang menyalahi undang-undang dan perlembagaan USM**.

Selaras dengan Seksyen 15 Perlembagaan USM, penubuhan Pejabat Ombudsman ini adalah sebahagian daripada teras penting universiti dalam menerapkan **amalan demokrasi** disamping pemilihan ahli senat melalui proses pengundian.

By the end of 2011, Universiti Sains Malaysia (USM) will establish an Ombudsman Office to act as an **official platform** to the staff and students **in voicing their dissatisfaction** on various issues in the university.

This office will receive and **investigate complaints as well as protect the security and identity of the whistleblower** who successfully uncover any abuse of power or USM staff involvement in **activities that violate laws and USM constitution**.

In accordance with Section 15 of the USM Constitution, the establishment of the Ombudsman Office is part of the essential core of the university in implementing **democratic practices** apart from conducting election of Senate members through the voting process.

24 NATION

NEW STRAITS TIMES

USM to set up ombudsman

By Yiswaree Palansamy

yiswaree@nst.com.my

GEORGE TOWN: University Sains Malaysia (USM) will establish an ombudsman office to provide a platform for its academic staff and undergraduates to voice out their dissatisfactions on various issues in the university.

academic fraternity.

The ombudsman office will be established by the end of this year and will be in accordance with Section 15 of the University Sains Malaysia Constitution.

The formation of the ombudsman office will add another feather to USM's hat, which is also the country's first and only Apex status accredited

Earlier, Dzulkifli said the formation of the senate marks the beginning of an autonomous driven governance in USM, as the senate will be overseeing policy and academic courses development matters.

He said they were also looking at having an undergraduate in the senate, to enable all quarters to have a representative.

MUnSYI

PENGAMBILAN PELAJAR YANG HOLISTIK

Pada tahun 2009, Kementerian Pengajian Tinggi telah memberi kuasa **autonomi** kepada USM dalam **mengendalikan pengambilan masuk pelajar**nya sendiri sebagai sebahagian daripada amalan dalam memastikan universiti mendapat **calon-calon yang sesuai** selaras dengan konsep 'individu yang tepat untuk program yang betul'.

Pemohon dikehendaki untuk menduduki pemeriksaan **Inventori Tahunan Pemilihan Universiti Malaysia (MUnSYI)**. Proses pemilihan melibatkan satu siri ujian dan temubual yang merangkumi **kualiti intrinsik** calon pemohon (merangkumi aspek minat, keperibadian, integriti, kestabilan emosi).

THE HOLISTIC INTAKE APPROACH

In 2009, USM was given **autonomy** by the Ministry of Higher Education to **conduct its own student intake**, as part of the effort to ensure that the university is getting the **most suitable candidates** based on 'right individual for the right programme' concept.

Applicants were required to sit for the **Malaysian University Selection Yearly Inventory (MUnSYI)**. The selection process involved a series of tests and interviews which includes determination of applicants' **intrinsic quality** (career interest, personality, integrity, emotional agility).



USM: No quota, selection based on meritocracy

By Bernard Cheah and Opalyn Mok
@bernhardcheah @opalynmok

GEORGE TOWN: University Malaysia (USM) will practice autonomy in its selection of students for its university, Higher Education Minister Datuk Seri Mohamed Khairuddin said yesterday.

"The quota system, it's based on the best of the best, a strong vice-chancellor and a good selection of staff," he said.

USM will have to provide an input on the transformation road map and the university's vision and mission.

USM will have to provide an input on the transformation road map and the university's vision and mission.

government to be world-class." The three criteria that USM fulfilled were its state-of-tradition, its transformation plan, and its open and transparent system in choosing and transferring its vice-chancellor and its future plans in education, research and technology.

He expressed the hope that there would be focus in nurturing diversity, inclusion and engagement with the autonomy given.

He said the university, which will receive special assistance and support from the government in terms of administration and other requirements, should be given time to be among the top 200 universities in the world within five years.

USM Chancellor Prof Tan Sri Dr. Abdul Razak, who presides over the university's affairs, responded.

Earlier, Khairuddin witnessed a memorandum of understanding between USM and KLEC, signed by USM vice-chancellor, Tan Sri Dr. Abdul Razak, and KLEC partner, Datuk Seri Mohamed Khairuddin.

Congratulating USM, Khairuddin said the government will continue to support the university's development and not practice discrimination based on race, religion or political affiliation.

In a statement, he said USM's challenge now is to be ranked in the top 200 in ratings such as the Times Higher Education Supplement (THESE) and QS World University Rankings (QS) in 2020.

"In the latest THESE ranking, USM is ranked 200th and it is only by choosing the best that USM can realise its goal of being one of the top 100 universities in the world," he said.

USM's vice-chancellor, Tan Sri Dr. Abdul Razak, said the choice of USM as an apex university will be a massive boost for USM in particular and Penang in general.

"With the new status, USM is now in the best position to transform Penang into a knowledge hub as it will have greater autonomy and larger funding," he said.

He said one of the key criteria of an apex university is ensuring stringent selection criteria for selecting lecturers and deans as well as ensuring the best students.

The state government hopes to have an apex university and cooperation is important that USM play a role in the lives of the wider community, especially in the areas of research and innovation, so that the university can contribute to the next level in the state.





Bersama untuk Kecemerlangan Universiti

Together for University
Excellence

“... bekerjasama dan bekerja bersama-sama dalam pemajuan USM (Universiti Sains Malaysia) pada tahun ini dan tahun-tahun berikutnya. **Warga USM** tidak sepatutnya bekerja secara ‘**silo**’ tetapi harus berkongsi kekuatan, saling **bersinergi**, saling bahu-membahu, saling berkongsi hasrat dan **aspirasi** untuk **membangunkan** masa depan demi mencapai kejayaan dan menzahirkan **kecemerlangan**”

Profesor Dato’ Omar Osman berpesan dalam ucapan tahunannya yang bertajuk ‘Bersama Untuk Kecemerlangan Universiti 2012: Menzahir Pencapaian’ atau ringkasnya BUKU:2012 kepada semua kakitangan akademik dan sokongan, pemegang taruh dan siswa-siswi USM.

“... collaboration and putting our hands together in order to drive USM towards excellence this year and the years to come. **USM community** should not work in **silo** but need to share their expertise, synergistically, in high cooperation and to share **aspirations** for future **development** to drive towards success and **excellence**”

Professor Dato’ Omar Osman, in his inaugural annual address entitled “Together We Strive for University Excellence: Realizing achievements” or BUKU 2012 to all academicians, staff, stake holders and students.



Bersama Untuk Kecemerlangan Universiti 2012



PROFESOR DATO’ DR OMAR OSMAN
Naib Canselor USM

“A university is more than a place to earn a degree. It is a garden of knowledge where people learn, innovate, and flourish. You **learn to break out of your comfort zone, and become an innovator.**”



Professor Dato' Omar Osman
Vice-Chancellor Universiti Sains Malaysia

DELIVERING
NA

TRANSFORMING THE LIVES OF THE
**"BOTTOM
BILLIONS"**

MENGUBAH KEHIDUPAN
**"MASYARAKAT
TERKEBAWAH"**

Over 2 billion people live on less than \$2 a day. This is the bottom billion. They are the poorest of the poor and live in the most disadvantaged parts of the world. They are the bottom billion. They are the poorest of the poor and live in the most disadvantaged parts of the world. They are the bottom billion. They are the poorest of the poor and live in the most disadvantaged parts of the world.

In 2012, U-M received \$100,000 from the National Endowment for Democracy (NED) to support the "Safe Birth" project in Indonesia. The project aims to improve the lives of the bottom billion by providing access to safe and affordable birth services. The project will focus on providing training and support to midwives and community health workers. The project will also provide financial incentives to encourage women to use birth services. The project will be implemented in five districts in Indonesia.

The "Safe Birth" project is a joint effort of U-M, the National Endowment for Democracy (NED), and the Indonesian Ministry of Health. The project is being implemented by U-M's Center for Global Health and the Center for International Programs. The project is expected to have a significant impact on the lives of the bottom billion in Indonesia.



U-M
THE APEX UNIVERSITY
**APEX
Delivering
Excellence
2012 Grants**
NADI QZQ

...G EXCELLENCE
DI U.S.M.

**INISIATIF
KEPIMPINAN
MENYEMAI BE...**

Pembangunan mod...
penting dalam mem...
potensi sebenar me...
penubuhan Sekret...
dan **PIMPIN** Sisw...
komitmen USM dal...
Malaysia masa hada...



GERBANG KE ARAH KOMUNITI PENCINTA ALAM

Teknologi Membran di Malaysia dilihat mempunyai potensi yang besar untuk membangun, namun disebabkan monopoli oleh syarikat gergasi, maka ia dianggap mahal untuk diteruskan.

Pembentukan **Kluster Teknologi dan Sains Membran (MSTC)** baru-baru ini telah membangunkan masyarakat hijau yang lestari melalui pemuliharaan air, peningkatan bioperubatan dan revolusi tenaga.

MSTC dibahagikan kepada **Penyelidikan Air, Kumpulan Penyelidikan Bioperubatan dan Kumpulan Penyelidikan Tenaga** yang bekerjasama untuk membangunkan masyarakat hijau melalui penggunaan teknologi dan sains membran yang lestari.

Perkara ini dilihat sebagai pencapaian besar ke arah **masyarakat hijau** yang berusaha ke arah persekitaran hidup dalam bentuk sosial, ekonomi dan aktiviti perindustrian.

A GATEWAY TOWARDS A GREENER COMMUNITY

Membrane technology in Malaysia is seen to have a great potential for growth, but due to monopolisation among giant corporations, this technology is deemed expensive to be pursued.

The formation of **Membrane Science and Technology Cluster (MSTC)** is currently developing a sustainable development of greener society via Water Reclamation, Biomedical Enhancement and Energy Revolution.

MSTC is divided into **Water Research, Biomedical Research Group and Energy Research Group** which works tightly together to develop green society using sustainable membrane science and technology.

This is seen as a great leap towards **green society** dedicated to environmentalism in social, economic and industrial activities.



PEMANGKIN PERKONGSIAN STRATEGIK BAGI KELESTARIAN HARI ESOK

Bahagian Jaringan Industri dan Masyarakat (BJIM) secara khususnya bertanggungjawab **mempromosikan kelestarian** dalam semua aspek seperti ekonomi, sosial, budaya, pendidikan, kesihatan dan alam sekitar, demi pembangunan dan **transformasi negara**.

Projek-projek BJIM menyokong peranan universiti, dengan perkongsian industri seharusnya terlibat sama dalam pembangunan masyarakat di peringkat tempatan, negara dan antarabangsa untuk memacu transformasi **golongan terkebahawah** dengan **merapatkan jurang ekonomi dan pendidikan** antara si miskin dengan golongan lain.

USM

CATALYSING STRATEGIC PARTNERSHIPS FOR A SUSTAINABLE TOMORROW

The Division of Industry and Community Network (BJIM) has been specifically charged to **promote sustainability** in all aspects such as economy, social, culture, education, health and environment, for the development and **transformation of the nation**.

BJIM projects support the view that universities in partnership with industries should **engage** themselves in the development of the local, national and international community to accelerate the transformation of the disadvantaged **bottom billions** by **narrowing the economic and educational gaps** between them and the rest of the community.



STAND UP, SPEAK OUT!

FIRST STUDENT PARLIAMENT IN MALAYSIA

In 2010, USM proudly presented Malaysia's very first Student Parliament, known as the **Students' Consultative Council**. This event saw the active participation of students from the Students' Representative Council, the Council of Residents' Hostels and representatives from student bodies and clubs.

With the Students' Consultative Council:

- Members are able to debate issues independently without being linked to any particular struggle
- Observers may participate through a special session held prior to the voting of the proposals
- Complete freedom of expression is practiced; debates are in the absence of university authorities

Proposals from the Students' Consultative Council are submitted to the university authorities – this means students now **have a voice in policy formulations**.

Student's Consultative Assembly at Dewan Persidangan Universiti, on 26 March 2011.



ANDA BERHAK BERSUARA!

PARLIMEN PELAJAR PERTAMA DI MALAYSIA

Pada tahun 2010, USM telah memartabatkan hak bersuara dikalangan mahasiswa dengan pengwujudan Parlimen Pelajar terawal di Malaysia yang dikenali sebagai **Majlis Perundingan Pelajar**. Inisiatif ini mendapat penglibatan secara aktif oleh Majlis Perwakilan Pelajar, Persatuan Kolej Kediaman dan Persatuan Mahasiswa.

Menerusi Majlis Perundingan Pelajar:

- Setiap ahli boleh membahaskan segala isu berkaitan secara bebas tanpa berpaksikan mana-mana pihak tertentu
- Pemerhati boleh terlibat melalui sesi khas yang diadakan sebelum proses undian cadangan berlangsung
- Mengamalkan hak kebebasan bersuara; perbahasan berlangsung tanpa kehadiran pihak pengurusan universiti

Cadangan-cadangan dari sidang Majlis Perundingan Pelajar akan dibawa kepada perhatian pihak pentadbiran universiti – platform ini memberi ruang kepada pelajar **menyuarakan pendapat dalam pembentukan polisi universiti**.

INISIATIF

KEPIMPINAN PELAJAR –

MENYEMAI BENIH UNTUK KELESTARIAN HARI ESOK

Pembangunan **modal insan** merupakan langkah penting dalam memastikan mahasiswa mencapai potensi sebenar mereka. Pelbagai inisiatif seperti penubuhan **Sekretariat Suka-relawan** (2007) dan **PIMPIN Siswa** (2009) yang menzahirkan komitmen USM dalam membentuk bakal pemimpin Malaysia masa hadapan.

STUDENT LEADERSHIP

INITIATIVES – SOWING THE SEED FOR A SUSTAINABLE TOMORROW

*The development of **human capital** is an important step in ensuring that students reach their true potential. Various initiatives such as the establishment of **Secretariat of Volunteerism** (2007) and the **PIMPIN Siswa** (2009) exemplify USM's commitment in nurturing Malaysia's future leaders.*



MENCAPAI KESEIMBANGAN – MEMUPUK BUDAYA KECEMERLANGAN

Pada tahun 2010, kecemerlangan USM dalam bidang sukan terbukti dengan perkembangan dan kejayaannya yang silih berganti.

Kelab Bola Sepak USM (USM-FC) telah mencatat sejarah bola sepak Malaysia dengan menjadi pasukan bola sepak universiti pertama di negara yang berjaya layak ke persada bola sepak profesional Malaysia.

USM juga boleh berbangga dengan penubuhan Pusat Kecemerlangan Sukan Renang dan Pusat Sukan Tumpuan Hoki dalam usaha melahirkan atlet berkaliber tinggi yang mampu mencapai prestasi bertaraf dunia di samping dapat mengekalkan standard dan kelayakan akademik yang tinggi.

STRIKING A BALANCE – NURTURING A CULTURE OF EXCELLENCE

In 2010, USM's athletic excellence has been proven by a long list of developments and achievements.

The USM Football Club (USM-FC) had made its mark in Malaysian football history by being the first university football team in the country to qualify for the professional world of Malaysian football.

USM prides itself as well in establishing a Swimming Sports Excellence Centre and a Hockey Focus Sports Centre in its goal to produce high-calibre athletes capable of world-class performance while retaining high academic standards and qualifications.



Athletes' achievement to boost USM's image

USM is selected as Sports Excellence Centre for swimming

In 2011, USM FC made a new mark in the history of Malaysian football by being the first public higher learning institution to compete in the Premier League

HADIAH NOBEL ALTERNATIF LAUREATES OF THE RIGHT LIVELIHOOD AWARD

Right Livelihood College (RLC) merupakan **inisiatif pembinaan kapasiti global** bagi *Right Livelihood Award Foundation* yang bermatlamat untuk memanfaatkan dan menyebarkan luas **ilmu dan pengalaman Laureate of the Right Livelihood Award**, yang juga dikenali sebagai “**Hadiah Nobel Alternatif**”. Hal ini dilakukan menerusi promosi pendidikan, penyelidikan, pemahaman awam dan aktiviti praktikal yang menyumbang kepada keseimbangan ekologi global, pembasman kemiskinan material dan spiritual, serta keamanan dan keadilan yang berterusan di dunia.

Matlamat utama RLC ialah :

- Membolehkan ilmu pengetahuan **pemenang hadiah Laureates turut dikongsi** oleh orang ramai
- Menggalakkan **suntikan pengetahuan** dalam projek *Award Laureates*.
- **Menghubungkan komuniti global** Hadiah Laureates untuk membantu menghasilkan sinergi, menggandakan pengetahuan yang diuji dan mewujudkan golongan kritis agar dapat mengemukakan matlamat-matlamat mereka.
- Menyediakan **hab** dan inkubator bagi menggalakkan serta menggandakan penyelesaian-penyelesaian yang tepat terhadap permasalahan global yang kritikal.
- **Berhubung secara aktif** dengan institusi-institusi sealiran yang terunggul, yang memiliki program-program selari dengan matlamat Yayasan *Right Livelihood Award*.

Setiap *Right Livelihood Laureate* secara automatik menjadi **Felo Right Livelihood College**. Mereka berperanan sebagai sumber utama yang menyampaikan bahan pembelajaran menerusi **libatsama**, yang merangkumi isu-isu penting seperti perlindungan alam sekitar, hak asasi manusia, kedamaian, teknologi alternatif dan model perniagaan, budaya, kelestarian, pembangunan dan kanak-kanak. Sehingga kini, terdapat **137 Laureate** dari 60 buah negara. Berikut ialah beberapa aktiviti yang dijalankan oleh RLC melalui kerjasama dengan organisasi rakan kongsi yang lain :

The Right Livelihood College (RLC) is a **global capacity building initiative** of the *Right Livelihood Award Foundation* which aims to harness and spread the **knowledge and experience** of Laureates of the *Right Livelihood Award*, also known as the “**Alternative Nobel Prize**”. It does this through promotion of education, research, public understanding and practical activities which contribute to a global ecological balance, eliminating material and spiritual poverty, and lasting peace and justice in the world.

RLC’s main goals are:

- To make the knowledge of Laureates **accessible** to the general public
- To foster the **injection of know-how** into Award Laureates’ projects
- To **connect the global community** of Award Laureates to help release synergies, multiply tested know-how and create the critical mass to help bring their common goals forward.
- To provide a **‘hub’** and an incubator for promoting and multiplying the most successful solutions to urgent global problems
- To **actively link** with the most excellent like-minded institutions fostering programmes that resonate with the goals of the *Right Livelihood Award Foundation*

Every *Right Livelihood Laureate* is automatically a **Fellow** of the *Right Livelihood College*. Their role is to be the **principal source** of supply of learning resources through **engagement**, covering key issues that include protection of the environment, human rights, peace, alternative technologies and business models, culture, sustainability, development and children. There are currently **137 Laureates** from 60 countries.

The following are some of the activities, which the College carries out in collaboration with other partner organizations:

• Syarahan	• Biasiswa
• Pelatihan	• Seminar dan Bengkel Antarabangsa
• Penerbitan	• Filem
• Siri Tindakan	• Penaiktarafan

• Lectures	• Fellowships
• Internships	• International Seminars and Workshops
• Publications	• Films
• Days of Action Series	• Up scaling



USM MENYAHUT CABARAN KELESTARIAN GLOBAL

Pada tahun 2009, Pusat Kajian Kelestarian Global (CGSS) ditubuhkan bagi **mengubahsuaikan kaedah pengajaran, penyelidikan, dan penglibatannya masyarakat**, merintis wawasan USM untuk menjadi **universiti pelopor kelestarian** di peringkat serantau dan antarabangsa.

Peranan utama CGSS merangkumi :

- Berfungsi sebagai **forum** bagi dialog dan idea-dea baru kreatif
- Berfungsi sebagai **hab** bagi para cendekiawan antarabangsa
- Merapatkan jurang di antara komuniti akademik negara / antarabangsa dengan pembuat dasar, sektor korporat dan masyarakat
- Menyumbang kepada **pembinaan kapasiti** melalui program mahasiswa dan siswazah

Antara penyelidikan utama CGSS adalah kajian bertajuk, *“A Sustainable Strategy for Assessing Rural Vulnerability and Promoting Sustainable Rural Lifestyles for Rakyat Sejahtera and enhancing Sustainable Living within USM and its Neighboring Communities”* serta penubuhan **Pejabat Lestari** untuk melaksanakan **Audit Kelestarian** di dalam kampus USM. Sebagai sebahagian daripada audit tersebut, CGSS telah menghasilkan **Metodologi Penilaian Kelestarian (SAM)**. SAM bertujuan menilai tahap komponen kelestarian dalam kursus, program, penyelidikan dan khidmat masyarakat yang sedia ada di USM. Bersama-sama dengan **Rangka dan Lembaran Kerja** petunjuk kelestarian, ia akan menjadi asas untuk memantau dan menilai aliran utama kelestarian di Universiti.

USM TAKES ON GLOBAL SUSTAINABILITY CHALLENGES

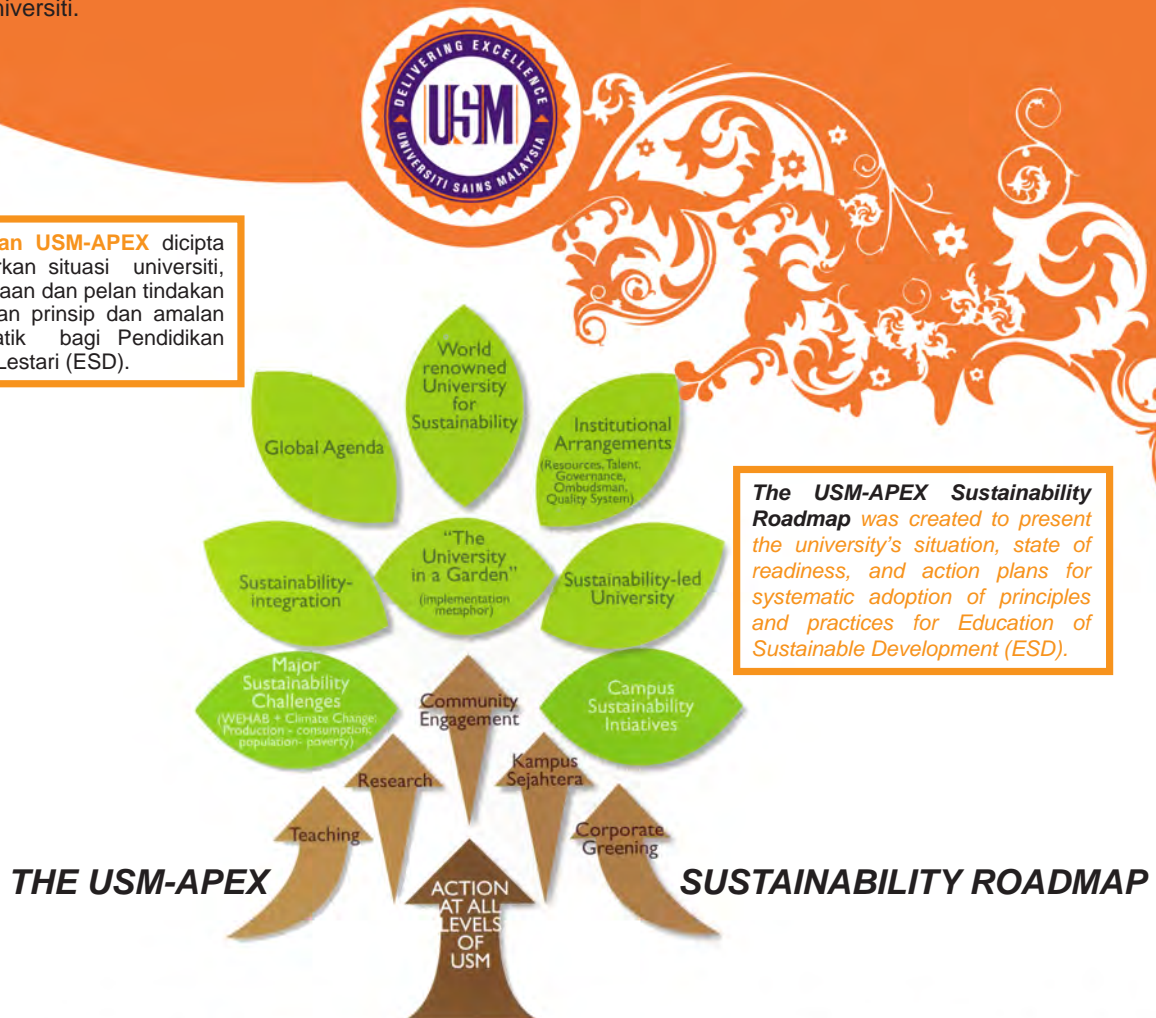
*In 2009, the Centre for Global Sustainability Studies (CGSS) was established to **revamp teaching methods, research and community engagement**, to spearhead USM’s vision of becoming a **sustainability-led university** in regional and international levels.*

Ultimate **roles** of CGSS include:

- To serve as a **forum** for dialogue and creative new ideas
- To serve as a **hub** for international scholars
- To bridge national/international academic community and the policy-makers, corporate sector and civil society
- To contribute to **capacity building** through undergraduate and postgraduate programme

Among CGSS’s research activities include, *“A Sustainable Strategy for Assessing Rural Vulnerability and Promoting Sustainable Rural Lifestyles for Rakyat Sejahtera and enhancing Sustainable Living within USM and its Neighboring Communities”* and the setting-up of a **Sustainability Office** to implement the **Sustainability audits** in the USM campus. As part and parcel of the audits, CGSS has developed the **Sustainability Assessment Methodology (SAM)**. SAM aims to assess the extent of sustainability components in existing courses, programmes, research and community projects in USM. This, together with the sustainability indicator **Framework and Worksheets** will become the basis for the monitoring and evaluation of sustainability mainstreaming within the university.

Peta Kelestarian USM-APEX dicipta untuk menzahirkan situasi universiti, keadaan kesediaan dan pelan tindakan bagi penggunaan prinsip dan amalan secara sistematik bagi Pendidikan Pembangunan Lestari (ESD).



TRANSFORMING THE LIVES OF THE 'BOTTOM BILLIONS'

Community engagement and transforming the lives of the society's poor and neglected; the world's 'bottom billion', is an important aspect of the USM's vision. It has partnered with local and international institutions to support **poverty-stricken** communities as well as calamity victims or victims of unrest by providing **quality, opportunities, and hope**.

In 2010, USM in cooperation with ESIH (Ecole Supérieure d'Infotronique d'Haiti) reached out to the victims of the **Haiti earthquake** through the **development** of its **human capital, medical and health system, and capacities in natural disaster planning**. USM also signed a MoU with MERCY Malaysia in 2010 to send a team of medical experts and plastic surgeons to **Dhaka, Bangladesh** to offer **free surgery** to children with **cleft lips and palates**.

Via the Mindanao Educators Peace Summit 2010, discussions, **visioning, and action towards peace education** were held to help develop **academic leadership** for peace and development in **Southern Philippines**.

MENGUBAH KEHIDUPAN 'MASYARAKAT TERKEBAWAH'

Antara aspek penting visi USM adalah melibatkan diri dalam khidmat komuniti serta mentransformasi kehidupan masyarakat yang terkebawah ('bottom billions') dan miskin. USM telah bekerjasama dengan institusi tempatan dan antarabangsa untuk membantu masyarakat yang **dilanda masalah kemiskinan** dan bencana dalam membentuk **kualiti, peluang** serta **harapan** kehidupan baru kepada mereka.

Pada tahun 2010, USM dengan kerjasama ESIH (Ecole Supérieure d'Infotronique d'Haiti) menghulurkan bantuan kepada mangsa-mangsa **gempa bumi Haiti** melalui **pembangunan modal insan, sistem kesihatan dan perubatan, dan latihan dalam perancangan menghadapi bencana alam**. USM juga menandatangani perjanjian MoU dengan Mercy Malaysia sejak tahun 2010 untuk menghantar pasukan-pasukan pakar perubatan dan pembedahan plastik ke **Dhaka, Bangladesh** untuk memberi **pembedahan percuma** kepada kanak-kanak yang mempunyai penyakit **rekahan bibir dan lelangit**.

Menerusi penglibatan dalam Sidang Kemuncak Pendidik Mindanao 2010, perbincangan, **penetapan visi dan hala tuju pendidikan keamanan** telah diadakan untuk membantu membangunkan **kepimpinan akademik** demi keamanan di **Selatan Filipina**.



Children in Dhaka, Bangladesh

Visit to the Medical Faculty of Notre Dame University Haiti, 1 October 2010.

An operation of cleft lips patient treated by Professor Ahmad Sukari Halim in Dhaka Community Hospital.

USM MELEBARKAN SAYAPNYA KE SELURUH DUNIA

USM giat menjalinkan rangkaian hubungan dan perkongsian dalam bidang akademik, penyelidikan, komuniti dan industri bersama institusi-institusi pengajian tinggi di seluruh dunia. Rangkaian-rangkaian hubungan ini telah dilaporkan dalam sebuah projek khas iaitu USM LINKS yang meliputi hubungan rangkaian antarabangsa termasuk universiti-universiti, kolej-kolej dan pusat-pusat antarabangsa melalui pelbagai penerbitan, projek, aktiviti makmal, perniagaan dan sebagainya.

USM mempunyai rangkaian antarabangsa terutama dengan negara-negara Asia seperti Jepun, Indonesia, Thailand, Filipina, India dan banyak lagi. Walau bagaimanapun, USM juga mempunyai hubungan penyelidikan yang kuat dengan Arab Saudi, Amerika Syarikat, Australia, dan United Kingdom.

USM SPREADS WINGS THROUGH OUT THE WORLD

Universiti Sains Malaysia is committed to foster closer linkages and partnerships with institutions of higher learning from across the world. These linkages are reported by a special project called USM LINKS which covers international linkages by academic, research, community and industrial purposes. These links involve linkages between International Universities, Colleges and Centres with USM in terms of joint publications, joint projects, joint laboratories, joint businesses and many more.

USM has a vast international network especially with Asian countries like Japan, Indonesia, Thailand, Philippines, India and many more. However, USM also has strong academic and research network with Saudi Arabia, United States, Australia, and United Kingdom.

	<i>Academic Links / Hubungan Akademik</i>	<i>Research Links / Hubungan Penyelidikan</i>	<i>Community Links / Hubungan Komuniti</i>	<i>Industrial Links / Hubungan Industri</i>
<i>Total / Jumlah</i>	554	221	85	43
<i>Percentage / Peratus</i>	61.4%	24.4%	9.4%	4.8%

Jadual di atas menunjukkan data-data tentang rangkaian hubungan akademik, penyelidikan, komuniti dan industri USM dengan negara luar.

The number of linkages reported under each section are as listed in table above.



PEMBELAJARAN MUDAH ALIH – MERAPATKAN JURANG PENDIDIKAN

Pasukan Penyelidikan Mobile Learning telah memulakan kajian penyelidikan tentang kaedah pembelajaran mudah alih melalui telefon bimbit untuk menyebarkan maklumat atau ilmu pengetahuan kepada sesiapa yang memerlukan walau di mana jua mereka berada dan pada bila-bila masa sahaja !

Dikenali sebagai **mobilelearning@usm**, pasukan ini telah memfailkan Tanda Dagang **Pocket Education**, dan telah berjaya memperolehnya pada bulan Mac 2010. Penyelidikan dalam lapan bidang progresif berkaitan dengan m-learning bertujuan merangsang pembangunan berterusan modal insan serta **menggalakkan pembelajaran sepanjang hayat** di samping meningkatkan dan melestarikan pembelajaran berasaskan pelajar dengan menyediakan sumber pembelajaran secara percuma melalui telefon mudah alih.

MOBILE LEARNING – BRIDGING THE EDUCATION DIVIDE

Mobile Learning Research Team has embarked on a study to research upon methods by utilising mobile learning through **Mobile Phones** to disseminate information or knowledge conveniently to anyone at anywhere and anytime!

Known as **mobilelearning@usm**, this team has filed for a **Pocket Education** Trademark, which was successfully granted in March 2010. With research in eight progressive areas pertaining to m-learning, this research aims to promote a continuous development in human capital, while **encouraging lifelong learning** and also to improve and sustain student-based learning by providing free learning resources through mobile phones.



A CLOSE ENCOUNTER:
NEW PARASITIC FLY
TO BATTLE TERMITE SOLDIERS



In 2009, the Urban Entomology Laboratory of the Vector Control Research Unit, USM discovered a **new species of phorid fly** which is capable of infecting mound-building subterranean termites. Named **Misotermes mindeni** (named after the location of USM campus, Minden where it was discovered), this new species of fly may have the potential to be a **biological control agent** in future in the **control of mound-building subterranean termites**.

The Vector Control Research Unit has carried out extensive research on the biology and management of urban insect pests such as cockroaches, termites, pest ants, bed bugs, etc, and is an advocator for **sustainable** pest management approaches where pesticides should be the last resort.



Misotermes mindeni, a biological agent in controlling termite infestation

SATU PERTEMBUNGAN HEBAT:
LALAT PARASIT BARU
UNTUK MENENTANG ANAI-ANAI

Pada tahun 2009, Makmal Entomologi Bandar di bawah Unit Penyelidikan Kawalan Vektor, USM telah menemui satu spesies lalat forid yang berupaya menyerang anai-anai tanah berbusut. Spesies ini dinamakan **Misotermes mindeni** (sempena lokasi penemuannya di kampus Minden USM) dan berpotensi menjadi agen kawalan biologi terhadap kawalan anai-anai tanah berbusut pada masa hadapan.

Unit Penyelidikan Kawalan Vektor telah melakukan penyelidikan yang mendalam terhadap sistem biologi dan **pengurusan serangga** perosak seperti lipas, anai-anai, semut, pepijat, dan lain-lain, disamping bertindak sebagai pelopor kepada kaedah pengurusan serangga perosak **secara lestari** menjadikan **penggunaan racun perosak** sebagai pilihan terakhir.

Macrotermes gilvus is the most important mound-building termite in Malaysia



LEADING THE WAY IN SUSTAINABLE TOURISM RESEARCH

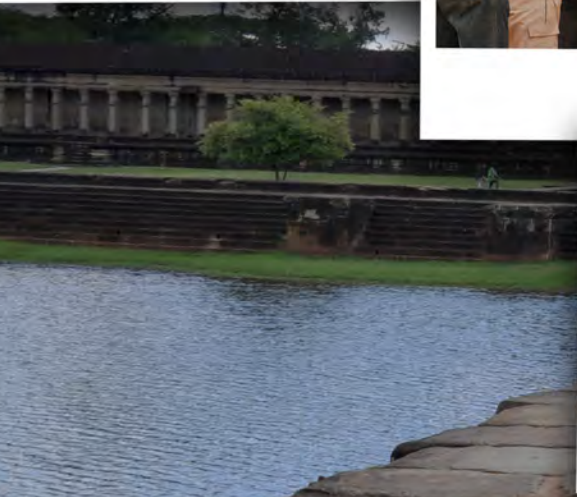
Sustainable Tourism Research Cluster (STRC) is formed under the Social Transformation Research Platform, USM, bringing together **multi-disciplinary experts** from various schools and centres of excellence in the university, with many associates from outside USM, in efforts to spearhead active sustainable tourism research activities in the country. This cluster, started as Tourism Research Circle (TRC), had gain recognition from the Ministry of Higher Education, and has set the target of becoming a **Centre of Excellence** for tourism research in Malaysia.

STRC is actively working towards **raising awareness** on sustainability issues in the tourism sector. Since most of the **research** is **academic** in nature and lacks **industry relevance**, there is a wide gap between the academic world and the tourism sector. Therefore, the **integration** of the two proves to be one of the **challenges** faced by STRC.

PENERAJU DALAM PENYELIDIKAN PELANCONGAN LESTARI

Kluster Penyelidikan Pelancongan Lestari (STRC) diwujudkan di bawah Pelantar Penyelidikan Transformasi Sosial, USM dan menggembeng **pakar-pakar dalam pelbagai bidang** dari pelbagai pusat pengajian dan pusat kecemerlangan di universiti serta rakan-rakan penyelidik dari luar USM, dalam usaha memacu aktiviti penyelidikan pelancongan lestari yang aktif di negara ini. Bermula sebagai Tourism Research Circle, Kluster ini, kini menerima pengiktirafan Kementerian Pengajian Tinggi, telah menetapkan matlamatnya untuk menjadi **Pusat Kecemerlangan** bagi penyelidikan pelancongan di Malaysia.

STRC berusaha keras ke arah **meningkatkan kesedaran** terhadap isu-isu kelestarian dalam sektor pelancongan. Kebanyakan **penyelidikan** pelancongan di negara ini adalah **bersifat ilmiah** dan kurang **berkaitan dengan industri**, maka wujud jurang yang ketara di antara dunia akademik dengan sektor pelancongan. Justeru, **integrasi** kedua-dua sektor ini menjadi salah satu **cabaran** yang dihadapi oleh STRC.



**KLUSTER PENYELIDIKAN
FARMAKOGENOM & ILMU
TERAPI BARU
@ INFORMM**

Farmakogenetik merupakan satu kajian tentang gen yang mempengaruhi cara manusia bertindak balas terhadap ubat. Matlamat utama penyelidikan farmakogenetik adalah untuk menyesuaikan ubat-ubatan dengan kandungan genetik manusia agar penggunaannya lebih selamat, berkesan dan berkesan kos. **Kluster Penyelidikan Farmakogenom dan Ilmu Terapi Baru** di Institut Penyelidikan Perubatan Molekul (INFORMM) merupakan kelangsungan daripada 'Kumpulan Penyelidikan Farmakogenetik' di Jabatan Farmakologi, Pusat Pengajian Sains Perubatan, Universiti Sains Malaysia. Ia merintis penyelidikan farmakogenetik negara, yang akhirnya berjaya menghasilkan siswazah MSc dan PhD pertama dalam bidang farmakogenetik yang terlatih dalam negara serta penerbitan farmakogenetik pertama oleh para penyelidik di Malaysia.

Penyelidikan farmakogenetik di USM berkembang selari dengan evolusi kluster. Kejayaannya dizahirkan melalui penghasilan beberapa penerbitan, penyertaan dalam persidangan dan produk-produk yang dikomersialkan. Output daripada kluster ini termasuklah **pangkalan data farmakogenetik** bagi tiga etnik utama di Malaysia, kajian yang berkaitan dengan penyakit genetik, lebih 40 penerbitan berwasit, pembentangan di seminar dan persidangan serta penghasilan siswazah PhD, MSc dan MMed. Produk terbaru yang bakal menyusul ialah **Ubat-ubatan Peribadi bagi Kit Metadon** dan **Ubat-ubatan Peribadi bagi Kit HIV/AIDS**. Perancangan sedang dijalankan untuk mengkomersialkan produk-produk ini melalui sebuah syarikat dengan kerjasama rakan kongsi industri. Usaha yang sedang dijalankan kini, iaitu mengenalpasti penyalahgunaan dadah dalam ubat-ubatan, HIV/AIDS serta infeksi kedua-duanya, membolehkan kluster ini memenangi geran "Penyelidikan Kluster USM" yang mencecah RM 5 juta.

**THE PHARMACOGENOMICS
& NOVEL THERAPEUTICS
RESEARCH CLUSTER
@ INFORMM**

*Pharmacogenetics is the study of how genes affect the way people respond to medicines. The ultimate goal of pharmacogenetics research is to tailor medicines to people's unique genetic make-ups to make medicine safer and more effective and cost-effective. **The Pharmacogenomics and Novel Therapeutics Research Cluster** at the Institute for Research in Molecular Medicine (INFORMM) is a direct descendant of the "Pharmacogenetics Research Group" at the Pharmacology Department in the USM School of Medical Sciences. It pioneered pharmacogenetic research in the country, producing the first locally trained MSc and PhD in pharmacogenetics and the first publication in pharmacogenetics in Malaysia by Malaysian researchers.*

*Pharmacogenetics research in USM has been growing parallel to the evolution of the cluster, culminating in numerous publications, conference participation and commercialised products. Outputs from efforts in this cluster include **pharmacogenetic databases** that have been published on the three major ethnicities in Malaysia, genetic-disease association studies, more than 40 peer-reviewed publications, presentation at seminars and conferences and PHDs, MSc's and MMed's graduates. The latest products to come from the cluster are the **Personalised Medicine for Methadone Kits** and the **Personalised Medicine for HIV/AIDS kits**. Plans are underway to commercialise these products via a new spin-off company in collaboration with an industrial partner. The current focus of the cluster is on personalised medicine in drug use disorder, HIV/AIDS and co-infections for which it won a "USM Cluster Research" grant of almost RM 5 million as depicted.*



PENDEKATAN MOLEKULAR TERHADAP DIAGNOSIS TIFOID & LAIN-LAIN PENYAKIT ENTERIK

Setiap tahun, jutaan manusia maut akibat penyakit berjangkit khususnya dalam kalangan populasi terbiar di negara-negara sedang membangun dan kurang membangun ekoran ketiadaan atau kesukaran mendapatkan diagnostik. Diagnostik sedia ada didapati tidak mampu memenuhi keperluan menangani penyakit ini dan lebih kritikal lagi di negara-negara yang menghadapi kekurangan tenaga terlatih dan prasarana.

Kluster Penyelidikan Penyakit Tifoid dan Enterik menahut cabaran penyelidikan dan pembangunan (P&P) untuk menghasilkan diagnostik yang lestari serta mampu-milik, khususnya untuk golongan yang amat memerlukan. Inisiatif ini menggabungkan penyelidikan fundamental dan pelantar teknologi untuk membangunkan, menghasilkan dan menilai ujian perubatan diagnostik berdasarkan DNA atau protein menangani penyakit berjangkit seperti tifoid, paratifoid dan disentri. Kajian ini dijangka mampu menyumbang kepada perkembangan dan penghasilan diagnostik molekul yang inovatif bagi penyakit enterik serta lain-lain penyakit berjangkit dengan menggunakan bahan reagen tempatan.

MOLECULAR APPROACHES TO THE DIAGNOSIS OF TYPHOID & OTHER ENTERIC DISEASES

Annually, millions of people continue to die of communicable diseases affecting the neglected population since **diagnostics** are unavailable or **inaccessible** to those in the **developing and underdeveloped countries**. The available diagnostics do not address their disease needs, and at times are ill-adapted to counties that lacked skilled personnel and infrastructure.

The Typhoid and Enteric Diseases Research Cluster thrives on the R&D challenge to provide **sustainable and affordable diagnostics** to those who need them most. It combines fundamental research and technology platforms to develop, produce and evaluate point of care diagnostics that are DNA or protein based **against infectious diseases** such as typhoid, paratyphoid and dysentery. This study is expected to result in the development and production of **innovative molecular diagnostics** for enteric and other infectious diseases using **indigenous reagents**.



TEKNOLOGI NANO

UNTUK MENGURANGKAN PEMANASAN GLOBAL

Peningkatan suhu dunia akibat pelepasan gas rumah hijau(GHG) yang semakin banyak telah menyebabkan **panasan global** - yang menjadi ancaman terbesar kepada alam sekitar. Jumlah pengumpulan gas karbon dioksida (CO₂) yang tinggi ini berpunca daripada industri kimia, industri bekalan tenaga, loji kuasa dan pengangkutan.

Satu pasukan yang diketuai oleh Profesor Abdul Rahman Mohamed cuba mengkaji penggunaan teknologi nano dengan mengkhususkan pada **potensi bahan nano** untuk **penjerapan dan penukaran karbon dioksida (CO₂)**. Penyelidikan ini juga akan mengkaji kemajuan dalam perkembangan bahan berstruktur nano yang berprestasi tinggi serta penukarannya kepada metanol ke arah **mengurangkan pengumpulan CO₂** dalam atmosfera, yang selari dengan komitmen Malaysia untuk mengurangkan pengeluaran CO₂ sehingga 40 peratus dari segi emisi bagi keluaran dalam negara kasar (GDP) menjelang 2020.

NANOTECHNOLOGIES

TO LIMIT GLOBAL WARMING

*The increasing world temperature with the increased amount of greenhouse gases (GHG) has caused **global warming**- the greatest threat to the environment. The high amounts of CO₂ accumulation is caused by chemical industry, energy supply industry, power plants and transportations.*

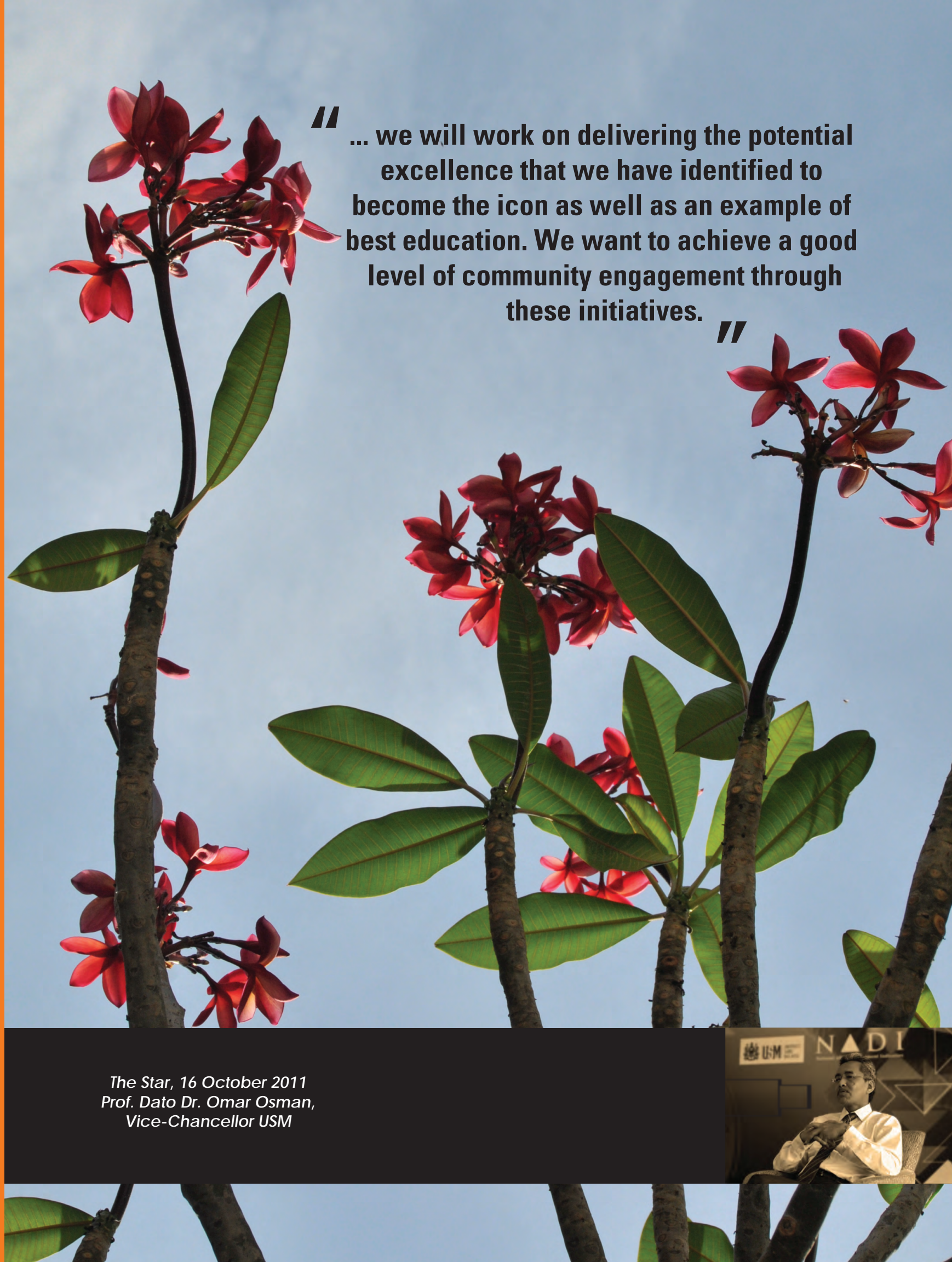
*A team led by Professor Abdul Rahman Mohamed is attempting to study the application of nanotechnology, specifically focusing on the **potential of nanomaterials for CO₂ adsorption and conversion**. The research initiative will also study the advances in the development of high-performance nano-structure materials, and their conversion to methanol towards **reducing CO₂** accumulation in the atmosphere among others, in line with Malaysia's commitment to cut the nation's CO₂ emission up to 40 per cent in terms of emission intensity of gross domestic product (GDP) by year 2020.*



Carbon Nanotubes

towards
reducing

Global Warming

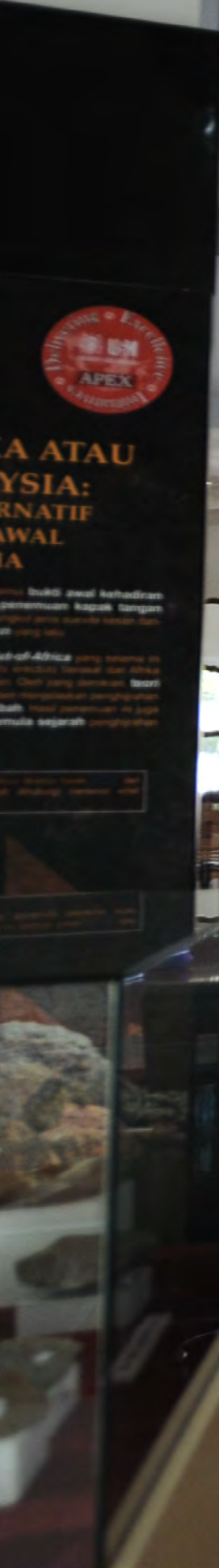


// ... we will work on delivering the potential excellence that we have identified to become the icon as well as an example of best education. We want to achieve a good level of community engagement through these initiatives. //

The Star, 16 October 2011
Prof. Dato Dr. Omar Osman,
Vice-Chancellor USM



INNOVATIVE USM
 NADI 



A ATAU
 YSIA:
 RNATIF
 AWAL
 IA

APEX

... buktikan awal kehadiran
 penemuan kapak tangan
 ... yang lebih baik

... Africa yang sama di
 ... dan Afrika
 ... dan yang demikian, secara
 ... meningkatkan pengiraan
 ... dan penemuan di jaja
 ... mula segara pengiraan

APEX
 delivering
 excellence



OLAGO-CT STRIP

...
 ...
 ...




Office furniture including a conference table and black leather chairs.



Two large vertical informational posters with orange and white themes.




Another vertical banner or poster on the right side of the room.

KAU & KENAF
BUAT CENDAWAN

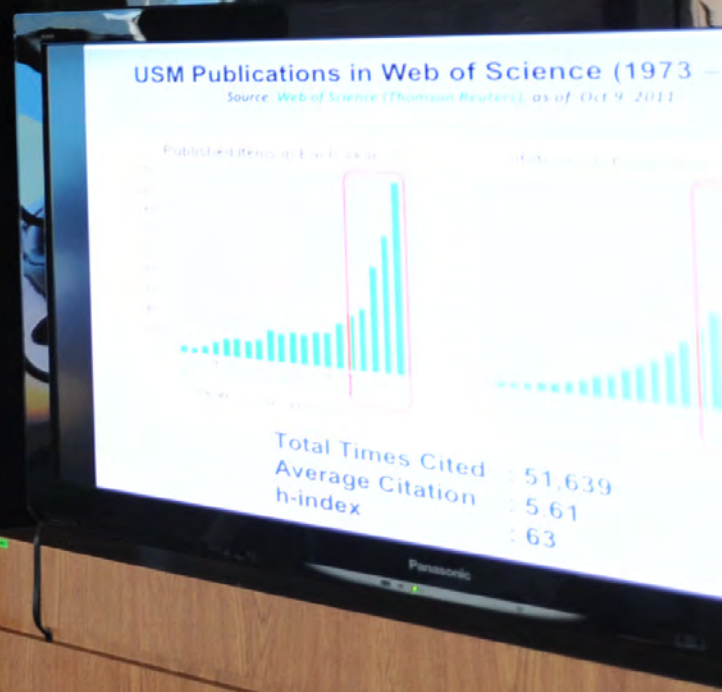
FROM TOBACCO & KENAF TO MUSHROOM COOKIES

GENOM GETAH: USM MENCIPTA SEMULA INDUSTRI GLOBAL BERNILAI BERBILION DOLAR

THE RUBBER GENOME: USM REINVENTS A BILLION-DOLLAR GLOBAL INDUSTRY

In 2008, the Centre for Chemical Biology (CCB)USM prides itself in the decoding of the draft of about ten million base genomes *Rubber Tree* (Hevea brasiliensis) using its sequencing genome-based discovery platform. This discovery highlights specific features of functional genomics of the rubber tree that can be used for breeding to biotechnology applications. This breakthrough is expected to produce new knowledge and contribute to social welfare and better economic development via technology transfer. It also opens to catapult Malaysia at the forefront position in the global rubber tree research and development.

The lead researcher for this project is Professor Nuzulwan Nuzulwan from the Centre for Chemical Biology (CCB)USM. He can be reached at nuzulwan@usm.my





AFRICA IS OUT, MALAYSIA IS IN: AN ALTERNATIVE VIEW OF EARLY HUMAN MIGRATION

The USM team of archaeologists has discovered the **earliest evidence of human presence** in **Bukit Bunuh**, Perak after unearthing of the **oldest hand axes** in the world, embedded in suevite boulders from a meteorite impact dated **1.83 million years** ago.

This discovery **challenges** the widely accepted **Out-of-Africa theory**, which suggests that *Homo erectus* originated in Africa before its migration to various parts of the world. Hence, the **Out-of-Malaysia theory** being the dominant theory explaining prehistoric human migration is deemed **plausible**. This discovery could entail in the **rewriting** of the **global history** of **human civilization**.

TEORI AFRIKA ATAU TEORI MALAYSIA: PENEMUAN ALTERNATIF PENGHIJRAHAN AWAL SEJARAH MANUSIA

Sekumpulan ahli arkeologi USM telah menemui **bukti awal kehadiran manusia** di Bukit Bunuh, Perak selepas **penemuan kapak tangan tertua** di dunia, yang tertanam dalam batu tongkol jenis **suevite** kesan daripada impak meteorit berusia **1.83 juta tahun** yang lalu.

Penemuan ini sekaligus mencabar **teori Out-of-Africa** yang selama ini menyatakan bahawa manusia terawal (*Homo erectus*) berasal dari Afrika sebelum berhijrah ke bahagian dunia yang lain. Oleh yang demikian, **teori Out-of-Malaysia** sebagai teori dominan dalam menjelaskan penghijrahan manusia terawal boleh **dianggap munasabah**. Hasil penemuan ini juga boleh menyumbang ke arah **penulisan semula sejarah** penghijrahan awal manusia dalam sejarah dunia.



Penyelidikan dan penemuan ini diketuai oleh **Profesor Madya Dr. Mokhtar Saidin**, dari Pusat Penyelidikan Arkeologi Global. Beliau boleh dihubungi menerusi emel mmokh@usm.my

This research and excavation is led by Associate Professor Dr. Mokhtar Saidin, from Centre for Global Archaeological Research. He can be reached at mmokh@usm.my

Director of Centre for Global Archaeological Research(left) holding a 1.83 million years old hand axe embedded in suevite.



PENEMUAN KOMPLEKS TAMADUN TERTUA DI ASIA TENGGARA

97 tapak arkeologi yang signifikan berjaya ditemui di Kompleks Arkeologi Sungai Batu di sekitar kawasan Lembah Bujang, Kedah. Proses ekskavasi yang dijalankan di 22 tapak arkeologi ini membongkar struktur-struktur binaan yang telah digunakan bagi tujuan keagamaan, aktiviti peleburan besi dan jeti di persisiran sungai. Kompleks Sungai Batu merupakan kompleks tamadun tertua di Asia Tenggara berbanding Angkor Wat di Kemboja dan Borobudur di Indonesia. Penemuan ini mampu mengubah teori utama pembangunan entrepot kuno di Kedah Tua.

Penyelidikan dan penemuan ini diketuai oleh Profesor Madya Dr. Mokhtar Saidin, dari Pusat Penyelidikan Arkeologi Global. Beliau boleh dihubungi menerusi emel mmokh@usm.my

DISCOVERING THE OLDEST CIVILISATION COMPLEX IN SOUTHEAST ASIA

97 mounds with great archaeological significance were discovered in **Sungai Batu Archaeological Complex** within the **Bujang Valley**, Kedah. Excavations conducted at 22 mounds revealed structures used for ritual purposes, iron-smelting and riverside jetties. The Sungai Batu complex is thus far the **oldest civilisation complex in Southeast Asia**, eclipsing even the Angkor Wat in Cambodia and Borobudur in Indonesia. This discovery is able to **change** the mainstream **theory** about the **development of ancient entrepôt** of old Kedah.



Ruins of river jetty revealed at Sungai Batu complex.

Excavations had revealed the oldest monument in Southeast Asia used for ritual purposes.

Ancient furnaces used for iron smelting purposes.



KOLAGEN HALAL : MENCARI PENYELESAIAN BAGI MENAMPUNG KEKANGAN DIET DALAM AGAMA-AGAMA DUNIA

Para saintis di Pusat Kawalan Doping USM telah berjaya menghasilkan kolagen gred makanan halal daripada kulit biri-biri. Projek yang mematuhi budaya dan hukum syarak ini berjaya mencipta kolagen Halal hidrolisis berhasil tinggi dengan menggunakan campuran enzim tanaman dan mikrob. Kolagen yang dihasilkan melalui proses inovatif, kos rendah dan lestari ini dapat mentransformasikan lagi sektor berasaskan pertanian serta tidak membuang bertan-tan kulit biri-biri begitu sahaja, yang dianggap bahan buangan, sebaliknya merupakan sumber kekayaan di Malaysia, malah telah menjadi sumber baru bagi menjana pendapatan tambahan. Kolagen biri-biri premium Ovinex™ akhirnya dapat diperolehi oleh masyarakat global yang berhadapan dengan kekangan pemakanan berkaitan anutan agama, terutamanya dalam kalangan umat Islam, kaum Buddha dan Hindu.

Ketua penyelidik projek ini ialah Dr. Gan Chee Yuen dari Pusat Kawalan Doping, Universiti Sains Malaysia. Beliau boleh dihubungi melalui e-mel cygan@dccusm.com

The head researcher for this project is Dr. Gan Chee Yuen from Doping Control Centre, Universiti Sains Malaysia. He can be reached at cygan@dccusm.com

HALAL COLLAGEN: DEVELOPING SOLUTIONS TO ACCOMMODATE DIETARY RESTRICTIONS IN WORLD RELIGIONS

USM scientists at the Doping Control Centre have succeeded in producing Halal food-grade collagen from sheepskin. Culturally and religiously compliant, this project resulted in the high-yield production of hydrolysed Halal collagen by utilising blends of plant and microbial enzymes. Developed through an innovative, low-cost and sustainable process, it is poised to transform the agro-based sector and eliminate the need to bury tons of sheepskins, seen as a waste elsewhere – but a source of wealth here in Malaysia, and instead has become a new source for additional income generation. The Ovinex™ premium sheep collagen will eventually be accessible to the global population with religious dietary restrictions, mainly the Muslims, Buddhists and Hindus.



USM INOVATIF MENGHASILKAN VAKSIN HALAL MENINGOKOKAL:



USM dan Vacunas Finlay Cuba mencipta satu **vaksin halal** (tetravalen bukan konjugat, Men A, C, Y, W135) bagi melawan **penyakit MENINGOKOKAL**. Vaksin ini akan memberi **manfaat** kepada ribuan **jemaah haji** yang berisiko tinggi menghidap penyakit tersebut semasa mengerjakan Haji dan Umrah.

USM akan melakukan percubaan klinikal, pendaftaran produk, dan pemudahan **akreditasi Halal** bagi vaksin tersebut di samping memasarkannya, buat permulaannya di negara-negara **Asia Tenggara**.

Ketua penyelidik projek ini ialah Profesor Norazmi Mohd Nor dari Pusat Pengajian Sains Kesihatan, USM. Beliau boleh dihubungi melalui e-mel norazmi@kb.usm.my

INNOVATIVE USM TO PRODUCE HALAL MENINGOCOCCAL VACCINE

USM and Vacunas Finlay Institute (FI) Cuba are developing a **halal vaccine** (Men A, C, Y, W135) to combat **meningococcal disease**. This vaccine will **benefit** thousands of **Muslim pilgrims** who are highly at risk to the disease while performing the Haj and Umrah.

USM will conduct clinical trials, product registration, and facilitation of **Halal accreditation** of the vaccine as well as marketing this vaccine in **Southeast Asian** countries, and eventually to the rest of the world.

The head researcher for this project is Professor Norazmi Mohd Nor from the School of Health Sciences, USM. He can be reached at norazmi@kb.usm.my





KINI SESIAPA SAHAJA BOLEH BRAILLE!

Braille berbahasa Melayu kini boleh dipelajari oleh sesiapa sahaja yang celik penglihatan **secara online dan percuma** menerusi sistem pembelajaran tutorial multimedia yang dikenali sebagai **eKodBrailleBM**. Inisiatif pertama yang seumpama ini merupakan satu-satunya sistem yang **memenuhi proses silibus pembelajaran dan pengajaran** dimana ianya memerlukan keupayaan menghafal yang tinggi. Menerusi pembelajaran komprehensif yang serba lengkap, tutorial ini **boleh diakses pada bila-bila masa** tidak kira di mana tempat dan masanya.

Sistem pembelajaran tutorial yang **interaktif** ini berupaya memantau tahap-tahap pembelajaran pelajar dan mereka yang **berjaya pada setiap peringkat** bakal dianugerahkan **sijil secara talian** daripada pihak USM.

NOW EVERYONE CAN BRAILLE!

Now everyone can read Braille using **eKod-BrailleBM**, a **free online multimedia tutorial system** that teaches **Malay Braille** to **sighted individuals**. It is the first and only system of its kind with an embedded Braille simulator to **support** the teaching and learning of the syllabus which requires a great deal of memorisation. It is a comprehensive and complete self-paced, self-assessed tutorial system highly accessible to **anyone, anytime, anywhere!**

The system provides **interactive methods** of teaching and has the ability to track student learning. **Online certificates** endorsed by USM are given upon completion of each mastery level.



Projek ini diketuai oleh Profesor Madya Dr. Lee Lay Wah dari Pusat Pengajian Pendidikan. Beliau boleh dihubungi di lwah@usm.my.

eKodBrailleBM boleh dilayari di <http://ekodbraille.ses.usm.my>

The head researcher for this project is Associate Professor Dr. Lee Lay Wah, from the School of Educational Studies. She can be reached at lwah@usm.my.

eKodBrailleBM is available at <http://ekodbraille.ses.usm.my>



ENDEAVOR MOBILE: PLATFORM PERUBATAN BERASASKAN ANDROID CIPTAAN TEMPATAN

Pada tahun 2011, sekumpulan penyelidik USM dari "Computer Vision Research Group" telah berjaya membangunkan sebuah platform kolaboratif Teleradiologi Mudah-Alih Android USM Inovatif. **ENDEAVOR-Mobile** membolehkan pakar-pakar perubatan berkongsi kepakaran dalam menangani sesuatu masalah perubatan walaupun berada di mana sahaja dan pada bila-bila masa. Platform ini bukan sahaja boleh berkongsi imej untuk dibincangkan malah turut diintegrasikan dengan panggilan telefon bagi melengkapkan proses diagnosis kolaboratif secara langsung yang lebih efektif. Inovasi ini selaras dengan visi USM dalam mentransformasikan penyelidikan termaju menerusi penghasilan produk mampu milik di samping meningkatkan mutu perkhidmatan kesihatan demi faedah masyarakat.

Projek ENDEAVOR (Extensible Medical Image Analysis and Visualization Platform) diketuai oleh Profesor Madya Dr. Mandava Rajeswari dari Pusat Pengajian Sains Komputer. Beliau boleh dihubungi menerusi mandava@cs.usm.my

The ENDEAVOR (Extensible Medical Image Analysis and Visualization Platform) project is led by Associate Professor Dr. Mandava Rajeswari from School of Computer Sciences. She can be reached at: mandava@cs.usm.my

ENDEAVOR MOBILE: HOME-GROWN MEDICAL ANDROID APPLICATION

In 2011, USM's Computer Vision Research Group has unveiled the **Innovative USM's** fully **Android-based mobile teleradiology** collaboration platform. **ENDEAVOR-Mobile** enables medical experts to immediately crowd source expert opinions on critical medical cases from their colleagues, regardless of time and location. It not only implements live image case discussion by highlighting areas of interest in medical images, but also utilises phone-based voice calls for effective **live collaborative diagnoses**. This innovation is in line with the noble mission of transforming **cutting-edge technological and scientific research**, into providing real world **low cost solutions** for the masses to **improve health-care services** ultimately, **benefitting society**.





DARIPADA TEBAKAU & KENAF KEPADA BISKUT CENDAWAN



Sejak penguatkuasaan Zon Bebas Perdagangan Asia (AFTA) bermula 2010, Malaysia telah menurunkan duti import daun tembakau menyebabkan harga komoditi tempatan menjunam hampir 50%. Seramai 300 bekas penanam tembakau telah dikenal pasti untuk merintis **penanaman cendawan tiram kelabu (CTK)** di Kelantan. Kerjasama pintar antara USM dengan Lembaga Kenaf Tembakau Negara (LKTN) telah dimeterai untuk mempelbagaikan CTK dalam produk terproses bernilai tambah seperti berasaskan daging dan bakeri. **'Nutri-Mush Patty'** dan **'Nutri-Mush Biscuit'** merupakan **produk-produk inovatif burger dan biskut bercendawan** telah berjaya diformulasikan daripada CTK dan mendapat pengiktirafan di Bio Malaysia 2010 dan 2011.

Nutri-Mush Patty dan *Nutri-Mush Biscuit* mengandungi serat dietari semulajadi, β -glucan, vitamin dan perisa asli cendawan. Serat dietari pula membantu **melancarkan sistem perkumuhan dan mencegah radang usus.**

Penyelidikan ini diketuai oleh Prof. Madya Dr Wan Rosli Wan Ishak dari Pusat Pengajian Sains Kesihatan. Beliau boleh dihubungi melalui wrosli@kck.usm.my

FROM TOBACCO & KENAF TO MUSHROOM COOKIES

Since the enforcement of Asia Free Trade Area (AFTA) in 2010, Malaysia has decreased its tobacco import duty which causes commodity price to fall. This situation has affected 60% of tobacco farmers. Due to this situation, 300 farmers are selected to pioneer the **oyster mushroom cultivation program** in Kelantan. A collaboration between **USM** with **National Kenaf and Tobacco Board (LKTN)** aims to diversify oyster mushroom processed products such as meat and bakery based on this mushroom. **Nutri-Mush Patty** and **Nutri-Mush Biscuit** are **innovative products** which are recognised at Bio Malaysia 2010 and 2011.

Nutri-mush patty and *Nutri-mush biscuit* contains appreciable amounts of dietary fibers, β -glucan, vitamins and other essential nutrients. Dietary fibers assist in speed up the transit of bowel contents, increases bulk, frequency and and ease of faecal voiding. They also **protect our body from inevitable bowel syndrome and colon cancer.**

This research is led by Prof. Madya Wan Rosli Wan Ishak from the School of Health Sciences. He can be reached at wrosli@kck.usm.my





OLIGO-CT STRIP

CALITAN PENGESAN BERASASKAN DNA YANG MAMPU MENGESAN KUMAN TAUN

Kolera tergolong dalam penyakit yang mampu membahayakan kesihatan. Kolera berpunca daripada toxigenic vibrio cholerae 01 dan 0139. Faktor utama yang mendorong kepada kolera ialah cholera toxin (CT). Pengesanan CT oleh GM1-ELISA mengambil masa dua hari untuk memperoleh keputusan.

Oligo-CT Strip bersifat sensitif dan khusus untuk mengesan CT gen dari V.Cholerae toxigenic. Hasil ujian Oligo-CT divalidasi dengan amplifikasi PCR dan dikawal oleh kromatografi.

Ciri-ciri Kit

- Sistem lengkap untuk mengesan gen toxic
- Hasil ujian dapat diketahui dalam masa 2.5 jam
- Tidak memerlukan rantaian tertentu
- Hanya dua langkah untuk ujian PCR
- Calitan pengesan tersebut berfungsi pada suhu persekitaran

Penyelidikan ini diketuai oleh Dr. Chan Yean Yean dari Pusat Pengajian Sains Kesihatan. Beliau boleh dihubungi melalui yeancy@yahoo.com

OLIGO- CT STRIP

RAPID TEST FOR SEQUENCE-SPECIFIC DETECTION OF CHOLERA TOXIN

Cholera is a potentially life-threatening secretory diarrheal disease caused by toxigenic *Vibrio cholerae* 01 and 0139. The principal virulent factor, cholera toxin (CT), is responsible for the symptom of the disease. Detection of CT is helpful when *V. Cholerae* is isolated from patient samples, food and water sources. Detection of CT by conventional GM1- ELISA is tedious and requires two days to obtain results.

Oligo- CT Strip is a rapid, sensitive and specific test which couples the amplification of CT gene by advanced asymmetric PCR and sequence-specific hybridization on a strip for the detection of CT gene from toxigenic *V.Cholerae*. The test result of each Oligo-CT Strip is further validated with PCR amplification and chromatographic control lines.

Kit features

- Complete system for cholera toxin gene detection assay
- Rapid visual results within 2.5 hours
- No cold chain required
- Two-step PCR assay
- Hybridization on strip at ambient temperature

This research is led by Dr. Chan Yean Yean from the School of Health Sciences. She can be reached at yeancy@yahoo.com



Going Bananas; satu iktibar dalam kelestarian

Sekumpulan penyelidik dari Universiti Sains Malaysia (USM) telah berjaya melaksanakan projek yang mengaplikasikan konsep kelestarian, di samping menjalinkan talian keusahawanan yang berpanjangan dengan masyarakat. Projek ini adalah gabungan yang utuh antara teknologi dan seni, bakat dan kemahiran, dan, universiti dan masyarakat. Semua ini menerangkan projek *Going Bananas*; satu iktibar dalam kelestarian.

Going Bananas merakamkan usaha USM sejak beberapa tahun dalam mentransformasikan bahan-bahan buangan kepada kekayaan, kini usaha tersebut dilihat membuah hasil. Hal ini adalah perkara unik dalam rakaman perjalanan USM dalam menerapkan perubahan ke arah kelestarian, perubahan kecil mampu membawa perubahan kepada dunia.



Going Bananas; a lesson in sustainability

The Universiti Sains Malaysia (USM) research team has done an excellent job in demonstrating sustainability, while at the same time forging a lasting entrepreneurial fraternity with the community. This is a tremendous fusion of innovative technology and the arts, of talents and skills, and of the university and society. This is what Going Bananas is all about; a lesson in sustainability.

Going Bananas records the transformation from waste to wealth, an endeavour that look root subtly in USM over the years and now, the efforts are bearing fruits. Here is a unique compilation that chronicles the journey that USM has taken so far with the hope to offer a cusp of sustainable change, in a small way, to a world in transition.



White Coffin; USM ke arah kelestarian...

Projek *White Coffin* adalah antara projek alam sekitar perdana di Universiti Sains Malaysia (USM). Idea ini mula-mula dikemukakan oleh sekumpulan pelajar USM dalam pertengahan tahun 2007. Pada awalnya, projek ini mensasarkan untuk menghadkan penggunaan polistirena di dalam kampus. Para pelajar didorong untuk lebih prihatin terhadap alam sekitar memandangkan banyak sampah yang dihasilkan bersifat tidak boleh didegradasi. Sampah-sampah ini mengancam kehidupan laut dan berpotensi untuk mencemarkan laut.

Di USM, kami telah berjaya mengharamkan penggunaan polistirena di ketiga-tiga buah kampus. Namun, projek ini tidak boleh dikatakan sebagai 100 peratus berjaya memandangkan USM tidak mengenakan tindakan terhadap pelajar dan kakitangan yang membawa bekas polistirena dari luar. USM terus berusaha mendapatkan sokongan daripada para pelajar, kakitangan dan pihak-pihak lain melalui kempen dan pendidikan. Sokongan daripada pelbagai pihak terutama daripada pihak pengurusan tertinggi telah menjayakan usaha ini.

The white



PERSPECTIVE

White Coffin comes

DZULKIFLI ABDUL RAZAK

... experiences and knowledge. It facilitates access to resources, experiences and debates on the role of higher education in modern society. The perspective is both global and local.

The White Coffin Project is accepted as one of the resources and experiences under the title The White Coffin Student Environmentalism Activism.

GUNI noted: "USM has been at the forefront of student-driven and university administration-supported ways to reduce the ecological footprint left by Higher Education Institutions (HEIs)."

"The White Coffin Student Environmentalism Activism is a representation of how ... (it) can force HEIs campus management into a more sustainable operational template."

GUNI highlighted "the novel idea of referring to the polystyrene food container as a 'white coffin', alluding to how... common overuse... in... leads to the... as we

The Corporate Social Responsibility (CSR) Efforts by a University for the Environment

USM students recently co-organised a seminar entitled The Corporate Social Responsibility Efforts by a University for the Environment

It then recounted how the idea was mooted on Dec 18, 2007. The campaign lasted until Jan 4, 2008 with the target of zero polystyrene at campus canteens by Jan 1 of that year (as agreed with the canteen operators).

On Jan 7, 2008, the vice-Chancellor called a Press conference to announce the success of the project.

Since then, there sustained efforts to media to public interest. Numerous have been ins... White... ac...



The White Coffin; USM goes green...

te coffin



The White Coffin has become a flagship for environmental activism on the Universiti Sains Malaysia (USM) campuses. The idea was first put forward by a group of USM students in the middle of 2007, originally targeted at getting rid of polystyrene containers on our campuses. The students were motivated by concerns for the environment because of the huge amount of rubbish generated its non-biodegradability, documented harm to marine life and potential contamination of ground water.

At USM, we have succeeded in banning the use of polystyrene containers on the three campuses both at the cafeteria and for all events involving catering on the campuses. Certainly we cannot claim 100% success as we do not penalize students or staff who buy their food outside and bring them into the campuses. We will continue to appeal for their support through education and persuasion. The success so far must be attributed to the strong support from many stakeholders including student's bodies, individual students, cafeteria operators, staff and the unwavering support of the university's top management including the Vice-Chancellor.





KIT READS BANTU PELAJAR KUASAI BAHASA INGGERIS

Kit penilaian membaca dan sistem penyahkod atau READS telah dibangunkan berdasarkan beberapa penyelidikan, teori membaca, dan dokumen kurikulum dan silibus yang dimandatkan. READS juga dilengkapi dengan tiga komponen iaitu:

- Alat Pengekod (Encoder)
- Alat penganalisa (Analyser)
- Alat Penyahkod (Decoder)

READS mempunyai beberapa kriteria yang sesuai untuk digunakan bagi menilai tahap keupayaan membaca seseorang seperti mudah digunakan, fleksibel, bermaklumat, sah dan boleh dipercayai. Sistem ini mampu menyediakan maklumat secara spesifik tentang tahap keupayaan membaca seseorang pelajar.

Penyelidikan ini diketuai oleh Prof. Dr. Abdul Rashid Mohamed dari Pusat Pengajian Ilmu Pendidikan. Beliau boleh dihubungi melalui rich@usm.my

READS KIT HELPS STUDENT TO MASTER ENGLISH

READS or **Reading Evaluation and Decoding System** was developed based on rigorous research, established reading theories, mandated curriculum and official syllabus documents. READS is **made up of three components** namely:

- An Encoder
- An Analyser
- A Decoder

READS offers **easy to use, flexible, informative, valid and reliable features** for teachers to **effectively gauge learners' ESL comprehension ability**. This system is able to **provide specific information** regarding learners' reading proficiency when use as a formative assessment tool to enable teachers to assist readers.

This research is led by Prof. Dr. Abdul Rashid Mohamed from the School of Educational Studies. He can be reached at rich@usm.my





GENOM GETAH: USM MENCIPTA SEMULA INDUSTRI GLOBAL BERNILAI BERBILION DOLAR

Pada tahun 2009, Pusat Biologi Kimia (CCB@USM) dengan bangganya telah menyahkodkan draf dua bilion pangkalan genom Pokok Getah (*Hevea Brasiliensis*) menggunakan pelantar penemuan berasaskan genom tak berkecilim. Penemuan ini menekankan ciri-ciri khusus genom fungsian getah yang dapat digunakan dalam aplikasi bioteknologi. Kejayaan cemerlang ini dijangka dapat menjana pengetahuan baru dan menyumbang kepada kebajikan sosial di samping memacu perkembangan ekonomi melalui pemindahan teknologi. Ia juga diharap dapat meletakkan Malaysia di kedudukan terkedepan dalam penyelidikan dan pembangunan getah global.

Ketua Penyelidik projek ini ialah Profesor Nazalan Najimudin dari Pusat Biologi Kimia (CCB@USM). Beliau boleh dihubungi melalui e-mel nazalan@usm.my

THE RUBBER GENOME: USM REINVENTS A BILLION- DOLLAR GLOBAL INDUSTRY

In 2009, the Centre for Chemical Biology (CCB@USM) prides itself in the **decoding** of the draft of about two-billion base **genome Rubber Tree** (*Hevea Brasiliensis*) using its seamless genome-based discovery platform. This discovery highlights specific features of **functional genomics** of the rubber tree that can be used from breeding to **biotechnology applications**. This breakthrough is expected to produce **new knowledge** and contribute to **social welfare** and foster **economic development** via **technology transfer**. It also aspires to catapult Malaysia at the forefront position in the global rubber tree research and development.

The head researcher for this project is Professor Nazalan Najimudin from the Centre for Chemical Biology (CCB@USM). He can be reached at nazalan@usm.my



