2009 was indeed an eventful 80th Anniversary year for the Faculty of Science.

The festivities began with the Faculties of Science, Dentistry and Arts & Social Sciences launching celebrations with the 80th Anniversary Bash on 27 Feb. Our own launch activities continued with the opening of the "Discoveries in Science" exhibition as part of the Centre For the Arts’ (CFA) NUS Arts Festival fortnight. In partnership with the CFA, we contributed dance, music, screenings, lectures, workshops, etc – introducing Science to a whole new audience. Part of the exhibition travelled to the Science Centre to showcase our discoveries to a wider public. During the year, renowned international speakers were invited to conduct public lectures.

Students and staff were not forgotten. A photography competition open to Science students and staff yielded 160 entries, out of which 12 were selected for our 2010 calendar. We also brought students and their professors together after the last exam for a party called "Out of the Blue".

Our 80th Anniversary activities included outreach to schools in our partnership with Defence Science Organisation (DSO) and the Science Centre for the Amazing Science-X Challenge where schools, JCs and polytechnics took part in an exhibition and demonstration competition. Prospective students were introduced... READ ON >>
to Science in our own Open House. This was targeted to students who are choosing Science.

The Science/Medical Library spent the year documenting the history of the Faculty and presented their findings in a seminar called “Celebrating a Legacy of Knowledge Creation”, which drew a sizable crowd from the academic community.

The Faculty took the opportunity to Make a Difference by boosting our two student funds – Science Student Fund (SSF) and Science Student Overseas Exposure Fund (SSOEF). Staff, students, alumni and friends were invited to contribute. We also announced the creation of the SSF Bursary, which will be available to Science students in 2010. We received a total of more than $347,000 for the year, including donations and pledges for 106 SSF Bursaries. Donations are still coming in and you can continue to Make a Difference through our website www.science.nus.edu.sg/giving/index.html

Our celebrations culminated with the Dinner with a Difference on 24 Oct at the Sheraton Towers Singapore for the NUS Science community. Dr Tony Tan, BSc(Hons) 1962, was the Guest of Honour. At the dinner, Dr Tan also presented Distinguished and Outstanding Alumni Awards.

We are pleased that there are alumni like Mr Lim Lay Yew, BSc(Pharmacy) 1973, who have found it in their hearts to give back. Mr Lim’s $150,000 gift will be used to create the Esco Micro Bursary for life sciences, chemistry, pharmacy, and chemical engineering students.

This leaves me to wish you all a Happy New Year for 2010.

Professor Andrew Wee
Dean, Faculty of Science
In The News

Nov 09 – Professor Leo Tan, eminent marine biologist and director of special projects in the Science Dean’s Office, opened the baby shark feeding pool at the Underwater World Singapore.

Nov 09 – Yang Daiwen, associate professor in the Department of Biological Sciences, and his lab is the only team focusing on egg case silk, which is more resistant to water than other forms of the seven types of silk that spiders produce.

Nov 09 – Edward Webb, assistant professor in the Department of Biological Sciences is principal investigator heading a team of Singaporean and Dutch groups in a $5.2m project to help preserve coasts.

Nov 09 – Internationally-renowned crustacean expert, Professor Peter Ng of the Department of Biological Sciences, heads the NUS task force on environmental sustainability research. His aim is to build bridges between experts from diverse disciplines such as engineering, law, science and economics.

Oct 09 – Biological Sciences Professor Richard Corlett is participating in an international study to learn how species become extinct to prevent further die-offs. Their study has revealed that the establishment of cities result in the dying of native species.

Oct 09 – The Centre for Quantum Technologies made it to the pages of the prestigious magazine Nature with their article “Information causality as a physical principle”.

Oct 09 – Hong Yunhan, Associate Professor in the Department of Biological Sciences, and his team made headlines in all the major newspapers with Holly the fish. It is the first semi-cloned fish to be produced by a stem cell that was made to behave like a sperm. Holly is now a great-grandmother with more than 100 descendents.

... READ ON >>
In The News

Sep 09 – Manjunatha Kini, Professor in the Department of Biological Sciences, has been collaborating with researchers from the UK and Slovakia to develop an anticoagulant derived from the saliva of ticks. The novel thrombin inhibitor, called Variegin, has proven to be more effective than anticoagulants that are currently available in the market. Initial tests on zebrafish showed that Variegin completely inhibited thrombus formation. The next step would be to conduct animal tests and clinical trials. If these tests are successful, it would take at least 5 years before the drug would be available commercially.

Faculty of Science has published our 2009 Annual Report, which covers the year Jul 08 to Jun 09. Write to editor of OmniScience for your own copy or visit

www.science.nus.edu.sg/aboutfos/publications/faculty-reports.html
Honours and Leadership

**Nov 09 – Mathematics Professor SHEN Zuowei** has been invited by the Editor-in-Chief of SIAM Journal on Mathematical Analysis to sit on the editorial board as an associate editor. This is the best journal of ‘applied analysis’ and is listed as Tier 1. It normally keeps one to two associate editors from approximation theory, wavelet applications on the board.

**Nov 09 – Peter HO**, Assistant Professor in the physics department was awarded The Outstanding Young Persons (TOYP) of Singapore 2009 award by the Jaycettes in the category of Academic Leadership. The JCI TOYP AWARDS recognises young Singaporeans for their leadership, passion to succeed in their respective fields, and contribution to the development of the community.
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Honours and Leadership

Sep 09 – Science Mentorship Programme is an enrichment programme for secondary school pupils. Such programmes are only possible with the support of the many representatives from all our departments participated as mentors and judges in the programme. This year the Faculty of Science mentors achieved the following awards from the Ministry of Education.

Outstanding Contribution Award with Special Mention
A/Prof LIM Tit Meng  Biological Sciences

Outstanding Contribution Award
Dr ONG Bee Lian  Biological Sciences
Prof Li Fong Yau, Sam  Chemistry
A/Prof TAY Tiong Seng  Mathematics
A/Prof TAY Seng Chuan  Physics

Outstanding SMP Mentor Award
A/Prof TAN Tiang Wah Hugh  Biological Sciences
Ms CHIEN Sheau Wei  Chemistry
A/Prof ZHANG De-Qi  Mathematics

Aug 09 – Adjunct Associate Professor YANG Yiyan from the Department of Pharmacy was honoured at this year’s Singapore Women’s Weekly “Great Women of Our time Awards” in the Science & Technology category.

Professor BAI Zhidong’s 65th birthday was celebrated by the publisher Springer in their Jun 2009 issue Science in China Series A: Mathematics, where half the issue was dedicated to his work. This is a huge personal honour for Prof Bai and the Department of Statistics and Applied Probability here.
Faculty of Science Staff Awards 2009

The Faculty of Science honoured its staff in teaching, administration and research in a ceremony on 20 Nov 2009. 87 staff members were honoured with their respective awards. Like in previous years, award categories are as follows:

**Faculty Teaching Excellence Award (FTEA)** honours the top 10% of the teaching staff whose outstanding abilities and efforts in teaching are recognised and endorsed by the Faculty. Award winners are staff members selected based on peer review, qualitative and quantitative student feedback during the preceding year.

**Honour Roll** recognises those who have contributed significantly to the teaching community of the Faculty in the preceding three consecutive academic years.

The **Teaching Assistant Award** serves to recognize teaching assistants in the Faculty who have demonstrated excellence in teaching during the preceding academic year.

Administrative and professional staff were not left out. The Faculty honours these with the **Outstanding Service Award**.

There was one new category this year: the **Outstanding Science Entrepreneur Award**. This award was presented to Professor BVR Chowdari.

For the full lists of teaching and service awards, visit: www.science.nus.edu.sg/faculty/staffawards/FacultyAwards.html
Professor BVR Chowdari

BVR Chowdari, Professor in the Department of Physics, was presented the Faculty’s Outstanding Science Entrepreneur Award at this year’s Faculty Awards ceremony on 20 Nov 2009.

Professor Chowdari conceived and organized the biennial International Conference on Materials for Advanced Technologies (ICMAT) as a successful entrepreneurial enterprise since 2001. It is serving as a unifying force in bringing researchers from different universities and research institutions within Singapore and abroad. The sustaining success of this conference and the enthusiastic response being received by various academics from Singapore and elsewhere towards the organization of various symposia within the conference shows its growing importance in the field of Materials Science and Engineering. ICMAT has also provided a unique organizational education and experience to many of the colleagues in NUS and other organizations in Singapore.

Professor Chowdari’s research interest includes Condensed Matter Physics and Materials Science with special relevance to the experimental investigations on Electrode and Electrolyte Materials for lithium ion and lithium polymer batteries (micro-power sources). Presently, his main focus of research is on the investigation of transition metal oxides as cathodes (LiCoO₂, LiNiO₂, LiMn₂O₄ in pure and doped form), tin composite alloys as anodes, and solid ionic conductors as solid electrolytes in crystalline, glassy, and polymeric form for lithium ion and lithium polymer batteries.

Professor Chowdari, representing the Materials Research Society of Singapore (MRS–S), was elected 1st Vice-President and President-Elect of the International Union of Materials Research Societies (IUMRS), for the two-year term of 2009 to 2011. He will be President from 2011. He has also been the President of the Asian Society for Solid State Ionics since 2000.

Find out more about Professor Chowdari and his research from his website:
www.physics.nus.edu.sg/corporate/staff/chowdari.html
From the Class of ...
www.science.nus.edu.sg/alumni/alumninews.html

2007 – Gwynne Shimin LIM, BSc(Hons), current graduate student in the Department of Biological Sciences, has won the prestigious Fulbright Scholarship to pursue a PhD in the USA.

1982 – Johnny TAN Khoon Hui, BSc, was awarded the NUS Distinguished Alumni Service Award at a ceremony at the University Cultural Centre on 10 Nov.

1981 – HON Chiew Weng, BSc, has been promoted to Principal of Hwa Chong Institution (HCI). He was previously the Principal of the high school section of HCI (formerly known as The Chinese High School). He has a Doctor of Education from the University of Western Australia.

Please send your From the Class of... news to the editor by email karenwong@nus.edu.sg
Science Alumni Awards 2009

On 24 Oct, the Faculty of Science honoured six Distinguished and 11 Outstanding Science Alumni in a ceremony at Sheraton Towers Singapore as part of Dinner with a Difference, the fund raising event of the year. Read about how our staff, alumni and friends helped the Faculty to Make a Difference on pages 15-16.

Guest-of-Honour, Dr Tony TAN, BSc(Hons) 1962 Physics, and 1999 Distinguished Alumni Award recipient, presented the crystal trophies.

Outstanding Science Alumni Awards

- **ANG HUI GEK**, BScPharm 1981
- **ANG KOK TIAN**, BSc(Hons) Physics
- **CHEN PU**, PhD 1991 Chemistry
- **CHEUNG YIN BUN**, MSc 2003 Statistics
- **CHUA-LIM YEN CHING**, BSc 1980 Zoology
- **HEW CHOY LEONG**, BSc 1963 Chemistry, Emeritus Professor
- **LIM HOCK**, BSc(Hons) 1970 Physics
- **LOKE KWONG HUNG**, BSc(Hons) 1954, Chemistry
- **LOW CHOON MING**, BSc(Hons) 1965 Physics
- **NG BOON GAY**, BSc(Hons) 1990 Mathematics
- **SAW PHAIK HUA**, BSc(Hons) Chemistry

Distinguished Science Alumni Awards

- **ANG HOW GHEE**, BSc(Hons) 1961 Chemistry, MSc 1962, DSc 1985, Emeritus Professor
- **LEE SING KONG**, PhD 1985 Botany
- **NG KOK SONG**, BSc(Hons) 1970 Physics
- **SEET AI MEE**, PhD 1969 Chemistry
- **SEAH JIAK CHOO**, BSc(Hons) 1975 Mathematics
- **TAN SHOOK FONG**, BPharm(Hons) 1965

* unable to attend the ceremony

To read more about the Science Alumni Awards and full citations of the award recipients, please visit: http://science.nus.edu.sg/alumni/awards/
Project Angel 11 – Nepal
Contributed by Yvonne Kwang, Project Angel 11 Leader

In May and Jun 2009, Science Club’s Project Angel spent 21 days in Nepal. This was our 11th expedition.

During our time in the Himalayas, we went to Khareeni village in the Dhading district to work on a local school building project. There we added four classrooms to Aakhu Primary School. We also gave the children old school uniforms, stationery, pencil cases and school bags. These were donations which we brought from Singapore.

Project Angel was conceived in 2000 to increase the experiences of Science students. In the past eight years and 10 expeditions,

Project Angel has been to Myanmar, India, Cambodia, Thailand, Vietnam and Laos.

Project Angel is planning a trip to Dali, China in May. They plan to improve the sanitation facilities in a rural village.

Since 2007, students on Project Angel have been encouraged by the Faculty through funding from the Science Student Overseas Exposure Fund (SSOEF). We welcome your support of Project Angel through the SSOEF. Gifts to the SSOEF are matched 100% by the government and donors benefit from a 200% tax exemption.

To may find out more about Science Club and Project Angel, visit http://sciclub.nus.edu.sg
NUS Life Sciences Society –
a new beginning
Contributed by Zhang Jingyang,
Life Science Society

NUS Biological Sciences Society (BSS) has a new name. It was renamed the Life Sciences Society (LSS) in March 2009 to identify itself with all Life Sciences majors.

The BSS has a long history dating back to 1971. It was formed to unite students of the Zoology and Botany departments. With the introduction of the new Life Sciences Curriculum in 2002, there was a need to connect with Life Science students in all specialisations: Biology, Molecular & Cell Biology, and Biomedical Sciences.

At its inaugural meeting on 21 Oct 09, Professor Paul Matsudaira, Head of the Department of Biological Sciences, unveiled its new logo before more than 350 members. Dr Chew Fook Tim, a member of the Life Sciences Undergraduate Programme Committee, answered questions on the Life Sciences specialisation after a talk on the topic.

For more information on the NUS Life Sciences Society, visit http://community.nus.edu.sg/lss
Maths & Science UPDATES
Workshops for teachers
Contributed by Lim Kim Yong,
Science Demo Lab Manager

A recent survey of teachers found that they would like workshops to update them with current knowledge. The Faculty of Science started planning these updating workshops long before this survey and in Sep 2009, we launched the first Maths and Science UPDATES teachers' workshops.

The aims of the Maths and Science UPDATES are:

- To conduct curriculum-relevant science workshops that link up current research with actual classroom activities, thereby helping teachers and students see their learning as relevant to research and vice-versa.
- To help teachers keep current in recent science and technology developments.

... READ ON >>
Maths & Science UPDATES - Workshops for teachers (con’t)

A typical workshop includes lectures in the morning followed by hands-on and practical sessions in the afternoon. Tea breaks and lunchtime provide opportunities for the participants to interact.

The first workshop “Nanotechnology for the classroom” was held on 25 Sep 2009. Attended by 40 teachers, FOS professors shared various ways of introducing nanoscience and nanotechnology into the classroom. The teachers also had a chance to operate the scanning electron microscope and try out some feasible experiments relevant to nanoscience. The second workshop “CSI (Singapore): Fingerprint and Bloodstain analyses” was held on 26 Oct and 30 Oct 2009. Teachers picked up skills on dusting and identifying fingerprints as well as identifying and differentiating between the types of bloodstains.

In addition to the activities, the faculty and the teachers also exchange pointers and information about their experiences in research and teaching.

Feedback about the workshop has been positive with almost all the teachers intending to return for similar workshops.

Visit the website for more information: www.science.nus.edu.sg/outreach/teachers/msu2.html
ESCOTE MICRO BURSARIES -
Pharmacy Alumnus gives back through Bursary
Contributed by Perry Hee, Associate Director (Alumni & Corporate Relations)

Lim Lay Yew, BSc (Pharmacy) 1973, CEO/President of Esco Micro Pte Ltd has made possible the establishment of the Esco Micro Bursary for pharmacy, chemistry, life sciences and chemical engineering students with an endowed donation of $150,000. The Bursary is open to Singapore Citizens and Singapore Permanent Residents.

While successfully steering the company to its present global standing, Lay Yew has been actively contributing his vast accumulated experience and expertise to many professional and civic organisations. His versatility and business acumen are reflected in his various capacities, for example, as past Chairman of the Association of Electronics Industries of Singapore and past Secretary of the Pharmaceutical Society of Singapore. He was also a member of the Young Presidents Organisation and is currently an active member of the World Presidents Organization.

During his undergraduate years, Lay Yew was a recipient of the Triangle Trust Scholarship, an experience that has since stayed with him. His career started with the management of retailing and wholesaling of pharmaceuticals, veterinary medicines, and scientific and medical products in Singapore and Australia. In 1978, he founded Esco Technologies (Asia) Pte Ltd.
This year, the Faculty of Science celebrated 80 years of quality science education in Singapore. To mark this occasion, we decided to **Make a Difference**.

What was the Difference? We took the bold step to raise 80 Science Student Fund (SSF) Bursaries. These are annual bursaries of $2,000. Beginning in 2010, we will offer our SSF Bursaries to the neediest 5% of some 400 students each year who are eligible for financial aid. The more money we raise, the more bursaries we can offer. To date, we have received gifts and pledges of 106 annual bursaries.

The SSF is also used to tie students through unforeseen emergencies until they receive University financial aid. These include retrenchment, disability, or a medical condition that places extreme financial burden on the family.

We also used this opportunity to increase the Science Student Overseas Exposure Fund (SSOEF). It makes taking advantage of Student Exchange Programmes, Summer Programmes and other international opportunities more... **READ ON >>**
Make a Difference 2009 – more than 80 annual bursaries for Science students (con’t)

affordable for students from low income homes. These opportunities help to foster in our students a more enterprising and global outlook.

Make a Difference 2009 raised more than $347,000. We thank all donors for their generous support.

To celebrate this feat, we invited donors to join us at Dinner with a Difference at Sheraton Towers Singapore on 24 Oct 2009. Dr Tony Tan, BSc(Hons) 1962 Physics, former deputy prime minister and current Chairman of the National Research Foundation, was the Guest-of-Honour. In his speech, Dr Tan said, “For Singapore’s economic strategy to succeed we need to ensure that science and maths education in Singapore continues to be relevant, rigorous and engaging for all students.” To that end, he said the faculty has done well.

During the dinner, Dr Tan also presented the Faculty’s Alumni Awards (please see page 10).

To view our picture gallery, visit http://www.science.nus.edu.sg/gallery/2009/80thDinner/

You CAN continue to Make a Difference in 2010 through gifts to the SSF or the SSOEF. Make your cheque payable to National University of Singapore and send it to Science Dean’s Office, S16 Level 9, 6 Science Drive 2, Singapore 117546.

For more information, please call Karen (6516 8198) or Manjeet (6156 7641) or email giving@science.nus.edu.sg

Gifts to the SSF and the SSOEF are matched 100% by the government and donors benefit from a 200% tax exemption.

www.science.nus.edu.sg/giving/index.html
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JAN

11
Semester begins

22 – 23
Pharmacy:
Abbott– NUS Symposium on Drug Delivery Systems

28
Science Lunchtime Talk
A/Prof Jayaraman Sivaraman (Biological Sciences)

FEB

4 – 5
NUS Career Fair

25
Science Lunchtime Talk
Professor Berthold-Georg Englert (Physics)

MAR

11
Science Lunchtime Talk
Professor Brett T McInnes (Mathematics)

13 – 14
NUS Open House

27
Life Science Career Day

APR

8
Science Lunchtime Talk
Professor Tan Ser Peow (Mathematics)

15 – 16
Pharmacy:
Educating Pharmacists (Asia) 2010

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e-OmniSci / Issue 02 / January 2010