CONTENTS

1. President Wen-Tsuen Chen Attended the AEARU BOD Meeting as Taiwan’s Representative
2. Tsing Hua Celebrated Her 96th Founding and 51st Reinstallation Anniversaries
3. This Year’s Distinguished Alumni Award Goes To: Dr. Jong-Min Liu and Mr. William Y. C. Chang
4. Tsing Hua Delegation Visited Major US Universities
5. Dr. Yuan Tseh Lee’s Commencement Address: Face the Reality and Meet the Challenge Head-On
6. Breakthrough in Carbohydrate Synthesis
7. President Chen Visited NTHU Alumni in the US
8. No More Needle: Novel Nanoparticles Allow Insulin to be Delivered Orally
9. A Belated Salute to the Unsung Heroes
10. NTHU Ranks Fifth at the 2007 National Intercollegiate Athletic Games: A New Record
11. New Officers Elected at Foreign Students Association
PRESIDENT WEN-TSUEN CHEN ATTENDED THE AEARU BOD MEETING AS TAIWAN REPRESENTATIVE

The Association of East Asian Research Universities (AEARU) is a regional organization founded in January 1996. It is a forum for the presidents of leading research universities in East Asia to promote academic exchanges and cooperations among the major universities in the region. The 2007 AEARU’s Board of Directors (BOD) includes the Chairperson, President Chan-Mo Park of POSTECH University; the Vice-Chairperson, President Kazuo Oike of Kyoto University; and three other members elected from China, Hong Kong, and Taiwan. This year’s BOD meeting, the 20th, was held from April 16 to 18 at the Hong Kong University of Science and Technology. President Chen represented the Taiwan region to attend the meeting.

During the meeting, AEARU’s activities were discussed including holding workshops in research areas of mutual interests and student camps with the aim of promoting exchanges of students among the member universities, conducting joint research projects, offering supports to international symposia, and so on. The BOD expects that this regional union, on the basis of common backgrounds among the member universities, will contribute not only to the development of higher education and research but also to open up a new era leading to cultural, economic, and social progress in the East Asian region.
On a beautiful Sunday, April 29th, Tsing Hua family held a series of events to celebrate the founding of the University and her reinstallation in Hsinchu. Many alumni returned with their families to visit their beloved alma mater and relive their cherished memory and renew their friendship with old classmates. At the celebration ceremony, President Wen-Tsuen Chen invited the two recipients of this year’s Distinguished Alumni Award winners to address the audience and share their experiences in Tsing Hua as well as their career developments. Also at the ceremony, special awards and recognitions were presented to faculty and staff members whose efforts have greatly contributed to the uplifting of Tsing Hua’s reputation. Among this year’s award recipients, Ms. Jen-Ling Lin of the Computer and Communication Center deserves a special recognition for her dedication, courage and perseverance. Ms. Lin was inflicted with glaucoma in her college years and gradually lost her eyesight after she graduated. The disease blinded her eyes but did not diminish her determination to become a productive citizen and a creative professional. She enrolled in a special computer training school for the visually impaired and learned the skill to become a computer programmer. Since joining the Computer and Communication Center, she has developed many innovative software systems that greatly improved the efficiency of our library as well as property management systems. Our university is ever-improving and made great because we have many faculty and staff members whose professionalism and desire to excel have led them to the forefront in research, teaching and services!

A birthday luncheon was held at the gymnasium and more than a thousand guests were treated with not only delicious food but also lively music and dancing performances. Old classmates were reunited and new friends made at this annual birthday banquet. The celebration event did not end as the luncheon ended. It continued in different parts of our beautiful campus. For example, the building that usually houses the Material Science Center was transformed into a haunted mansion to give the thrill-seekers a large dosage of ghostly-feeling. A kite-flying exhibition was held on the beautiful lawn in front of the new building where the College of Technology Management will be located. In the auditorium where student singers have a stage to show off their talents and receive the applause from the audiences. Like the songs performed on the stage, this year’s birthday celebration ended with a high-note and a renewed devotion to our beloved Tsing Hua.
THIS YEAR’S DISTINGUISHED ALUMNI AWARD GOES TO: DR. JONQ-MIN LIU AND MR. WILLIAM Y. C. CHANG

After completing his undergraduate degree in Chemistry at NTHU, Jonq-Min Liu (class of 1974) went on to complete his graduate degrees at Columbia University and also studied at Stanford. He is now the General Director of Material and Chemical Research Laboratories of the ITRI (Industrial Technology Research Institute) of Taiwan.

Dr. Liu’s specialties involve organic photochemistry, electronic materials and soft matters. He combines his academic research with industrial applications and has contributed to the development of advanced research in these fields. We here at Tsing Hua are proud to recognize him as one of our distinguished alumni.

Mr. William Y. C. Chang (class of 1979) graduated from NTHU’s Department of Industrial Engineering in 1979 and has gone on to lead an impressive career and also maintain strong relationships with Tsing Hua. Mr. Chang is currently Executive Vice President of Compal Electronics Inc., the second largest laptop manufacturer in the world. His outstanding leadership and management skill are the main reason contributed to the company’s record exportation of 15 million computers in 2006.

For Tsing Hua, Mr. Chang has helped coordinate the Department of Industrial Engineering with related industries. He has been invited to Tsing Hua on past occasions to give speeches regarding creativity in the engineering industry and is annually involved in the Tsing Hua “Star of Tomorrow” young leaders’ summer camp. Mr. Chang also heads the board of directors of the Association of Elite Chinese Entrepreneurs that provides many educational activities for Tsing Hua students as well as promotes cooperation between Taiwan and Mainland China.
This year from May 14th -20th, President Chen; Dean of Academic Affairs, Tien-Ko Wang; Dean of Student Affairs, Hong Hocheng; and the Director of the Computer and Communication Center, Chuan-Yi Tang visited Harvard, MIT and Yale Universities and met with NTHU alumni on both coasts of the US. The purpose of this trip was to learn the undergraduate education programs of these premier American universities. The NTHU delegation first visited the East Coast where President Chen was able to meet with Yale University’s Provost A. Hamilton; Harvard College’s current and previous Deans B. Gross and H. Lewis; MIT’s Dean of Undergraduate Studies, D. Hastings, and Dean of the College of Science, R. Silbey. President Chen indicated that the most important lesson learned from these meetings is the emphasis of these three universities placed on developing extracurricular programs for undergraduates. The aims of these programs include the cultivation of leadership, the development of interpersonal skills and team spirit as well as the inculcation of life-long learning habits.

NTHU has traditionally been a university with a large capacity for on campus housing and a large percentage of her students are residing on campus. With such facilities, NTHU’s environment is conducive to the implementation of innovation extracurricular educational programs. As a result of this trip, President Chen appointed recently a Task Force on Undergraduate Education to rediscover university education goals, reexamine general education, and to study implementation of the Tsing Hua College patterned after Harvard College and Yale College.

At MIT with Dean R. Silbey, College of Science and Prof. Shou-Sing Chen, a Tsing Hua Alumnus
At Harvard College with Counselors
Dr. Yuan Tseh Lee's Commencement Address: Face the Reality and Meet the Challenge Head-On

Dr. Yuan Tseh Lee, former president of Academia Sinica and a Nobel Laureate of Chemistry in 1986 as well as a graduate of Tsing Hua’s Institute of Nuclear Science in 1961, was the honorable commencement speaker at this year’s commencement held on June 23rd. He started his speech by recounting an encounter he had had with a Tsing Hua student not too long ago. The student wanted to know was he prepared to face the challenge outside of the campus when he graduated in 1961?

Dr. Lee’s answer was rather concise. He told the student that he had only two wishes at that time. First, he wanted to become a distinguished scientist so that he can make some contributions to society and humankind as a whole. His second wish was to work with a group of friends and together with them they can help establishing a just and rational society. Although it has been half of a century since he graduated from Tsing Hua, Dr. Lee still holds on to these ideals.

Dr. Lee also noted, in his commencement address, that we have witnessed a great deal of social as well as technological changes in Taiwan and other parts of the world in the past few decades. Such changes have posted new challenge and opportunity to all of us, especially to new graduates who are in the process of taking on new careers. It is very important that graduates keep the followings in mind when they leave the campus and re-enter into the society at large. First, facing the ever-changing world, one’s best strategy is to develop and maintain a life-long learning habit. Secondly, as we are becoming more and more aware of the environmental crisis, we have to do our utmost to make sure that we will not “destroy” our environment. We need to develop new ways to utilize and manage our natural resources; constantly keeping the substantive issues in mind lest we will jeopardize the survival of our future generation.

Dr. Lee concluded his commencement address by encouraging graduates to face the reality with courage and meet the challenge with wisdom!
A research team led by Professor Shang-Cheng Hung at the Department of Chemistry has successfully developed a new, novel, convenient, practical, and straightforward route to synthesize various carbohydrates via a combination of “regioselective one-pot protection” and “stereoselective one-pot glycosylation”. This elegant work was recently published in Nature (2007, 446, 896-899) as a letter and was highlighted in Chemical & Engineering News (2007, 85 (No. 17), p 9) as well as Nature Chemical Biology (2007, 3, 309-310). Carbohydrates, which belong to a large family of biopolymers, play significant roles in vital life processes. They are present in micro-heterogeneous forms and their structural diversity, which allows them to encode information required for specific molecular recognition, and determine the posttranscriptional modification of proteins, is much more complex than that of proteins and nucleic acids. In comparison with these three biopolymers, the preparation of oligosaccharides is obviously more difficult since no regio- and stereochemical issues are involved in the sequential coupling steps for the construction of amide or phosphate bonds, respectively. The biggest challenge in carbohydrate synthesis is not only the stereoselective glycosylation, but also the preparation of selectively protected monosaccharide units, one with a strategically positioned free hydroxy group (a nucleophilic acceptor) and one bearing a labile leaving group at the anemic carbon that acts as a glycosyl donor in the ensuing glycosylation reaction. Along with this, the installation of suitable protecting groups on the remaining hydroxyls, for tuning the overall electronic properties of donors and acceptors so as to “match” the donor-acceptor pair and also for further deprotection and glycosylation or functional group modifications, is required.

Hung and coworkers envisioned that the 2-, 3-, 4-, and 6-hydroxy groups on a monosaccharide bearing an anemic group could be distinctly protected via a combinatorial, regioselective, orthogonal, and sequential one-pot procedure. They used substituted and unsubstituted benzyl ethers as orthogonal protecting groups and carried out extensive studies on D-glucose substrates. Their general protocols involved (1) selective protection of O4 and O6 as an arylidene acetal followed by highly regioselective reductive amination at O3 to furnish the 2-alcohols, (2) O4, O6-aryldienation, O3-arylmethylation, and subsequent etherification or acylation at O2 to get the fully protected monosaccharides, (3) O4, O6-aryldienation, O3-PMB or O3-2-
NAP protection, O2-etherification or O2-acylation, and removal of PMB or 2-NAP to yield the 3-alcohols, and (4) O4, O6-arylenation, O3-arylmethylation, O2-acylation, and regioselective ring opening of arylidene acetals at O4 and O6 to provide the 4-alcohols and 6-alcohols, respectively. The novelty of this approach lies in tuning of the reaction conditions to generate a single regioisomer at each step that allows subsequent addition of reagents for the multi-step reactions to carry out in a single reaction vessel using trimethylsilyl trifluoromethanesulphonate as a common acidic catalyst. Such a method would be of vital importance to expedite the overall synthetic process and reduce the labor involved in saccharide preparation. As a result, a simple tetraol could be selectively protected to get the fully protected monosaccharides or the individual 2-, 3-, 4-, and 6-alcohols in a one-pot manner.

With these monosaccharide building blocks in hand, Dr. Hung’s group can rapidly couple these synthons to yield the desired carbohydrates through one-pot glycosylation procedure, as demonstrated by the preparation of biologically important \( -1,6 \)-glucans and influenza virus-binding triaccharide library. Thereby, the combination of regioselective one-pot protection and stereoselective one-pot glycosylation may offer an efficient protocol to solve the long-standing problem in oligosaccharide synthesis and open a new door to lead glycobiology research into a new era.

PRESIDENT CHEN VISITED NTHU ALUMNI IN THE US

On a recent visit to the United States a delegation led by President Chen attended a reunion luncheon of NTHU alumni held at the Hilton Hotel in Santa Clara, California. This luncheon gave the NTHU delegation an opportunity to hear from these alumni and discuss with them on how to upgrade Tsing Hua’s education and research programs.

Since assuming the presidency last February, President Chen has returned twice to visit the Bay Area. He has also promised that he will continue to visit at least once a year to meet personally with alumni.

During the luncheon, President Chen expressed that he believes NTHU’s greatest assets is her alumni. In the future, President Chen plans to continue to hold such re-unions and bring alumni into closer contacts. He believes it is very important for all of our alumni to have updated information so that they can have a better understanding of the recent developments at their alma mater. This visit was so successful and well received that a Global Tsing Hua Alumni Network has been formed. Thanks to the efforts of Dr. Charlie Chao (class of 1993) and other alumni.
NO MORE NEEDLE: NOVEL NANOPARTICLES ALLOW INSULIN TO BE DELIVERED ORALLY

Professor Hsing-Wen Sung at the Department of Chemical Engineering and his research team recently have an innovative breakthrough in the medical application of nanoparticles. Their research results were published in two of the most prestigious scientific journals, Nanotechnology and Biomacromolecules and generated a great deal of media coverage both locally and internationally. According to the authors, the "novel nanoparticles (NPs) coated with chitosan which allow insulin to be administrated orally were developed. The NPs could transiently and reversibly open the tight junction in the Caco-2 cell monolayers, thus increasing their paracellular permeability."

In other words, the research team led by Prof. Sung has discovered a way to encase the drug in a shell which would resist stomach acid and other digestive fluids, and yet would be small enough to pass through the cells lining the small intestine and release the insulin into the blood stream. Although at this stage the medication has only been successfully tested on rats, it shows a great deal of potential for human applications. It looks like Prof. Sung and his team are on the verge of inventing a new and less intrusive way to administer insulin to patients who are inflicted with diabetes.
A BELATED SALUTE TO THE UNSUNG HEROES

Tsing Hua Thinkers’ Club presented a special forum in the evening of June 5th to commemorate a group of unsung heroes who gave their lives in “exchange” of U.S. military aids to Taiwan and contributed to safeguard the island from falling into the hands of the Communist. During the hay days of the cold war, the U.S. military had a dire need for a great deal of accurate and updated military intelligence on the PRC budding air force. Two special reconnaissance squadrons were formed by the Air Force of R.O.C. and equipped with planes and other intelligence gathering instruments supplied by the U.S. military. These were the 34th and 35th Squadrons, nicknamed as the “Black Bat Squadrons” as their planes were all painted black and they only operated at moonless nights over the sky of mainland China. Such clandestine operation started shortly after the Korean War ended and lasted until 1967. During this period, the Black Bats conducted 838 missions and suffered heavy casualty. Ten planes and one hundred and forty-eight air force officers were lost. Only 14 of the 148 casualties were discovered in 1992 and brought back to Taiwan for a proper burial. The remains of the other 134 heroes are still tragically scattered in different parts of China. Due to the very sensitive nature of such reconnaissance missions, there was never any public acknowledgment made by the Air Force or the government until recently. The Black Bats were stationed in Hsin Chu area when the mission was conducted and it is very appropriate that the Tsing Hua Thinkers’ Club organized this forum to formally salute these unsung heroes and thank their families for the selfless sacrifice that these heroes had made. The forum was chaired by Prof. Ying-tai Lung and featured General Fei Tang, the former Chief Commander of the Air Force and Premier, former members of the two Squadrons and family members of the lost Black Bats. In addition to the speeches, the forum also featured the dedication of poetry and songs composed especially for this occasion. Tsing Hua Thinkers’ Club believes that it is our civic duty to know the truth of what had happened and to formally show our gratitude to our martyrs who selflessly gave their lifes to protect their fellow countrymen.
NTHU RANKS FIFTH AT THE 2007 NATIONAL INTERCOLLEGIATE ATHLETIC GAMES A NEW RECORD

We are proud to note that NTHU’s representatives gave a praiseworthy performance on the 2007 National Intercollegiate Athletic Games. At this year’s annual competition, our 115 athletes participated in seven different sports. As a whole, NTHU athletes had an excellent showing spanning across the board:

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<tr>
<th>Event</th>
<th>Ranking</th>
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<tbody>
<tr>
<td>Women’s badminton</td>
<td>2nd</td>
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<tr>
<td>Women’s tennis</td>
<td>4th</td>
</tr>
<tr>
<td>Men’s tennis</td>
<td>3rd</td>
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<tr>
<td>Men’s track and field</td>
<td>4th</td>
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<td>Men’s swimming</td>
<td>6th</td>
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<tr>
<td>Men’s table tennis</td>
<td>6th</td>
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<tr>
<th>Event</th>
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<tr>
<td>Women’s Solo Table Tennis</td>
<td>Gold</td>
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<tr>
<td>Women’s Archery</td>
<td>Gold</td>
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<tr>
<td>Men’s 1500-meter and 800-meter Freestyle Swimming</td>
<td>Gold</td>
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<tr>
<td>Men’s 50m Butterfly Swimming</td>
<td>Gold</td>
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<tr>
<td>400m Medley</td>
<td>Silver</td>
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<tr>
<td>Men’s Swimming 800m Freestyle</td>
<td>Silver</td>
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<tr>
<td>Decathlon</td>
<td>Silver</td>
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<tr>
<td>200m Race</td>
<td>Silver</td>
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<tr>
<td>Men’s Track and Field 400m</td>
<td>Silver</td>
</tr>
<tr>
<td>800m Race</td>
<td>Bronze</td>
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<tr>
<td>Long Jump</td>
<td>Bronze</td>
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It was a record day for NTHU, whose combined team scores ranked as fifth place overall, a performance that was the best in university history.
NEW OFFICERS ELECTED AT FOREIGN STUDENTS ASSOCIATION

On the 16th of May, Foreign Students Association (FSA) held the annual elections for President, Vice-President and Ambassador of the NTHU FSA. Stepping down from 2006-2007 offices were FSA President Wenlee Martinez, Vice President James Khoo and Ambassador Lester Arellano.

In addition to maintaining their academic excellence, these three have spent the past year dedicated to representing NTHU outside the university and organizing and coordinating events within. We heartily thank them for all their efforts and wish them the best of success as they leave us to begin their careers.

Along with a significant proportion of the international students at NTHU, these three congratulated and welcomed Ezzara Jimenez - Panama, Joseph Thomas - India and Valeria Orellano - Bolivia, as President, Vice-President and Ambassador respectively. It was a close contest as all the candidates were particularly strong. We thank all the candidates for their devotion to the FSA.

We would also like to say congratulations to our international student Jose Pablo Gonzales for his acceptance to the Human Language Technologies Program of the Department of Computer Science at Carnegie Mellon University. Gonzales, NTHU International Student from Costa Rica, has just finished his MBA of Technology Management. He will be departing for the USA this summer.