

Session A-I:

Promoting International Research Collaborations

Advantages, Cooperation and Innovation

Fang Guanghua

Vice-President, Prof. Northwest University,
P. R. China

ABSTRACT

Northwest University is located in the original historical site of Taiping Section of the capital of Tang Dynasty. The university, founded in 1902 as Shaanxi College, is one of the key comprehensive universities in Western China and enjoys substantial support from both the central and local governments. With a total area of 370 acres, it consists of 24 schools and departments, and 16 research institutes as well. There are over 2,300 faculty and staff members, among which 1,230 are full-time teachers. The number of its students reaches 22,000, including 5,500 doctoral and graduate students as well as 600 international students.

Northwest University is one of the earliest universities that carried out international collaborations in China. As far back in the end of 1960s, we had already begun to enroll international students. Some of them are from Japan and Vietnam. In 1980s, Northwest university initiated cooperative relationship with several universities in Japan (like Kyoto University and Bukkyo University) and America (like West Michigan State University, Michigan State University, Saint Thomas University). International collaborative research always remains one of the top priorities of the university's development strategies. So far, 90 universities and research institutes from 30 countries have established partnerships with my university.

Between 2001 and 2006, 14 major international projects have been undertaken, 42 international workshops and conferences held, 710 experts invited to the university to deliver lectures and conduct research, and more than 300 mid-career faculty members sent to sister institutions for collaborative research. The prevailing internationalization of higher education and the intense competition of international tech-innovation have provided more opportunities than challenges for the university. It has taken more initiatives and allocated more resources to accomplish international collaborative research more extensively and fruitfully.

Among the 14 international collaborative research projects, I would like to highlight the following five.

1. Joint Research in Early Life Evolution

In the past ten years, the Early Life Evolution Research team headed by Prof. Shu Degan, a world prestigious expert in Geology, has cooperated productively with universities and research institutes from America, England, Germany, Canada, and Japan. Take as an example, the collaboration with Prof. Simon Conway Morris from the University of Cambridge, who is a member of British Royal Academy, it has proven to be very successful. Ten papers yielded from the joint research in the field of Early Evolution of Deuterostomia have been published in *Nature* and *Science*. Their

collaborative research has manifested the direct fossil evidence to support the discovery that Phylum Vetulicolia was the most primitive forms on morphological evolution, set up the most complete Phylogeny of Deuterostomia till now, and constructed for the first time the Phylogeny of Early Cambrian Deuterostomia and Animal tree of Cambrian Explosion. All these achievements have enriched Darwin's Theory of Evolution. These critical findings attract wide attention from all over the world.

2. Cooperative Research in Pharmaceutical and Biological Technique

National Engineering Research Center for Miniaturized Detection System of Northwest University is approved of by the Ministry of Science and Technology of the People's Republic of China. The center focuses on the miniaturized detection, advanced technology in the pharmaceutical field as well as its development and industrialization. Recently they have been endeavoring to set up a technology platform of "Personalized Medicine and Drug Screening". At present they are making great efforts to study the high drug screening technology of Cytochrome P450.

Cyprogen (USA) is a high-tech company committed to the research and development of the advanced biology products and services. They have been studying the enzyme kinetics design and results analysis for many years. Through the visiting scholar program and frequent data exchanges Cyprogen and National Engineering Research Center can take full advantage of both sides to solve current problems and achieve mutual benefits. In the recent past, they have cloned many SNP genes of CYP450 successfully and completed some drug screening in vitro. Moreover, the results are consistent with the reports of other researchers.

3. Archaeological Research of the Ancient Silk Road

Situated at the starting point of the ancient Silk Road—Chang'an, Northwest University enjoys the geographical advantage to carry out the archaeological study of the Silk Road. Founded in 1956, the Department of Archaeology is one of the oldest in China. Up till the present moment, the Department has established academic exchange relationships with universities and research institutes from over 10 countries from Asia, Europe, America, and Oceania. Hundreds of scholars and experts from the international partners have paid visits to and given speeches at the Department. They are mainly from Japan, UK, France, Germany, USA, and Italy, to name but a few. More than 20 international students have successfully completed their degree or non-degree study in the Department.

Between 2001 and 2006, the joint research projects on the ancient Silk Road with foreign partners include: 1) joint research on Historic Remains of Ancient Buddhism in Shaanxi, China with Tokyo Research Institute of Culture Properties. 2) joint research on the protection program of the Emperors' Mausoleum Stone Carving of Tang Dynasty with Tokyo Research Institute of Culture Properties; 3) archaeological research about the Silk Road with University of Vienna, Austria and Oriental University of Di Napoli, Italy. Through the above-mentioned joint projects, the similarities and differences between the Buddha molding methods in different times and places have been studied, dozens of nomadic sites along the silk road have excavated, and the essence of ancient silk road culture explored.

4. Joint Research Program of Digitalized Virtual Restoration of Damaged Relics

China is a nation abundant in historic relics, especially in its western regions. Most of the valuable relics are pottery, porcelain, bronze, and terra cotta. Unfortunately, a considerable number of them have become either fragments or debris owing to centuries of weathering, erosion, war as well as historical changes. A major concern of the institutions with preservation is the repeated manual repair of the relics. In order to solve the problem of appropriate reconstruction, since 2001 Visualization Technology Institute, supported by China's Ministry of Science and Technology, NSFC, and China's Ministry of Education, has conducted extensive research on digitalized virtual restoration of damaged relics by using graphics, virtual reality, and visualization technique. This research not only accelerates the speed of relic restoration but also reduces the damage to relics during repair process.

Many foreign experts including Prof. A. Cerepi and Dr. Daim from France and Austria have been invited with the cooperation of Chinese research group. Due to the commitment of both sides, they have achieved a major breakthrough in the methods of contour line extraction and free match, realized shape based curve matching through vector space transform, and eventually developed a computer-aided relic restoration system. It provides a foundation of relic restoration, repair and simulation and also breaks a new frontier of cultural relic restoration.

5. Joint Programs of Resources, Environmental and Social Development in Western China

Northwest University has made significant progress in the Qinling golden snub-nosed monkey (*Rhinopithecus roxellana*) study. The Qinling Snub-Nosed Monkey Research Center of Northwest University has been cooperating with Primate Research Institute of Kyoto University and Santiago Zoological Society for more than ten years. The studies were conducted in ecological and behavioral aspects of the species. Basing on field observations, the researchers have confirmed the social structure, foraging behavior and time budget.

As far back as in 1992, the German Korad Adenaur Foundation and the School of Economics and Management of Northwest University jointly set up the Chinese German Management Institute to encourage the economic development in Western China. Starting from the founding day, the experts of the Institute have developed some key research programs such as "Study of SMEs (Small- and Medium-Sized Enterprises) Environmental Pollution in Northwestern China", "The Comparative Study on Sino-German SMEs Starts-up" with the financial help of German Korad Adenaur Foundation. Through the continuous study of the enterprises, especially small and medium sized ones, the Institute focuses on solving the utilitarian problems faced by them in the northwest of China. As a result, they published papers and articles and fostered enterprise management experts. Furthermore, they have not only enriched and developed the theories concerning small- and medium-sized enterprises but also promoted the development of the enterprises. After 2004, the European Studies Center and American Ford Foundation have invested several times in the Study on Relative Policies of Sustainable Development in Northwestern China. Besides, the research capacity regarding this topic has been enhanced because of staff

exchanges and academic communications among Northwest University and its international partner institutes.

International Collaborative Research is time-, energy-, and resource-consuming. What factors contribute to a fruitful and sustainable cooperation? From my perspective, there are mainly three.

First of all, mutually beneficial resources and common interests serve as a precondition.

Among all the disciplines of Northwest University, History, Archaeology, Geology, Life Sciences, Economics, and Chemistry enjoy strong academic strengths. The past experience indicates that strong disciplines are more favored by international collaborative research.

I would like to take Archaeology as an instance. Thanks to the accumulation of academic achievements in the long run and profound historical resources, the discipline is excellent in archaeological studies of Zhou, Qin, Han and Tang Dynasties and of the western regions of China. This excellence brings more opportunities for joint research. For example, in April 2004, the Historical Museum of my university collected and preserved the Epitaph for Ino Manari, one of the Diplomats to Tang Dynasty (Kentoushi). It is the earliest epitaph of international students from Japan in Tang Dynasty, and also one of the earliest stone tablets in which the nation's name was inscribed. Therefore, the announcement triggered an upsurge among Chinese and Japanese scholars on the study of the tradition of Chinese-Japanese friendship. Furthermore, Northwest University jointly organized four academic workshops with Japanese counterparts and published a collection of academic research papers.

Secondly, scientific innovation serves as the basic driving force.

Joint research requires helps to tackle major academic issues and enriches scholar's perspectives. For instance, after understanding the origin and evolution of typical animals, Professor Shu Degan is very interested in the historical interactions between physical earth and organisms. Fortunately, Professor Shigenori Maruyama of Tokyo Institute of Technology and Kinya Yasui of Hiroshima University of Japan also shows interest in this topic. Consequently, the Early Life Institute led by Professor Shu and the group of Professor Shigenori Maruyama began the challenging cooperation in terms of "the Evolution of Life and Environments: from Snowball to the Phanerozoic Earth Records in South China".

Thirdly, fostering innovative talents secures its sustainability.

It has been widely accepted at Northwest University that fostering innovative talents to participate in the research projects is of crucial importance for international cooperative research. The cooperation between the Ford Foundation in America and the European Union with Northwest University on economic development in Western China has set a brilliant model. Theory and methodology are regarded as tremendously important in carrying out the cooperative program. Accordingly, both parties have realized that it is necessary to offer training on research methodology to their staff. The European Studies Center has provided a project funding of 388, 700 Euros to support researchers to conduct studies on the policies of sustainable

development in Western China. They can take courses in Europe such as Regional Economic Development and Social Policies Studies. The Ford Foundation has also allocated funding to improve the joint research ability of our staff.

Due to the joint research projects, a group of innovative talents with international perspectives have emerged. For instance, Zhang Xingliang and Hua Hong stand out among the gifted young scholars in the study of early life evolution. Zhang Xingliang has published more than 20 papers on Cambrian Explosion in the international geological journal. He was selected for the Outstanding Talents Project in 2005 by the Ministry of Education. Hua Hong has not only made the discovery of the biomineralization and asexual reproduction of Cloudin, the tubular metazoan fossil but also revealed the complete biological transfer from organic tube layers to crypto-microgained. This provides important proving material for the biomineralization of metazoan. Benefiting from international joint research, these innovative talents will in turn promote the joint research and secure its sustainability.

In conclusion, to achieve international cooperative research, we need to identify mutually beneficial resources and common interests, aim at tech-innovation and pay much attention to nurture talent.

The location of Northwest University, in the former ancient Chang'an city and Guan Zhong plain in Western China, might not enjoy the same advantages associated with the coastal areas. However, being the cradle of the Chinese civilization and the starting point of the Ancient Silk Road, this place is outstanding and prominent in its rich cultural and sci-tech resources, and waiting to be jointly explored.

Advantages, Cooperation and Innovation

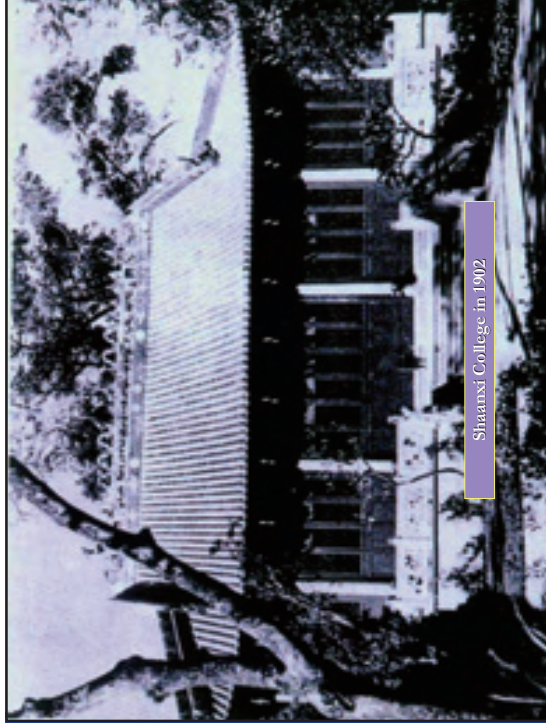
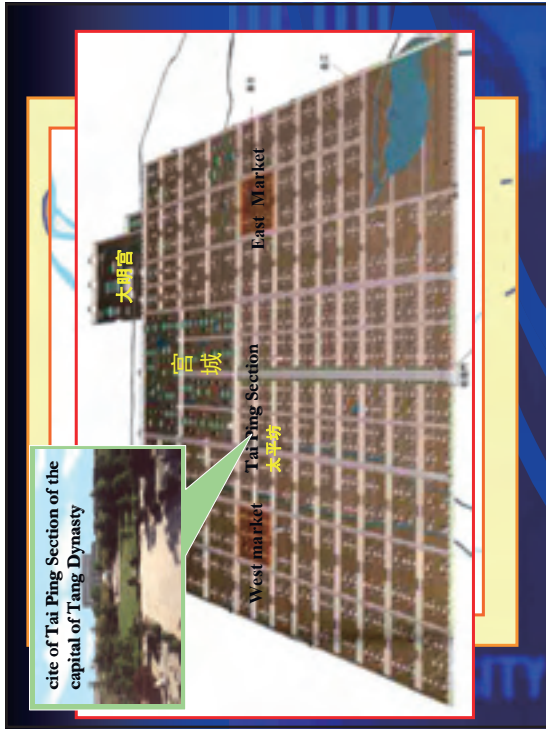
Vice-president, Prof. Fang Guanghua
Northwest University, P. R. China

Abstract

- a brief overview
- some ongoing international collaborative research projects
- three contributing factors in successful joint projects

Northwest University is located in the original historical cite of Tai Ping Section of the capital of Tang Dynasty. It was founded as Shaanxi College in 1902, and now is one of the comprehensive universities in Western China.

A Brief Overview



The university covers an area of 370 acres, consists of 24 schools and departments and 16 research institutes. There are over 2,300 faculty and staff members, including 1,230 full-time teachers. There are 22,000 students, including 5,500 doctoral, graduate students and 600 international students.



Between 2001 and 2006, 14 major international cooperative projects have been undertaken, 42 international workshops and conferences held, 710 experts invited to deliver lectures and conduct research on campus, and over 300 promising mid-career faculty members sent to foreign partners for collaborative research.



president of Northwest Univ. and president of Ecole Normale Supérieure in Paris



president of Northwest Univ. China and president of Northwest Univ. USA



Some Ongoing International Collaborative Research Projects

Regarding the 14 international collaborative research projects, I'd like to highlight the following three:

1. Joint Research in Early Life Evolution

The Early Life Evolution Research Team headed by Prof. Shu Degan of the Geology Department, has cooperated productively with partners.

For example, the collaboration with Prof. Simon Conway Morris from Cambridge University, also a Member of British Royal Academy, has proven to be very successful.

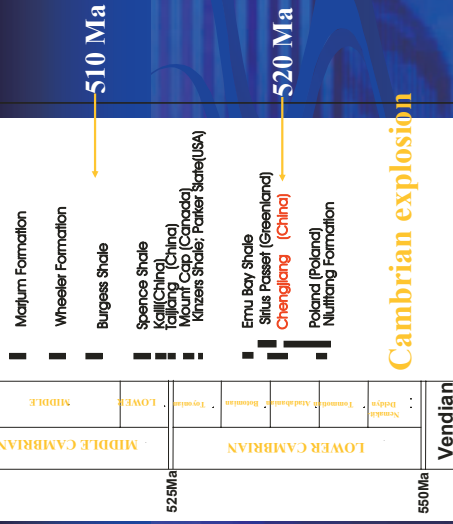
布尔吉斯页岩动物群



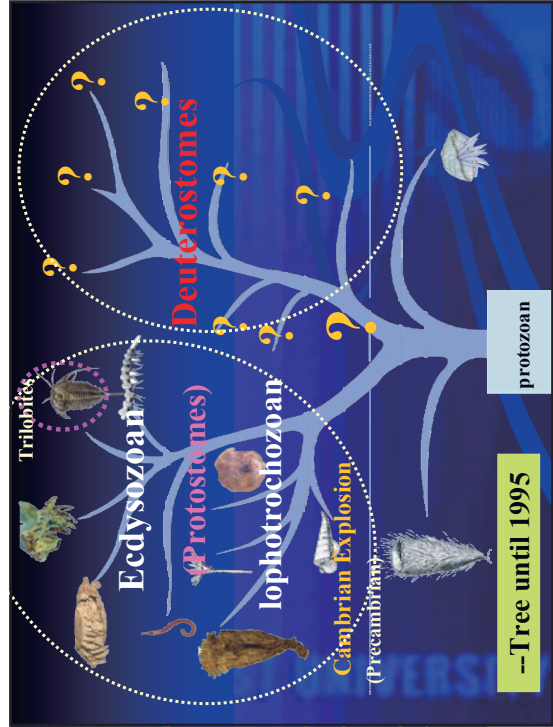
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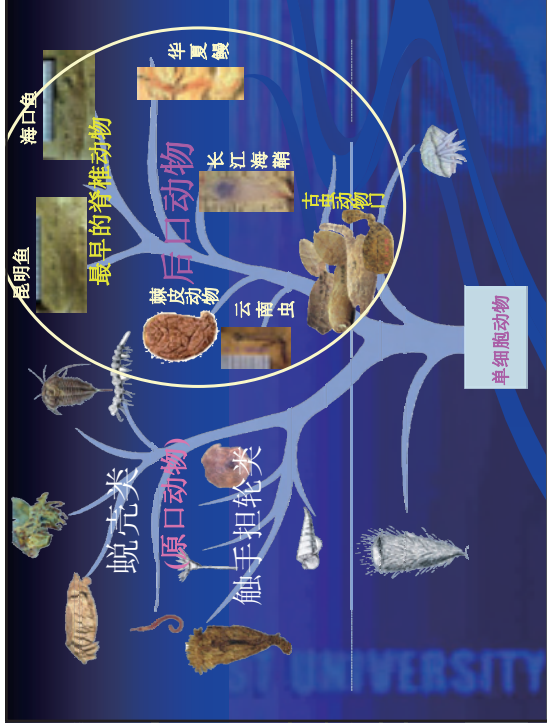
Their collaborative research set up the most complete Phylogeny of Deuterostomia till now and constructed the Animal tree of Cambrian Explosion.

Fossils date of cambrian explosion



Cambrian explosion

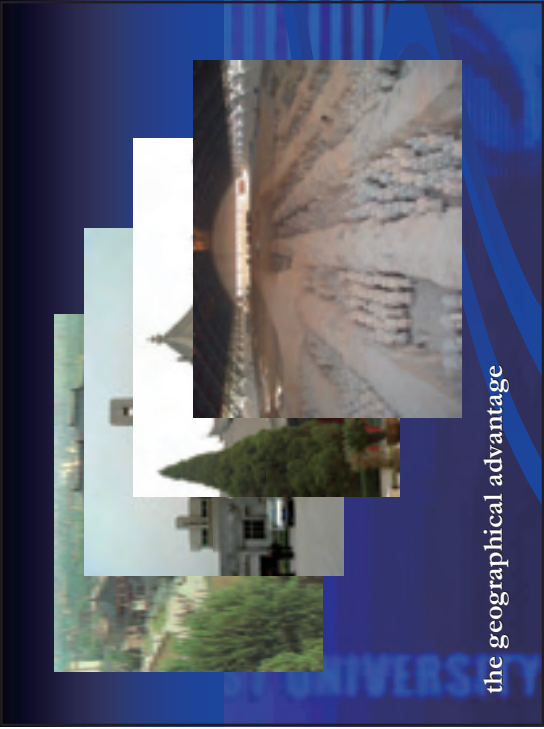




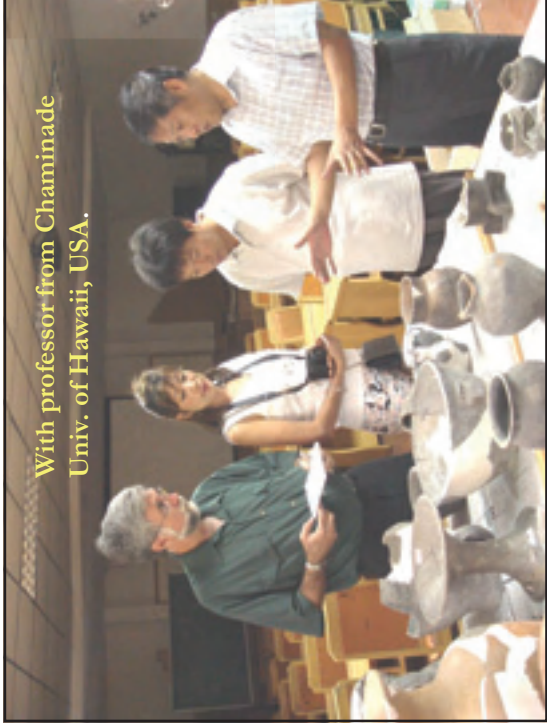
2. Archaeological Research of the Ancient Silk Road

Founded in 1956, The Department of Archaeology of Northwest University is one of the oldest in China.

Situated at the starting point of the ancient Silk Road—Chang'an, It enjoys the geographical advantage to carry out the Archaeological Study of the Silk Road.



At present, the Department has established academic exchange relationships with universities and research institutions from over 10 countries. Hundreds of scholars and experts from the foreign partners visited and delivered speeches at the Department. More than 20 International students have successfully completed their degree or non-degree study in the Department.



Between 2001 and 2006, The joint research projects on the ancient Silk Road with foreign partners are as follows:



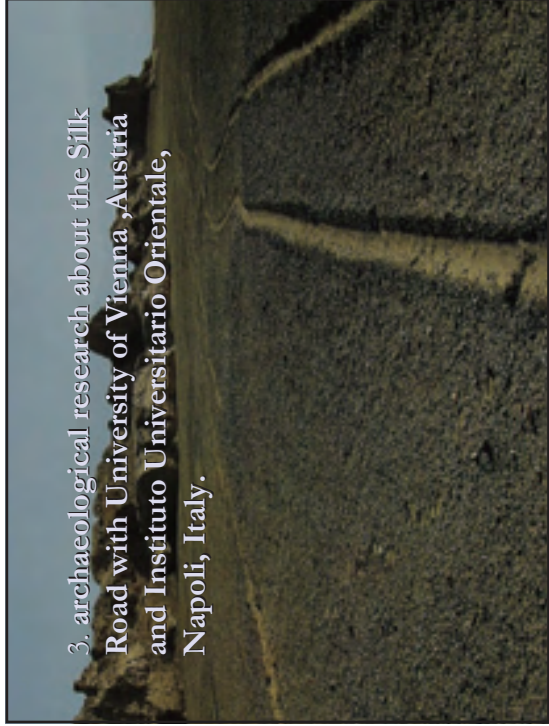
1. on Historic Remains of Ancient Buddhism in Shaanxi, China with Tokyo Research Institute of Culture Properties.

2. on the protection program of the Emperors' Mausoleum Stone Carving of Tang Dynasty with Tokyo Research Institute of Culture Properties;

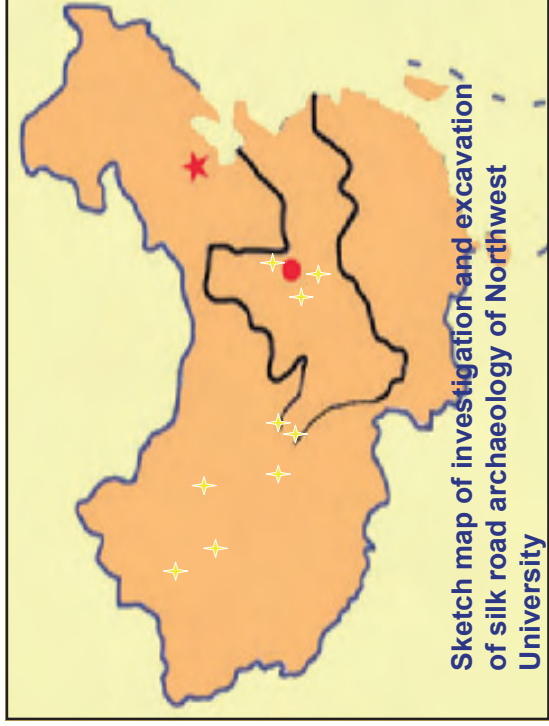


张炜与日中友好协会会长平山郁夫

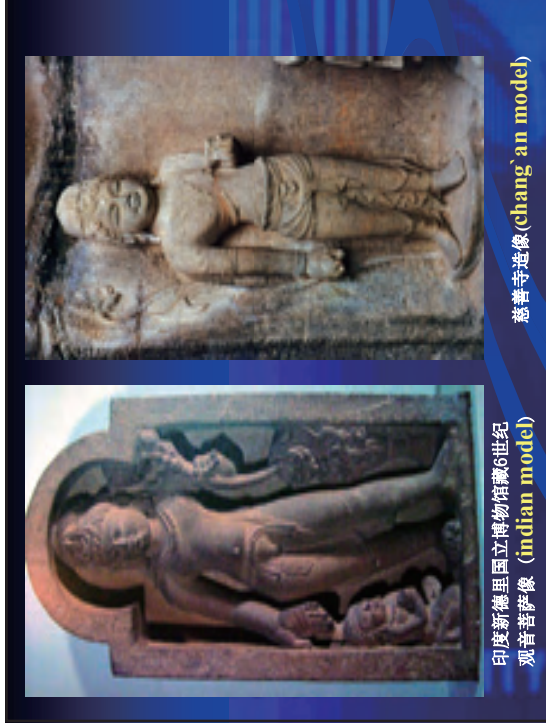
3. archaeological research about the Silk Road with University of Vienna, Austria and Istituto Universitario Orientale, Napoli, Italy.



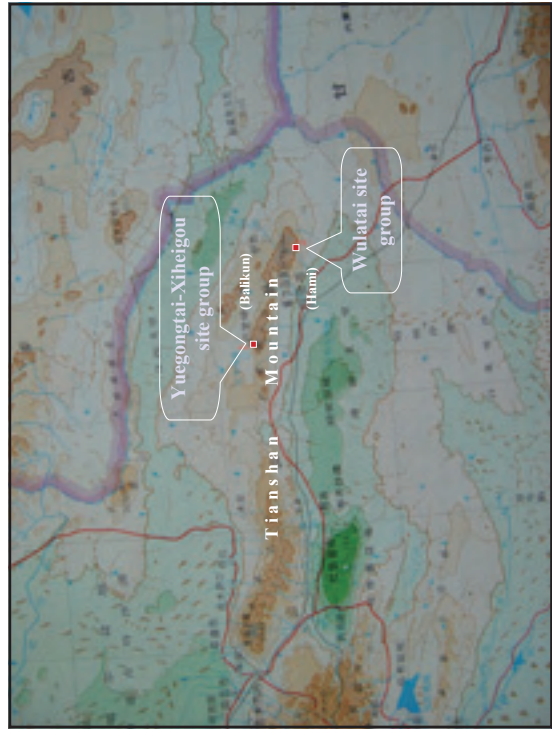
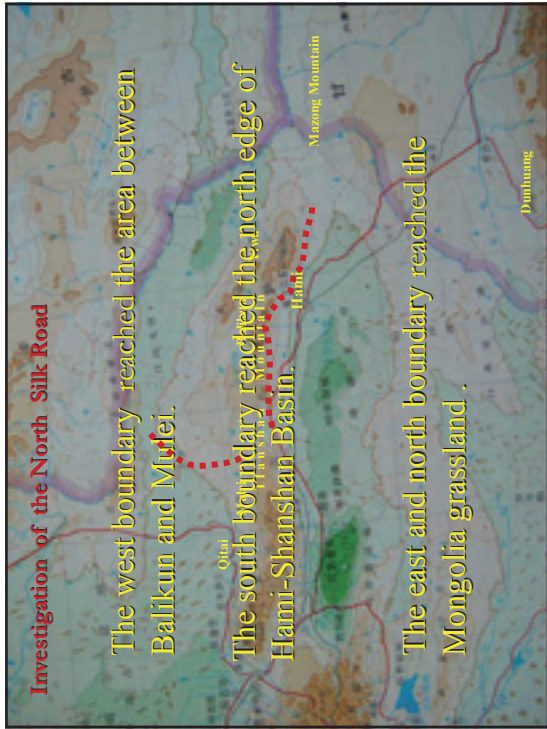
Sketch map of investigation and excavation of silk road archaeology of Northwest University



Through the above-mentioned joint projects, the similarities and differences between the Buddha molding methods in different times and places have been studied.



From the research in areas between the northwest of Gansu and the east of Xinjiang, dozens of nomadic sites along the silk road have excavated, and some essence of ancient silk road culture explored.

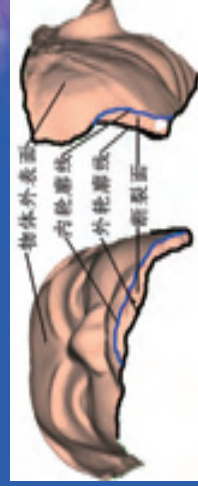


3. Joint Research Program of Digitalized Virtual Restoration of Damaged Relics

China is a nation abundant in relics. Most valuable relics are pottery, porcelain, bronze, terra cotta. Unfortunately, a considerable number of them have become fragments or debris. A major Method that preserve relics is the repeated manual repair of the relics.

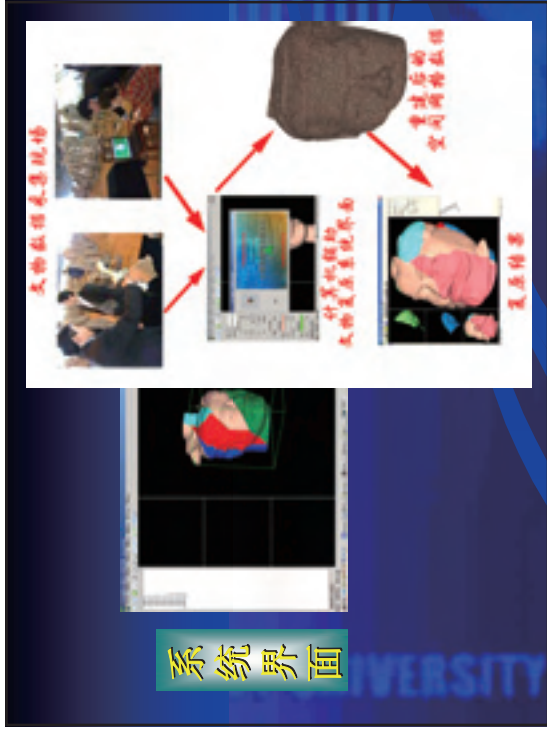
In order to accelerate the speed of relic restoration and reduce the damage for relics during repair process, Visualization Technology Institute of Northwest University has conducted extensive research on digitalized virtual restoration of damaged relics using computer graphics, virtual reality, visualization technique.

It is difficult to bring about the contour line extraction and free match ,realized shape based curve matching through vector space transformation for relics.



Many foreign experts were invited with the cooperation of Chinese research group, including Prof. Cerepi, Dr. Daim from France and Austria.

Due to the engagement of both sides, the research group developed a computer aided relic restoration system. It provides a foundation of relic restoration, repair and simulation and also breaks a new frontier of cultural relic restoration.



Three Contributing Factors In Successful Joint Projects

International Collaborative Research is time-, energy- and resource-consuming. What factors contribute to a fruitful and sustainable cooperation?

First of all, mutually beneficial resources and common interests serve as a precondition.

Among all the disciplines of Northwest University, History, Archeology, Geology, Life Sciences, Economics and Chemistry enjoy strong academic strengths. The past indicates that strong disciplines are more favored by international collaborative research.

I would like to take Archeology as an instance. Thanks to the accumulation of academic achievements in the long run and profound historical resources, the Archeological discipline is excellent in archeological studies of Zhou, Qin, Han and Tang Dynasty and of the Western China. This excellence brings more opportunities for joint research.

For example, in April 2004, the Historical Museum of my university collected and preserved the Epitaph for 井真成. It is the earliest epitaph of the Diplomat to the Tang Dynasty (Kentoushi) unearthed till now, and also one of the earliest stone tablets in which the nation's name Japan is inscribed.

The Epitaph for 井真成, collected by the Historical Museum of Northwest university



stone tablets

墓主志铭文：

共一百二十七字，分十二行。

贈尚衣奉御井公墓志文 并序

公姓井字真成 國号日本 称天纵故能

□ 命近邦驰骋上国 蹈礼乐袞衣冠京带

□ 朝难与侔矣 皇图强学不倦 闻道未终

□ 遇移舟 遽建奔驷 以开元廿二年正月

□ 日乃终于官第 春秋卅六 皇上

□ 伤追崇有典 诏贈尚衣奉御 葬令官

□ 即以其年二月四日 窆于万年县涇水

□ 原礼也 嗚呼 素车路引 丹旌行哀 嗟远

□ 兮 額響日捐 穷郊兮 悲夜台 其辭曰

□ 乃天常哀 兹远方形 既埋于阜 土魂庶

归于故乡

The announcement triggers an upsurge among Chinese and Japanese scholars on the study of tradition of Chinese-Japanese friendship. Under the said theme, Northwest University jointly organized 4 academic workshops with Japanese scholars, and published a collection of academic research papers.

Secondly, scientific innovation serves as the basic driving force.

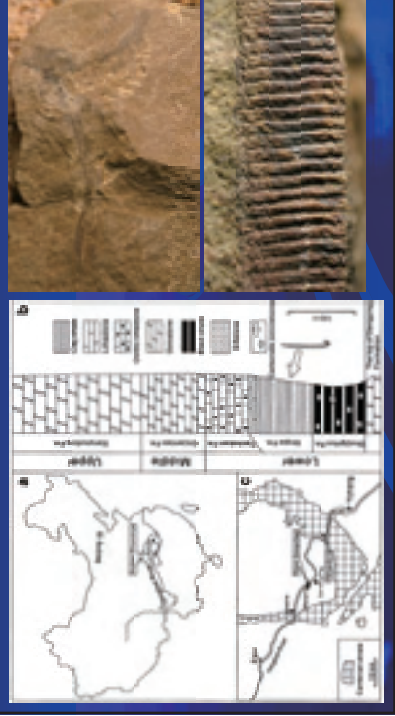


Joint research that helps to tackle major academic issues and enriches scholars' perspectives can always endure.

For example, after understanding the origin and evolution of animals of Cambrian Explosion, Professor Shu is very interested in historical interactions between physical earth and organisms.

Fortunately, Professor Shigenori Maruyama of Tokyo Institute of Technology and Kinya Yasui of Hiroshima University of Japan also shows interest in this topic . Consequently the group led by professor Shu and the group of Professor Shigenori Maruyama began the challenging cooperation about “Co-evolution of Life and Environments: From the Records in South China” .

Soft-bodied fossils from the Cambrian of the Three-gorge area
躯体化石在三峡地区寒武纪地层中的发现



Thirdly, fostering innovative talents secures its sustainability

It has been widely accepted at Northwest University that fostering innovative talents who participate in the research projects is of crucial importance to international cooperative research.

Those innovative talents have emerged due to the joint research projects will in turn promote the joint research and secure its sustainability.

In conclusion, to achieve international cooperative research, we need to identify mutually beneficial resources and common interests, aim at tech-innovation and pay much attention to nurture talent.

The location of Northwest University, in the former ancient Chang'an city, being the cradle of Chinese civilization and the starting point of the Ancient Silk Road, is outstanding in its rich cultural and sci-tech resources, waiting to be jointly explored.

Now, on behalf of Northwest University, I would like to extend warmest invitation to visit my university to all scholars!
Thank you.

Toward Engineering Educational Leader via Active and Sustainable International Research Collaboration

Direk Lavansiri and Tawatchai Charinpanitkul

Faculty of Engineering, CHULALONGKORN University

Payathai Rd., Patumwan, Bangkok 10330

THAILAND

ABSTRACT

New challenging ways toward leadership development have been formulated with an objective of sustainable growth of engineering education in not only domestic but also global level. Faculty of Engineering, CHILALONGKORN University has tried to establish challenging attitudes which are required for achievement of development of new generation of engineers with engineer excellence. It is an important issue that the outcome-based management would be undertaken to ensure sustainable development in collaborative research works. Moreover, mutual benefits among each stakeholder involving in the global engineering education will essentially play an important role in our brighter future.


Keywords : Engineering Education, Collaborative research, International Collaboration



90th Anniversary of Chulalongkorn University

Toward Engineering Educational Leader via Active and Sustainable International Research Collaboration


Direk Lavansiri and Tawatchai Charinpanitkul
 Faculty of Engineering
 CHULALONGKORN University

90th Anniversary of Chulalongkorn University

Overview

- Vision and Mission of CU
- Vision, Mission and Core Value of F.Eng.
- Present status of F.Eng.
- Roadmap and Strategic Clusters toward Engineering Educational Leader
- Summary




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Vision and Mission of CU




90th Anniversary of Chulalongkorn University

CHULALONGKORN UNIVERSITY

- Established in the year of 1917, by King Vajiravudh, (King Rama VI)
- Present status
 - 18 Faculties
 - 3 Affiliated Institutions
 - 3 Colleges
 - 11 Institutes
 - Totally 132 Departments




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CHULALONGKORN UNIVERSITY

- **Present Status**

Degree	Faculty members		Students (Last updated September 2005)		Graduates	
	amount	%	amount	%	amount	%
Bachelor Degree	156	5	20,258	62	3,816	50
Graduate Diploma	-	-	329	1	326	3
Master Degree	1,300	46	10,110	31	3,238	42
Higher graduate diploma	-	-	313	1	140	2
Doctoral Degree	1,376	49	1,450	4	190	2
Total	2,852	100	32,460	100	6,620	100

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CHULALONGKORN UNIVERSITY

- **The Century Policy of Chulalongkorn University**

- To be a knowledge and reference resource
- To improve and develop Thai human resources to be a sustainable, internationally competent, and collaborative society
- To combine research works to academic works, concentrating in extending fundamental and applied knowledge

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CHULALONGKORN UNIVERSITY

- **Mission of Chulalongkorn University**

- To produce internationally competent, and socially compatible students
- To develop moral and leadership
- To explore fundamental and advance knowledge beneficial to Thai society
- To transfer and apply available knowledge into public knowledge, making Thai an internationally sustainable society

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CHULALONGKORN UNIVERSITY

- **Mission of Chulalongkorn University**

- To transfer and apply available knowledge into public knowledge, making Thai an internationally sustainable society
- To conserve, and carry on the beauty of Thai Tradition and Culture.



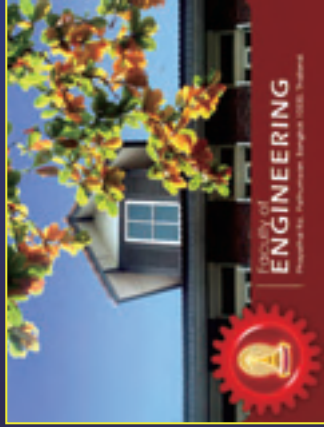
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Vision, Mission and Core Value of F.Eng.



90th Anniversary of Chulalongkorn University


FACULTY OF ENGINEERING




90th Anniversary of Chulalongkorn University

FACULTY OF ENGINEERING

- Established on 1 June 1913, by King Vajiruvudh (Rama VI)
- Merged into Chulalongkorn University in 1916
- Recognized as the "Faculty of Engineering" under CU since then




90th Anniversary of Chulalongkorn University

FACULTY OF ENGINEERING

Missions, Vision, and Values

- The faculty's Vision is "Commitment to Engineering Excellence in Asia"
- Goal "Commitment to the production of high-caliber graduates and academic excellence in Engineering"




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FACULTY OF ENGINEERING

Missions, Vision, and Values

Mission Statements

1. To produce world-class engineers, equipped with required skills and suitable for society
2. To instill ethics in its graduates to be responsible leaders of the society
3. To innovate engineering technologies and integrate various bodies of knowledge for the benefit of Thai society




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FACULTY OF ENGINEERING

Missions, Vision, and Values

- **Mission Statements**
 4. To transfer knowledge to the public in an effort to improve Thai society, leading to self-sufficiency in the global community
 5. To uphold and disseminate Thai arts and culture




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FACULTY OF ENGINEERING

Missions, Vision, and Values

- **Values: Core values "LEADERS"**
 - L**eadership
 - E**xcellence
 - A**ccountability
 - D**iscovery
 - E**thics / team / happy
 - R**elevancy
 - S**ystem (SOTUS)





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Present status of F.Eng.-





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FACULTY OF ENGINEERING



Stakeholder Perspective	Internal Process Perspective
Financial Perspective	Learning and Growth Perspective

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FACULTY OF ENGINEERING

Strategic Plans

- **Stakeholder Perspective**
 - Nationally and internationally accepted academic excellence
 - Student ability accepted at national level and corresponding to international standard




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FACULTY OF ENGINEERING

Strategic Plans

- **International Process Perspective**
 - Research and teaching activities development
 - Proactive Public relations
 - Academic and extracurricular activity, enhancing student's morality and ability




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FACULTY OF ENGINEERING

Strategic Plans

- **Learning and Growth Perspective**
 - Information system development
 - Physical system and supporting resource development
 - Support staff and faculty members development



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FACULTY OF ENGINEERING

Strategic Plans

- **Financial Perspective**
 - Revenue increase
 - Cost reduction



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FACULTY OF ENGINEERING

International Collaborations

- **Faculty of Engineering is engaged in international collaborations with universities and organizations worldwide, including**
 - Massachusetts Institute of Technology (USA)
 - University of Maryland, College Park (USA)
 - Oregon State University (USA)
 - Weldinf Institute SLV Munich (Germany)
 - Warsaw Univ. of Technology (Poland)
 - Slovak Univ. of Technology (Slovak Republic)

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FACULTY OF ENGINEERING

International Collaborations

- Beijing University (China)
- Tsing Hau University (China)
- Univ. of Tokyo (Japan)
- Tokyo Inst. of Tech. (Japan)
- Saitama University (Japan)
- Queensland Univ. (Australia)
- Univ. of Canterbury (New Zealand)
- Korea Science and Engineering Foundation (Korea)




90th Anniversary of Chulalongkorn University

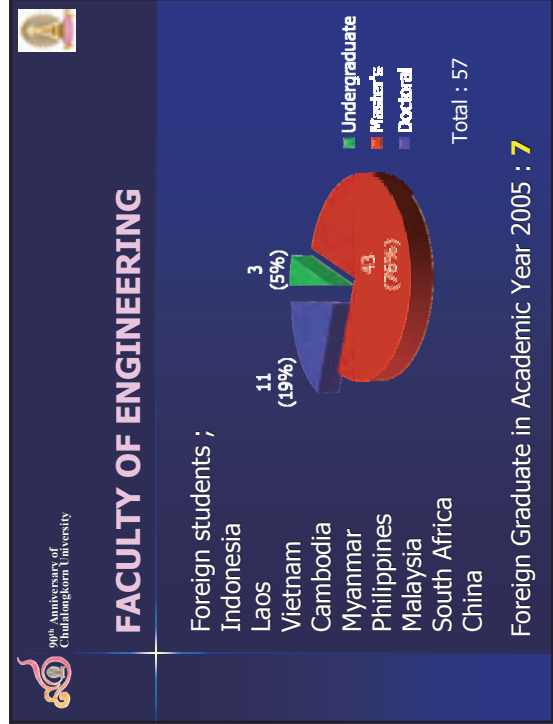
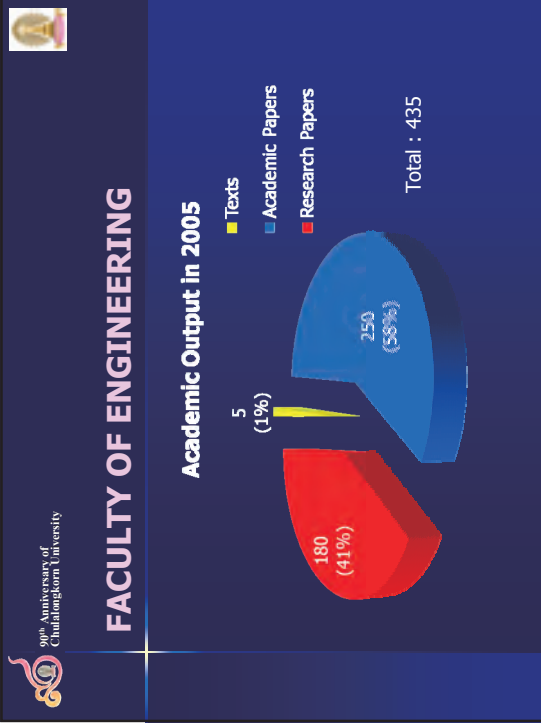
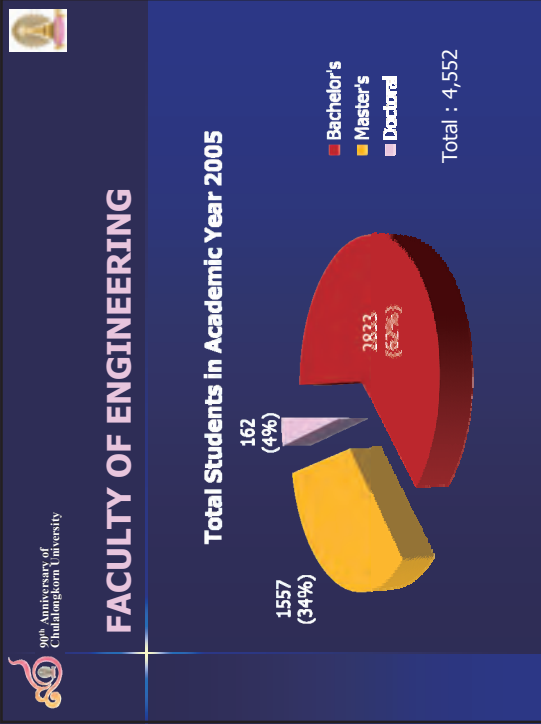
FACULTY OF ENGINEERING

Present Status

- **6 Centers of Excellence**
- **23 Research Units**
- **11 Professors**
- **85 Assoc. Professors**
- **84 Assist. Professors**
- **127 Lecturers**
- **180 Supporting Staffs**

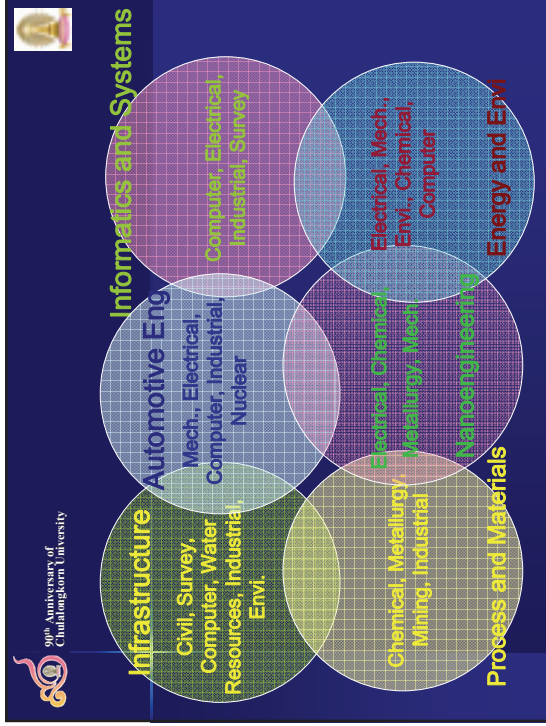
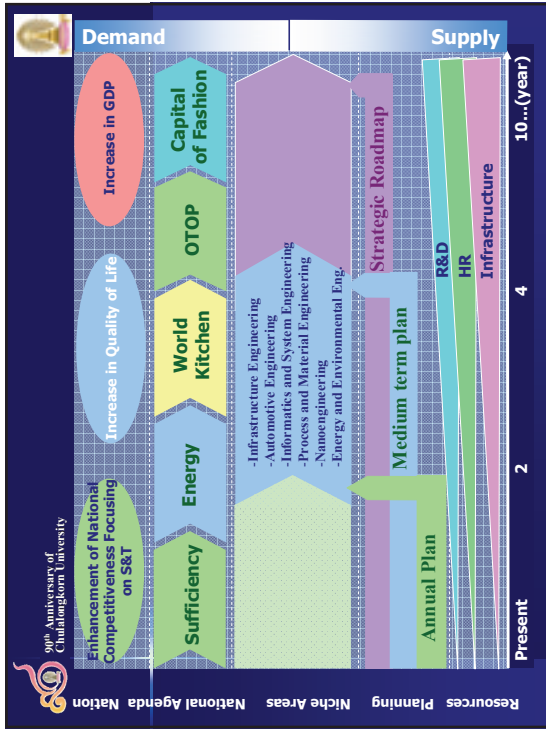


Category	Count
Professors	13
Assoc. Prof.	81
Asst. Prof.	81
Lecturers	135
Supporting	115
Admin.	119
Assoc. Prof.	-
Admin.	-
Supporting	-



90th Anniversary of Chulalongkorn University

Roadmap and Strategic Clusters toward Engineering Educational Leader



90th Anniversary of Chulalongkorn University

Active and Sustainable International Research Collaboration

Mutual understanding with intensive communications among researchers in Clustered Strategic Research Fields

Responding to actual needs of society with focusing points on developing high-caliber engineering graduates with new challenging attitudes

90th Anniversary of Chulalongkorn University

Engineering Educational Leadership

Core Values "LEADERS"	
Leadership	Nationwide leadership in research, teaching, career, public service and upgrading of students to be well-served in leadership paths
Excellence	Commitment to excellence in academic, research and public service
Accountability	Accountability to society in their engineering practices, particularly with regard to potential impacts of their work
Discovery	Discovery and dissemination of engineering knowledge to ensure continued progress and innovations
Ethics/Team/Happy	Commitment to code of conduct, contribution to teamwork, and being happy in the course of their work
Reflexivity	Keeping up to date with advancements in society and the ability to adjust to changing times
System (SORUS)	Systematic performance of engineering tasks, coupled with an appreciation and implementation of SCRTS-Spink, Order, Tradition, Unity, Seniority-system



90th Anniversary of
Chulalongkorn University



Summary



90th Anniversary of
Chulalongkorn University




Summary


Challenging attitudes are required for achievement of development of new generation of engineers with engineering excellence

The outcome-based management would be undertaken to ensure sustainable development in collaborative research works

Mutual benefits among each stakeholder involving in the global engineering education will essentially play an important role in our brighter future



90th Anniversary of
Chulalongkorn University



Acknowledgement

D.L. and T.C. gratefully acknowledge financial support from CU and F.Eng.,CU, respectively. Siriporn M. and Sira S. are acknowledged for preparing slide artworks.

THANK YOU FOR YOUR ATTENTION

Status Quo and Experience of International Research Collaborations at Fudan Univ.

LIU Li

Director of Overseas Student Exchange, Foreign Affairs Office,
Fudan University
220 Handan Road, Shanghai 200433,
P.R.China

ABSTRACT

Following the steps of internationalization, some top Chinese universities, including Fudan University, to some extent, are getting more and more involved with international research collaborations. In this presentation, those different ways, through which the international research collaborations have been increased at Fudan University, will be introduced. Examples are as following: through individual faculties, institutes, centers/platforms of Fudan University and their counterpart abroad, through foreign research foundations and companies, through cooperation with alumni, through university exchange and so on.

In order to promote international research collaborations, an influence how foreign affairs staff can exert on this aspect are under consideration at Fudan University. One newly established policy will be presented as well.

Status Quo and Experience of Internations Research Collaborations at Fudan Univ.

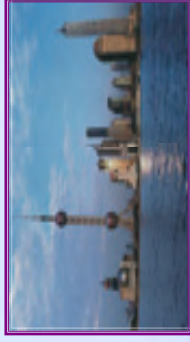
LIU Li

Director of Overseas Student Exchange
Foreign Affairs Office, Fudan University
220 Handan Rd., Shanghai 200433, P. R. China

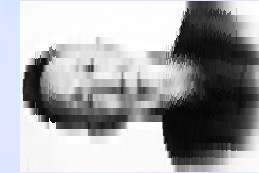
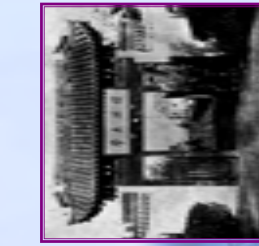
February 1, 2007

Shanghai --- Cradle of Modern Higher Education in China

- In 1849, Xu Hui Public School was established by Catholic Church, followed by other schools by churches.
- In 1896, Nanyang Public School was established as the second college in modern Chinese history.

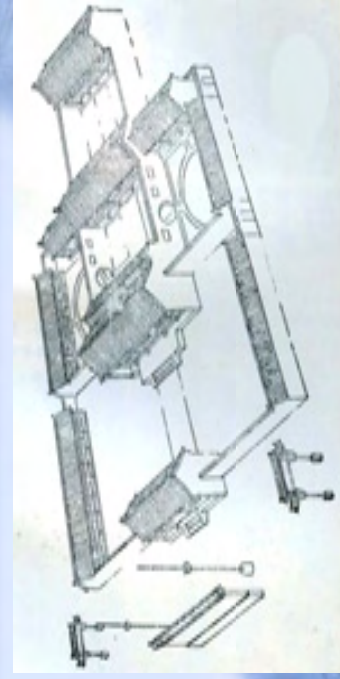


Fudan University: a state key comprehensive university
established in 1905



The founder,
Mr. Ma Xiangbo,
a Dr. of Theology

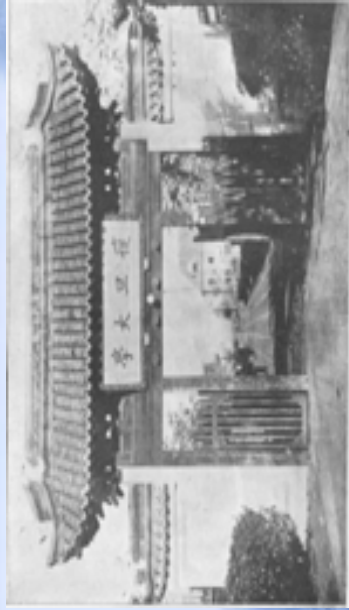
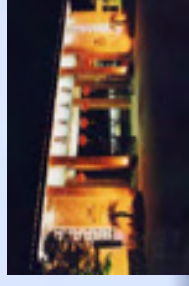
Dr. Sun Yat-sen,
Director of Fudan Board



Restored plan of the university during 1905-1911

History

- ❖ Founded in 1905
- ❖ Renamed as Fudan University in 1917
- ❖ Became a national university in 1941
- ❖ Reinforced into a comprehensive university in 1952
- ❖ Merged with Shanghai Medical University in April 2000



Gate of Fudan Jiang Wan campus (from 1922)

Derivation of the name

- “Brilliant are the sunshine and the moonlight, Again the morning glory after a night.”
——Confucian classic *Shang Shu* (*The book about olden times*)



Li Denghui
(1872-1947)
President of Fudan, 1913-1941.
The only great educator who devoted his life leading only one university in contemporary China.

- The history of Fudan is an integral part of the history of Chinese higher education.
- The fate of Fudan is closely linked with the rise and decline of the nation and the evolution of the society



Design of the New Fudan Campus





Strategic Planning

- Informationalization
- Internationalization
- Inter-disciplinary approach

Fudan University

- 17 Fulltime Schools (colleges)
- 5 Independent Department
- 9 Affiliated Hospitals



Faculty at Fudan University

- 2,177 faculty members
(not including all those in hospitals)
 - 615 professors, 804 associate professors, and 798 lecturers
 - younger than 40: >53%
 - Tutors for PhD: ~600
 - 24 academicians of Chinese Academy of Science and Chinese Academy of Engineering

Cultivation of Talents

- B.A, B.Sc. degree in 79 disciplines
- M.A., M.Sc. degree of 201 disciplines
- PhD degree in 134 disciplines
- 25 Post-doctoral mobile station



Research Institutes: 77
Research Centers: 126
National Key Disciplines:40

Institutes of International Studies

Center for American Studies
 Center for European Studies
 Nordic Centre
 Center for Japanese Studies
 Center for Russian and East European Studies
 Center for Korean Studies
 Center for Latin American Studies
 Austrian Center
 Center

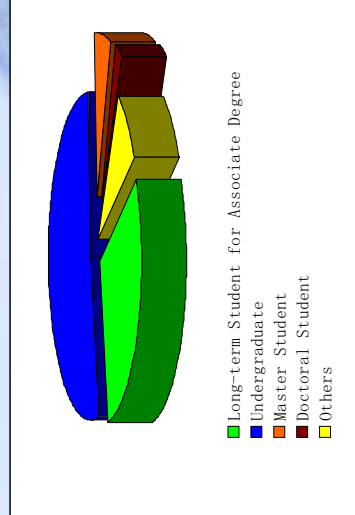
International Liaison Offices

Nordic Centre
 Austrian Center
 Italian House
 National University of Singapore Overseas
 Campus
 University of North Carolina Liaison Office

200,000 students graduated from Fudan since the foundation of the university

26,327 fulltime students
 Doctoral candidates 3,132
 Master candidates 7,016
 Undergraduates 15,170
 For associate degree 1,009
 (*International students* 2,353)
18,555 part-time students
 Continuing education 11,037
 Distance learning 5,757
 Others 1,761

International Students At Fudan, 2005



(totally 5401, the second largest int'l student group)

Research Units at Fudan

- 77 Research Institutes, 126 Interdisciplinary Research Center, over 140 laboratories, including
 - 5 State Key Lab
 - 9 Ministry of Education Key Lab
 - 6 Ministry of Health Key Lab
 - 2 Ministry of Education Project Center
 - 7 Ministry of Education Key Research Bases of The Humanities and Social Science

State Key Laboratories

- Genetic Engineering
- Applied Surface Physics
- ASIC & System
- Medical Neurobiology
- Advanced Photonic Materials and Devices

Ministry of Education Key Laboratories

- Advanced Coatings
- Applied Ion Beam Physics
- Bio-diversity & Ecological Engineering
- Molecular Engineering of Polymer
- Molecular Medical Virology
- Molecular Medicine
- Nonlinear Mathematic Models & Methods
- Studies of Carcinogenesis & Invasiveness
- Wave Scattering and Remote Sensing Information

Ministry Of Health Key Laboratories

- Molecular Virology
- Glycoconjugate
- Functional Reconstruction of Hand Hearing
- Antibiotics and Clinical Pharmacology
- Viral Myocardial Diseases

Affiliated Hospitals

Total in-ward beds: ~6,000

- 4 general hospitals
(2 in city center, 2 in sub-urban)
- 1 children's hospital
- 1 women's hospital
- 1 cancer hospital
- 1 EENT hospital
- 1 general infectious diseases hospital

Ministry Of Education Key Research Bases of The Humanities And Social Sciences

- Research Center of Ancient Chinese Literature
- Research Center of Chinese Historical Geography
- Research Center of Contemporary Marxism
- Research Center of Chinese Socialist Market Economy
- Research Center of Information and Mass Communication
- Center for American Studies
- Institute of World Economy

Research Platforms for Social Sciences, Ministry of Education

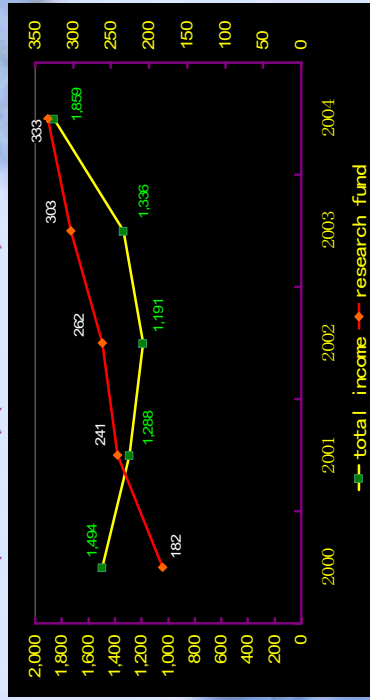
- Cultural Legacy and Cultural Novelty
- Historical Geography
- American Studies
- Overseas Marxism Research
- Public Administration and Public Policy
- Mass Communication and Media Research
- Economic Competition in Global Environment

Research Platforms of Basic Sciences and Technological Innovation

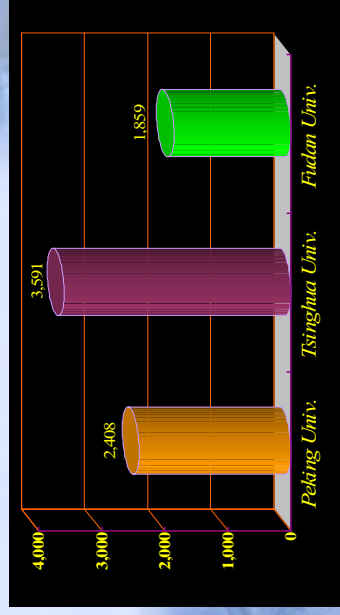
- Advanced Materials Sciences
- Bio-medical Sciences
- Brain Science
- Micro-electronics and Nano-technology
- Mathematics and Physics

Active in Hi-Tech / Science Parks

Yearly income and research fund (2000-2004) (million RMB)



Income of Peking University, Tsinghua University, and Fudan University in 2004 (million RMB)



International Activities at Fudan

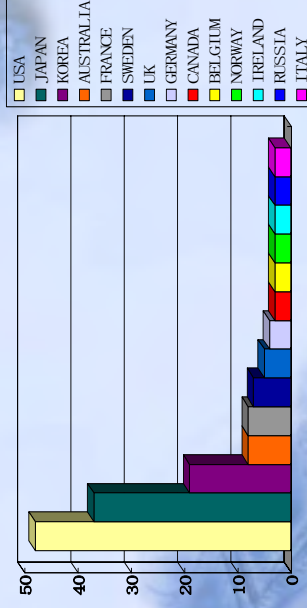
In 2002/03/04/05,

- 5200/3600/>8000 /10000 foreign guests visited Fudan, including
 - university presidents
 - Nobel Prize winners
 - Government TOP VIPs, and
 - CEOs of World enterprises / organizations
- >2500 faculty member visited abroad annually
- >400/500/600/800 students were sent abroad by university

Cooperative projects at Fudan

- More than 10 cooperative projects, ranking the first in universities in China
 - MPA with Hong Kong University
 - MBA with Hong Kong University
 - MBA with BI (Norwegian Management School)
 - EMBA with the University of Washington in St. Louis
 - Master of Language and Literature with Sydney University
 - Master of Micro-electronics with TU Delft University
 - Dual Bachelor Degree in software with University of College, Dublin
 - Master in Management with Hamburg University
 - Master in Fashion Mng with Bocconi University

Fudan University has concluded scholastic exchange/cooperation agreements with over 170 universities in 26 countries



Austria, Finland, Holland, Singapore, Denmark, Mexico, New Zealand, Thailand, Tor 2

International Activities

- Cultural activities for students and faculties
- Invited speeches
 - Academic
 - Governmental
 - Industrial
- Conferences, seminars, workshops, etc
- Joint researches

Vision:

One of the top universities in the world

- Building a first-class faculty team
- Producing students with creativity
- Encouraging interdisciplinary research and achieving breakthrough
- Internationalization
- Contribution to the society

Outline

- Status Quo
- Experience
- University New Policy

Status Quo

- **Number**
- **Level**
- **Various ways**

Various Ways

- 1. Foreign Foundation and companies
- 2. Cooperation via Alumni
- 3. Individual faculties, institutes, centers of Fudan and their counterpart abroad
- 4. University exchange

1. Foreign Foundation and companies

Humanities:

- Ford Foundation: law
- MacArthur Foundation: armament control and regional safety
- EU: Economics
- Japanese International Exchange Foundation (日本国際交流基金): Japanese issues

1. Foreign Foundation and companies

Natural Sciences:

- Intel, IBM, Microsoft, Alcatel, Phillips, HITACHI, FUJITSU:
- Information science and Technology: software, microelectronics, computer, etc.
- LG: Chemistry
- GE: Materials
- DSM Nutritional Products AG, Switzerland: RMB 36 million

1. Foreign Foundation and companies

Intel China Ltd.:

- 1995
- 1999
- Each year of 2001-2006

2. Cooperation via Alumni

Institute of Developmental Biology & Molecular Medicine (IDM) (Founded in October 27, 2004)

- As an international academic research center, the IDM promotes scientific and educational exchanges with international scholars.
- Founders: professors of Yale Univ., Colorado Univ., Duke Univ.

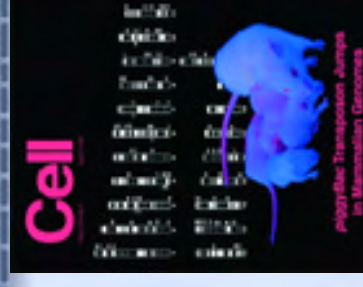
2. Cooperation via Alumni

- Academic Advisory Committee of IDM:

6 Chinese Members

7 foreign members from:

Harvard University
UTSW (University of Texas Southwestern Medical Center Dallas, Texas)
Baylor Medical School, Yale Univ.
MIT
FHCRC (Fred Hutchinson Cancer Research Center, Seattle)



Efficient transposition of the piggyBac (PB) transposon in mammalian cells and mice.
Cell. 2005 Aug 12;122(3):473-83. Epub 2005 Jul. 21.

3. Individual faculties, institutes, centers of Fudan and their counterpart abroad

Population Institute of Fudan Univ.

East Asia Development Research Institute of Japan

Kyushu –Shanghai Development

4. University exchange

- Fudan Univ., China
 - Bocconi Univ., Italy
 - ESSEC, France
- } Asia-Link Program
(Fashion Management)
- Univ. of North Carolina: Journalism
 - Queen's Univ.: MPA Program
 - Helsinki Univ. of Technology (TKK): Gender study

Experience

- Seize the opportunities of receiving visitors:
York Univ.

Toronto-Shanghai Urban Culture Symposium

Experience

- Explore more collaboration with exchange partners

Queen's Univ.

Development study, biodiversity, environmental protection

Experience

- Pay attentions to different materials from embassy, general consulate, foreign universities

Scholarship from Canadian Embassy

University New Policy

Aims:

- To fetch in and create more research collaboration opportunities
- To explore internationally competitive research
- To promote the strength of international research collaboration at Fudan

University New Policy

Methods:

1) Three-office-involved working system

Foreign Affairs Office
Office for Humanities Research
Office for Natural Sciences Research

University New Policy

2) Making full use of various platform

American Center
Nordic Center
Austrian Center
Europe Center
Yale-Fudan Liaison Office
UNC Office
China-Sweden College, etc.

University New Policy

- 3) Keeping close contact with well-known universities and striving for their research strength and funding



Responding to the international needs in the 21st Century

— Taking the example of the University of Tokyo —

Assoc. Prof. Miho Funamori

Deputy Director, Planning Office, Division for International Relations,
The University of Tokyo

ABSTRACT

The international research collaborations of the University of Tokyo have been carried out by the pure curiosity of individual faculty members or by responding to the need of each discipline.

In the year 2004, the University of Tokyo got its autonomous status as a “national university corporation” due to legal change for all national universities in Japan. One year before the corporation, the University of Tokyo drafted a charter which should guide us as an autonomous university. The charter was drafted observing the globalization process going on and trying to make it an opportunity for the University of Tokyo to have an international aspect.

The charter pointed out two values which are important to us. One is to explore the highest scholarship and to serve to the public through the achievements in higher learning. The second is that we will recognize ourselves as a Japanese university located in Asia and that we will strive to strengthen our links with Asia.

The University of Tokyo embraces a great variety of disciplines and research areas with its 10 faculties, 16 graduate schools, 11 research institutes, 21 university-wide centers, and numerous research centers which has accumulated in the 130 years of history. The research and the related international activities have been carried out by pure curiosity of respective departments or researchers themselves.

These international activities will continue to develop but with the above mentioned corporatization some of the activities will be aligned and supported to achieve the goals pointed out in our charter.

Now we see some interdisciplinary networks or initiatives evolving which try to focus on global issues. There are some international collaborative works within the framework of East Asia which seek common grounds and differences in this region. Some departments create research labs abroad to explore a new frontier.

The globalization seems to push us towards a “global standardized” value system leading the world’s universities to work in the same manner on same problems, at the first place. But working abroad with international partners, we also see that there is a strong need to treat different culture and different countries differently and that the appreciation for cultural diversities is important.

Relating this with our second emphasis mentioned in our charter we will drive our international collaboration forward.

Although the international research collaborations seem to be taking a good step we still see that much more work should be done for the international education. We also see that we need to build more frameworks and also facilities to do so.

In the coming years we will work on this and we hope to meet our charter emphases both in research and educational aspects.

Internationalization Research Collaboration of the University of Tokyo

Miho Funamori
Deputy Director, Planning Office
Division for International Relations, UT
2nd University Administrators Workshop
1 February 2007



The University of Tokyo: General Information

- Established: 1877
- Organization:
Faculties-10
Graduate Schools-16
Research Institutes and Centers-32
- Number of Personnel:
Faculty Members-Approx 4,000
Administrative Staff-Approx 3,000
- Students enrolled: Approx 30,000
- Annual Budget: Approx 2 billion USD



The Charter of the University of Tokyo (enacted in 2003)

- The goals of the University of Tokyo lie in maintaining as well as developing the highest level of education and research in the world and in serving the public interest of the world.
- Keeping in mind that we are a Japanese university located in Asia, this university, by taking advantage of the expertise accumulated in Japan, will strive to strengthen its links with Asia.



International Center for Elementary Particle Physics (ICEPP)



- **MISSION:**
 - As a shared facility, open to all Japanese scholars, ICEPP's mission is to **promote and assist international research collaboration** for the study of the most fundamental particles and forces of nature by **using the world's most forefront particle accelerators.**
 - Established in year 1974.
- **Accomplishment of ICEPP:**
 - 1970's: Intl. Collaboration with DESY, German Electron Synchrotron
 - DASP Exp. with e⁺e⁻ collider DORIS
 - JADE Exp. with PETRA.
 - Since 1980's: Intl. Collab. With CERN, European Organization for Nuclear Research.
 - 1982-OPAL Exp. with e⁺e⁻ collider LEP1
 - Z⁰ Particle
 - 1996- OPAL Exp. with e⁺e⁻ collider LEP2
 - W⁺W⁻ Particle
 - 2007- ATLAS Exp. with large hadron collider LHC.
 - Higgs particles and supersymmetry
- **Contributions of UT Team:**
 - Proposal and main function in OPAL Exp.
 - Proposal and main function in ATLAS Exp.

In an ever pursuit
for most fundamental particles
at the world's highest energy level
in union with world scientists!



Here... http://www.icepp.s.u.tokyo.ac.jp/index_e.html **Some of the UT Team**

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International Research Collaboration in Big Sciences: Example of CERN

LHC:
Protons accelerated to 7TeV
40,000,000 collisions/sec.

27km

**CERN:
European Organization for
Nuclear Research**

- The world's largest particle physics laboratory
 - 20 member states
 - 28 non-member countries
 - 8 observers
- Participating people:
 - About 3000 staff at CERN (without researcher)
 - About 6500 researchers (representing 500 universities and 80 nationalities), about half of the world's particle physics community

LHC Computing Grid →

- 15 Petabytes (15 million Gigabytes) of data annually
- A global data storage and analysis infrastructure

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Institute for Cosmic Ray Research (ICRR)

Elucidating the principles of space (vast scale) and elementary particles (miniscule scale) at the same time.

More... http://www.icrr.u-tokyo.ac.jp/index_e.html

Exploring the enigmatic origin of ultra-high cosmic rays

Telescope Array, U.S.A.

Chacabuta Observatory, Bolivia

Tibet Air Shower Array

Exploring the composition of cosmic rays and observing solar magnetic field, etc.

CANGAROO, Australia

Y-ray telescope

Exploring the origin of cosmic rays like the supernova remnant

In an ever pursuit for the best observation spot in the world

SUPER KAMIOKANDE

- Neutrino detection and nuclear decay search in quest for **grand-unified field theory**
- 40m in height and diameter, 1000m under the ground, 50,000-ton water Cherenkov detector. Predecessor Kamoharid-led to **Nobel Prize** in Physics in 2002 of Prof. Koshiba for creating "**nuclear astronomy**".
- Cryogenic Laser Interferometric Gravitational Wave Telescope
- Akeno Giant Air Shower Array, and other

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Historiographical Institute — The Fundamentals for the History of Japan

MISSION:

- Examine, compile, and publish historical documents relating to pre-modern Japanese history (1661-1868).
- Originating in 1901, official since 1869, transferred to UT in 1988.

Conservation of the historical documents

Reproduction of documents for Research Use

Compilation of Source Books on the historical documents

International Outreach:

- Collaboration with Chinese and Korean historiographical institutions which share Chinese letters
 - Sharing techniques & archives
- Compilation of Japanese documents in foreign countries
 - Portugal, Spain, Russia, East Asia, which have historical relationships with Japan.
- Disseminating archives through internet: **SHIPS containing 28 databases!**
 - 1,300,000 access/month
 - About 20 % from outside Japan

Information on:
-Archive
-Person
-Feature
-Location

More... <http://www.hi.u-tokyo.ac.jp/index-e.html>

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East Asia Liberal Arts Initiative (EALAI)

Role of EALAI : To share liberal arts resources of UT with East Asia, aiming holistic development of university students. Through two-way educational exchanges with other universities in East Asia, EALAI fosters mutual progress leading to the formation of shared approaches to liberal arts education in the region.

EALAI Projects

- Sharing knowledge with East Asia
- Learning from East Asia
- Establishing centers for liberal arts education in China

Partner Universities

- Peking University
- Scout National University
- Vietnam National University, Hanoi
- Nanjing University

Liberal Arts at UT

- the only national university in Japan that has kept and continues to enhance its liberal arts college

More... <http://www.ealai.c.u-tokyo.ac.jp/>

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Alliance for Global Sustainability (AGS)

AGS: An **international partnership**, since 1996 of four leading universities for forming a cooperative venture that **seeks solutions to the issues around global sustainability**.

Partner Universities:

- The University of Tokyo (UT)
- Massachusetts Institute of Technology (MIT)
- Swiss Federal Institute of Technology (ETH)
- Chalmers University of Technology (Sweden).

Three-fold Mission of the AGS:

- **Research:** Improving scientific understanding of global environmental challenges by creating new knowledge through research
- **Education:** Educating new generation leaders with the knowledge and skills required to meet the challenges of sustainable development
- **Outreach:** Taking a step beyond normal academic dissemination of results to **facilitate implementation**

Management chart of the AGS

AGS Alliance Governing Board
(AGS International Advisory Board)
Chair and Vice-Chair

...now also in collaboration with the IR3S, a research network within Japan for sustainable science.

AGS

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International Alliance of Research Universities (IARU)

Yale, UC Berkeley, PKU, UT, NUS, ANU, Copenhagen, ETH, Cambridge and Oxford

“Global Changes and Sustainability” Project

1. Movement of People
2. Longevity and Health
3. Energy, Resources and Environment
4. Security

The University of Tokyo will host the symposium on “Energy, Resources and Environment” commemorating its 130th Anniversary in February 2007.

Strategic drawing together of a selected group of **research-intensive universities**

- **Similar values, a similar vision and a commitment to educating future world leaders.**
 - Exchange of researchers and students
 - Research collaborations
 - Joint degree and dual degree

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WuXi Representative Office by the School of Engineering

- Collaboration with: Chinese Univ., Research Institutes, Industry
- Field: Energy, Environments, and Manufacturing Science
- Exchange and cooperative research on energy and environmental problems, environmental conscious design and manufacturing.
- Collaboration with industry sectors on nano-technology and microelectronics.

東京大学无锡代表处

Collaboration of the University of Tokyo with WuXi

See... <http://133.117.6.211/~wuxi/chinese/index.html>

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Japan-China Collaboration on Emerging and Re-emerging Infectious Diseases initiated by the Institute of Medical Science

- **Research Center for Asian Infectious Diseases (IMSUT):**
 - 1 project office in Beijing
 - 2 research labs (ISVL, LAMIM) in collaboration with Chinese Academy of Sciences, Institute of Biophysics & Institute of Microbiology
 - 1 joint program in Harbin with Chinese Academy of Agricultural Sciences
- **Targets of “Japan-China Collaboration on Emerging and Re-emerging Infections” Project:**
 - Establishment of a continuous academic research collaboration in China
 - Development of international research collaboration on infectious diseases
 - Nurturing of internationally active talents

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Campus Internationalization

- Development of "International Campus" at Kashiwa
 - World-class research facilities
 - Upgrade lodging facilities
 - Living support system in collaboration with the local community
 - Improve the environment for promoting the internationalization of the campus
- Developing Infrastructure for Internationalization
 - Lodging facilities for foreign researchers (International Guest House)
 - Enriching materials in foreign languages

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Providing Students with International Experiences

- UT students at Devonian sites in Australia which do not exist in Japan (vice versa also planned).

Providing students with international experiences which lead to deeper understanding and better scholarship.

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Challenges in Promoting Internationalization

- Acquisition of housing, scholarships, and space for facilitating the acceptance of exchange students and researchers from abroad.
- Improvement of the English abilities of administrative staff so as to provide better administrative support for the overseas students.
- Establishment of the effective and efficient system for student/researchers exchange – in order to exchange as many students/researchers as possible.
- Responding to the diverse needs arising during the course of internationalization of education and research; needs could be different depending upon the fields of specialty.

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Closing

- UT, with an awareness of its being both a Japanese university and part of Asia, will further promote internationalization.
- UT aspires to become a university where multifarious human resources from around the world assemble out of the desire to participate in the UT's education and research activities replete in creativity and intellectual stimuli.

Thank you!



Ways to Future for Universities
– International Collaboration

Tsinghua University, Beijing
Prof. Yi ZHANG

2007年10月3日

CONTENTS



- Brief Introduction
- Review on Programs
- Overview of Collaboration
- Conclusion

BRIEF INTRODUCTION

- University History
 - Tsinghua School from 1911
 - National Tsinghua University from 1928
 - Southwest Associated University at Kunming from 1937
 - Tsinghua University from 1949
- Multi-disciplinary University of Engineering beginning from 1952
- Comprehensive, Research-oriented and Open reconstructed in 1978–2000

BRIEF INTRODUCTION

- Campus Size 395 Hectares

BRIEF INTRODUCTION

- Undergraduates 13,788
- Graduates 13,547

BRIEF INTRODUCTION

- Comprehensive University

13 Schools

- Aerospace
- Arts and Design
- Architecture
- Civil Engineering
- Economics and Management
- Humanities and Social Sciences
- Information Science and Technology
- Journalism and Communication
- Law
- Mechanical Engineering
- Medicine
- Public Policy and Management
- Sciences

5 Independent Departments

- Chemical Engineering
- Environmental Science and Eng.
- Electrical Engineering and Applied
- Electronic Technology
- Engineering Physics
- Materials Science and Engineering

BRIEF INTRODUCTION

- Research-Oriented University

- Laboratories 170
 - National Lab for Information Science and Technology 1
 - State Key Laboratories 11
 - MOE/MOST Key Laboratories 15
 - Beijing Key Laboratories 4
- Engineering Centers 5
 - National Engineering Research Centers

BRIEF INTRODUCTION

- Open University – International Partnership

- 153 universities in 29 countries
- 33 companies from top 100 companies in the world
- 57 joint-labs and joint research/training centers

University Level Agreement

- EUROPE** 66 University Level Agreement
- ASIA** 49 University Level Agreement
- OCEANIA** 13 University Level Agreement from 2 countries: Australia, New Zealand
- NORTH AMERICAN** 41 University Level Agreement from 3 countries: American 33, Canadian 2, Mexican 1

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REVIEW ON PROGRAMS

- Fundamental Collaboration
 - Joint Education Programs
 - Programs for Foreign Students
 - Distinguished Foreign Expert Programs
 - Joint Research Programs
 - Cooperation with Industries

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REVIEW ON PROGRAMS

- Fundamental Collaboration -- Joint Education Programs
 - Joint degree programs with world leading universities
 - Student exchange programs with world leading universities
 - Joint programs supported by Chinese National Foundation for Studying Abroad

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REVIEW ON PROGRAMS

- Fundamental Collaboration -- Programs for Foreign Students
 - Degree programs
For all degrees
 - Non-degree programs
For exchange students, language students, etc
 - Scholarship for Foreign Students
 - Chinese Government Scholarship
 - Beijing Municipal Government Scholarship
 - Tsinghua University Scholarship

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REVIEW ON PROGRAMS

- Fundamental Collaboration -- Distinguished Foreign Expert Programs
 - World-class scholars (such as Nobel Laureates, famous scholars) invited to deliver courses
 - Chief professors assigned for the key disciplines in departments
 - Distinguished research professors invited for the state key labs
 - Scholars employed for foreign language courses

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REVIEW ON PROGRAMS

- **Fundamental Collaboration -- Joint Research Programs**
 - **Inter-disciplinary projects with multi-national enterprises**
 - **Joint R&D institutes**
 - University + Enterprises + University
e.g. Tsinghua + Samsung + KAIST
 - University + University + Governors
e.g. EU Framework
 - University + University
e.g. Tsinghua + Harvard

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REVIEW ON PROGRAMS

- **Cooperation with Industries**
 - **Tsinghua University-Industry Cooperation Committee**
Founded in 1995 with 180 membership (147 domestic and 33 foreign enterprises)

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Overview for Collaboration

- **WHY** is international collaboration the way to future for universities
 - **Education globality**
More and more oversea students
 - **Research globality**
Open to the world, including
 - **Faculty globality**
On the global platform

} Education exchange globality!

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Overview for Collaboration

- **WHAT** to do for international collaboration
 - **STANDARD**
Adopted to approach the global understanding
 - **Education PLATFORM**
Open to the world, including
 - Tsinghua students: Studying experience abroad
 - International students: Studying freely in Tsinghua
 - **Research PLATFORM**
On the global platform
 - **Faculty PLATFORM**
Assessed and recruited based on the international standard

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Overview for Collaboration

- **WHEN** to implement
 - **Currently**, based on the fundamental cooperation
 - **Shortly**, exploring all opportunity to setup
 - Students exchange programs, furthermore
 - Joint research institutes, paying more attention to
 - Faculty recruitment, globally
 - **Chronically**, approach to the international standard for better mutual understanding

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Conclusion

- Enhance cooperation with strategic partner and universities in AEARU both in education and scientific research and development
- Carry out trans-disciplinary, cutting-edge, and multi-level cooperation with universities in AEARU and industries



Thank you!

Prof. Yi ZHANG
Director
Office of International Cooperation and Exchange
Tsinghua University, Beijing
zhyi@tsinghua.edu.cn

