



浙江大學醫學院
ZHEJIANG UNIVERSITY SCHOOL OF MEDICINE

Conference of leading Australian and Chinese
Medical Research Universities

The Education and Research Opportunities with Zhejiang University School of Medicine

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Vice Dean for International Affairs
Zhejiang University School of Medicine

September 24, 2013

Contents

- Hangzhou City
- Zhejiang University
- Zhejiang University School of Medicine (ZUSM)



● ← Hangzhou

Zhejiang Province



钱塘江-之江-浙江

Qiantangjiang - Zhijiang - Zhejiang

Zhejiang Province:

1% of land (0.1M/9.6M Km²)

3.5% of population (48M/1350M)

7% of Production (3.5T/53T RMB)



钱塘潮 High tide of Qiantangjiang

Hangzhou City

222 BC, Qiantang County

589, named as Hangzhou

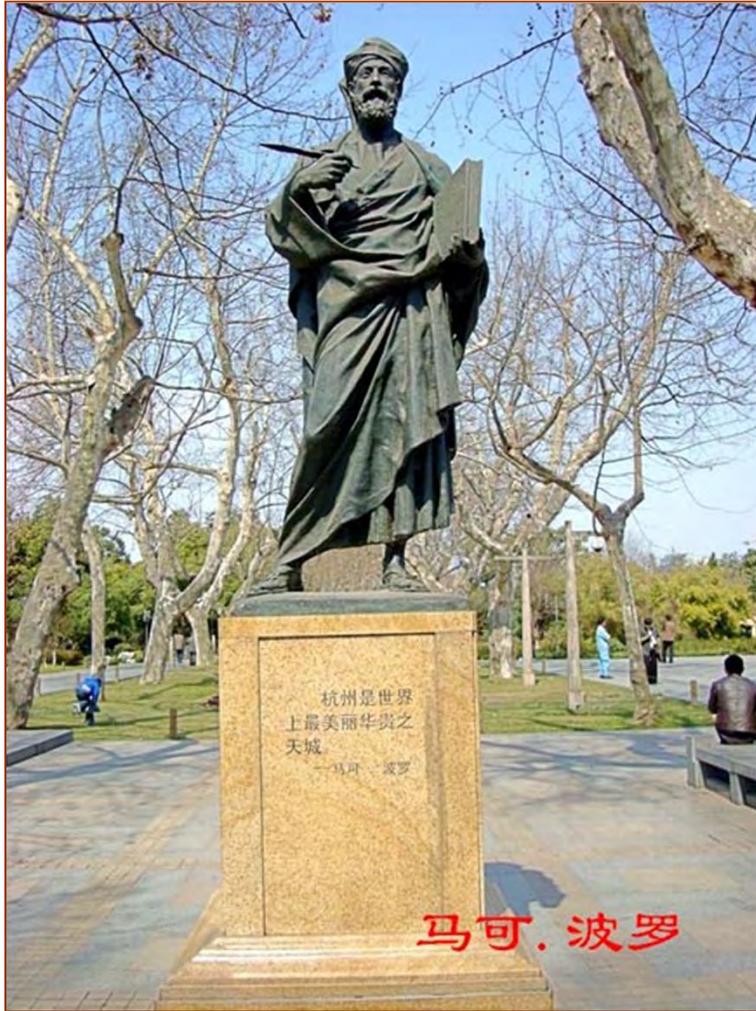
923, Capital of Wuyue Kingdom

1138, Capital of Southern Song Dynasty
(one of the 7 ancient capital cities in China)

杭州 杭-航 (voyage, sailing)



Hangzhou City



Hangzhou is the most beautiful and splendid city in the world.

-Marco Polo
(1254-1324)

Marco Polo is *an Italian merchant traveler from the Republic of Venice*

Hangzhou City



The Logo of Hangzhou City

Hangzhou City

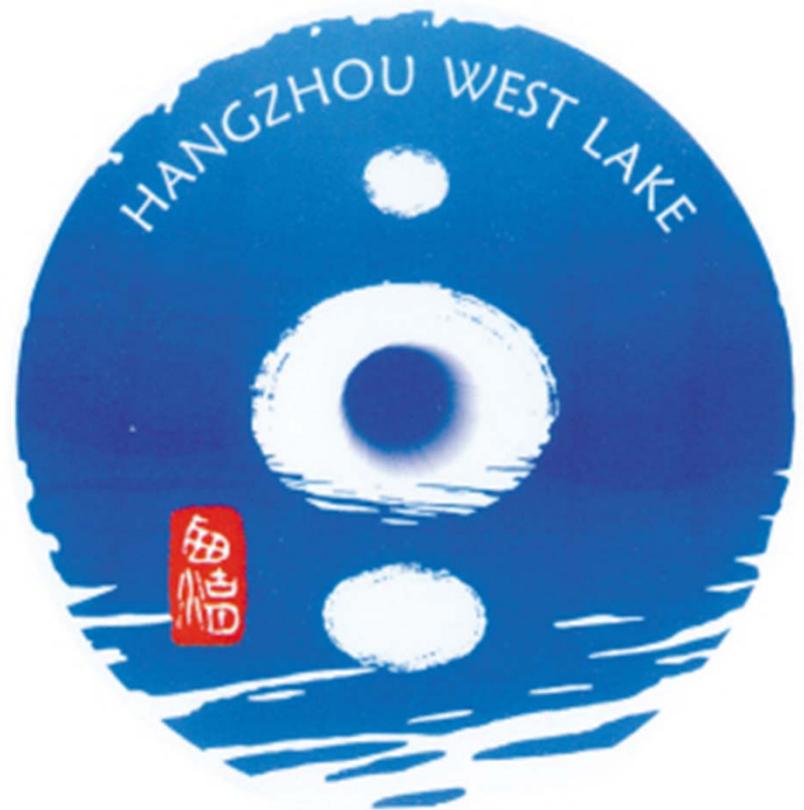
**Hangzhou West Lake
cultural landscape
inscribed on world
cultural heritage list
(June 24 2011)**



United Nations
Educational, Scientific and
Cultural Organization



World
Heritage
Convention

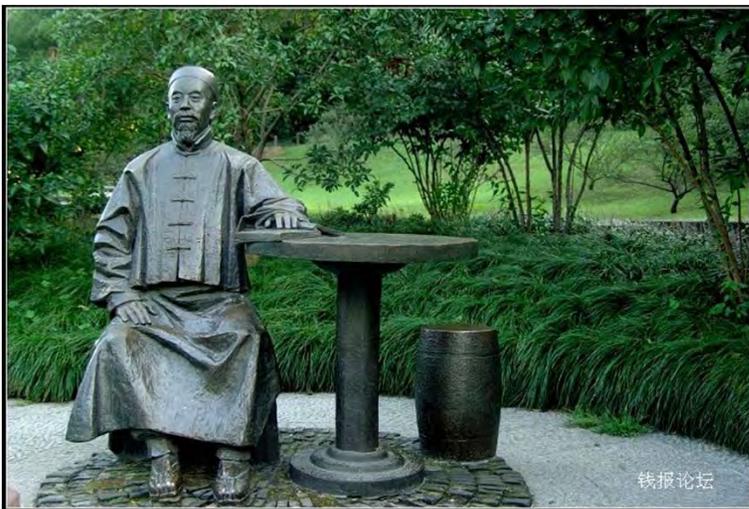






History of Zhejiang University

Originated from
**Qiusi Shuyuan (Truth
Academy) 求是书院**
founded by **LIN Qi**, the
Magistrate of Hangzhou
Prefecture in 1897



LIN Qi 林启
(1839-1900)

History of Zhejiang University

1928 formally named to
**National Zhejiang
University**

国立浙江大学



History of Zhejiang University

- 1998 Four universities in Hangzhou were merged to form the new **Zhejiang University**:
- Zhejiang University
- Hangzhou University
- Zhejiang Agriculture University
- **Zhejiang Medical University**



Facts of Zhejiang University

- 12 academic disciplines:
philosophy, economics, law, education,
literature, history, art, science, engineering,
agriculture, medicine, management
- 7 faculties and 37 colleges/schools
- *44,874* full-time students
 - *13,704* graduate students
 - *8,241* Ph.D candidates
 - *22,929* undergraduates
- *3,156* international students from 128 countries

Campus of Zhejiang University

Zijingang 紫金港

(Zijin Harbour)

Yuquan 玉泉

(Jade spring)

Xixi 西溪

(West brook)

Huajiachi 华家池

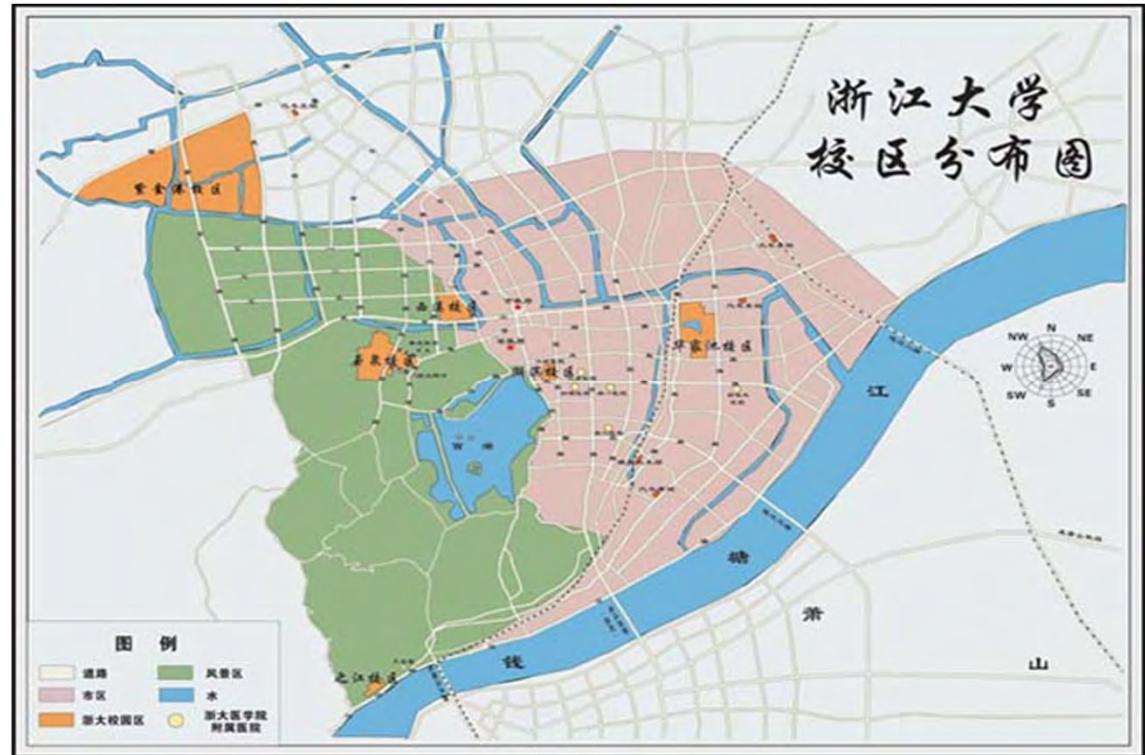
(Huajia pool)

Zhijiang 之江

(Zhijiang River)

Hubin 湖滨

(Lakeside)

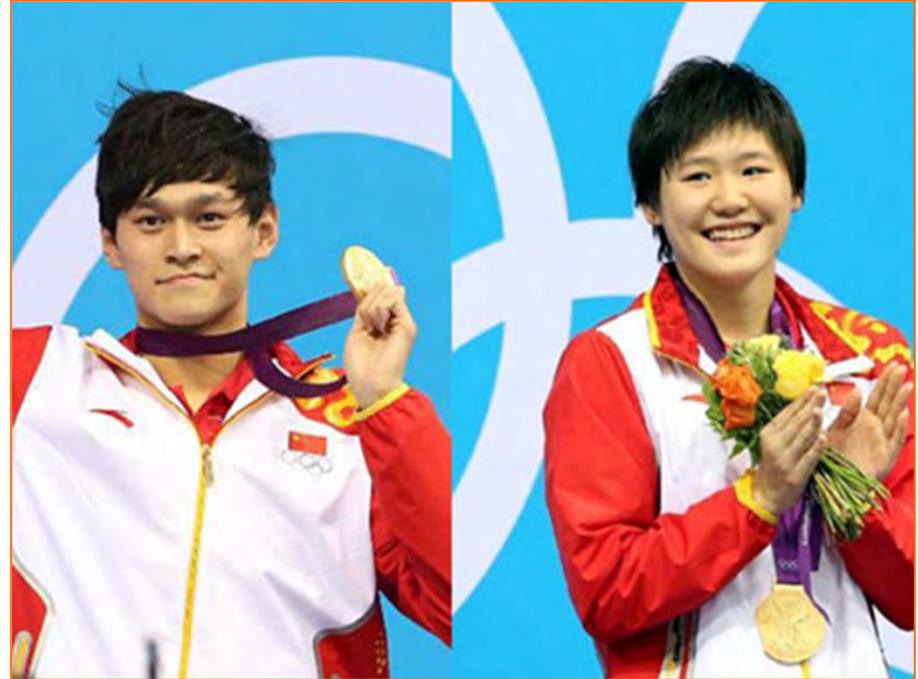


Zhejiang University



Zijingang Campus Birds Eye View

Faces of Zhejiang University



2012 London Olympic Champions **SUN Yang** and **YE Shiwen** are **Hangzhou natives**. Sun Yang is also an undergraduate student of Zhejiang University.

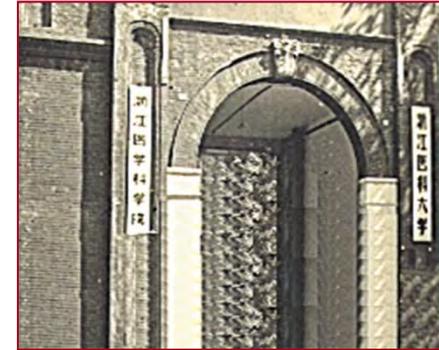
History of Medical School



Chekiang College of Medicine in 1912



In 1952 merged with Chekiang University Medical College (1946) to form Zhejiang Medical College, In 1960 renamed to Zhejiang Medical University



Zhejiang University School of Medicine in 1999



To moved to Zijingang Campus in 2006

History of Medical School



The Centenary Celebration
of Medical School
(1912-2012)

百年浙医庆典



Dean of Medical School



DUAN Shumin, PhD & MD
A Neuroscientist

Member, Chinese Academy of Sciences

Selected Publication (Corresponding Authors)

Dou *et al.*, *Cell Res*, 2011

Song *et al.*, *Cell*, 2009

Tong *et al.*, *J Cell Biol*, 2009

Li H, *et al.*, *Mol Biol Cell*, 2008

Zhang *et al.*, *Nature Cell Biol*, 2007

Ge *et al.*, *Science*, 2006

Shen *et al.*, *Neuron*, 2006

Li *et al.*, *Neuron*, 2004

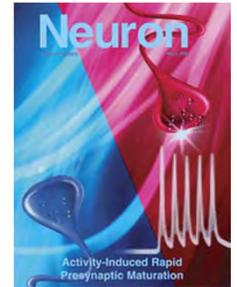
Zhang *et al.*, *Neuron*, 2003

Yang *et al.*, *PNAS*, 2003

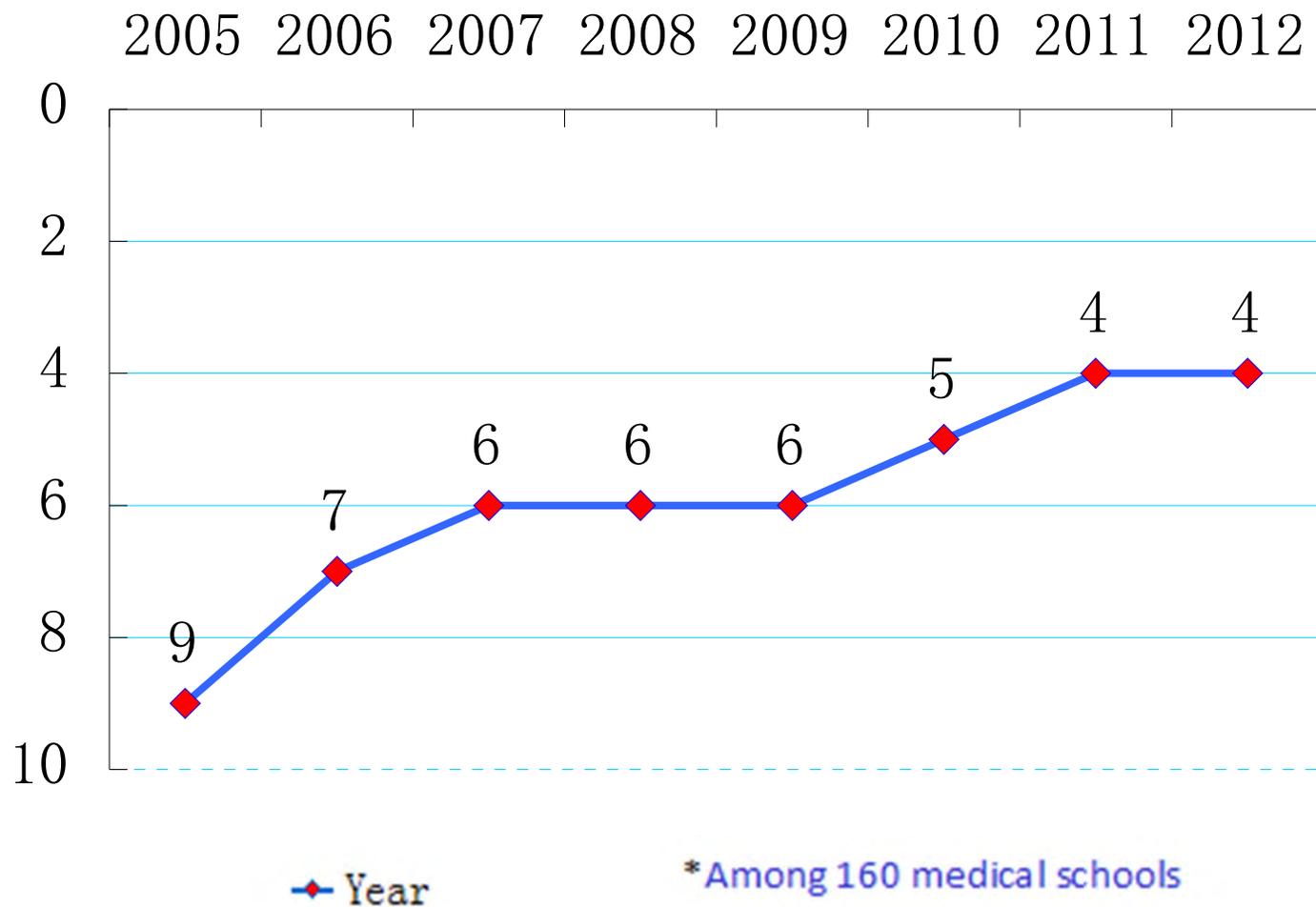
Wang *et al.*, *Neuron*, 2003

Yuan *et al.*, *Nature Cell Biol*, 2003

Xiang *et al.*, *Nature Neuroscience*, 2002

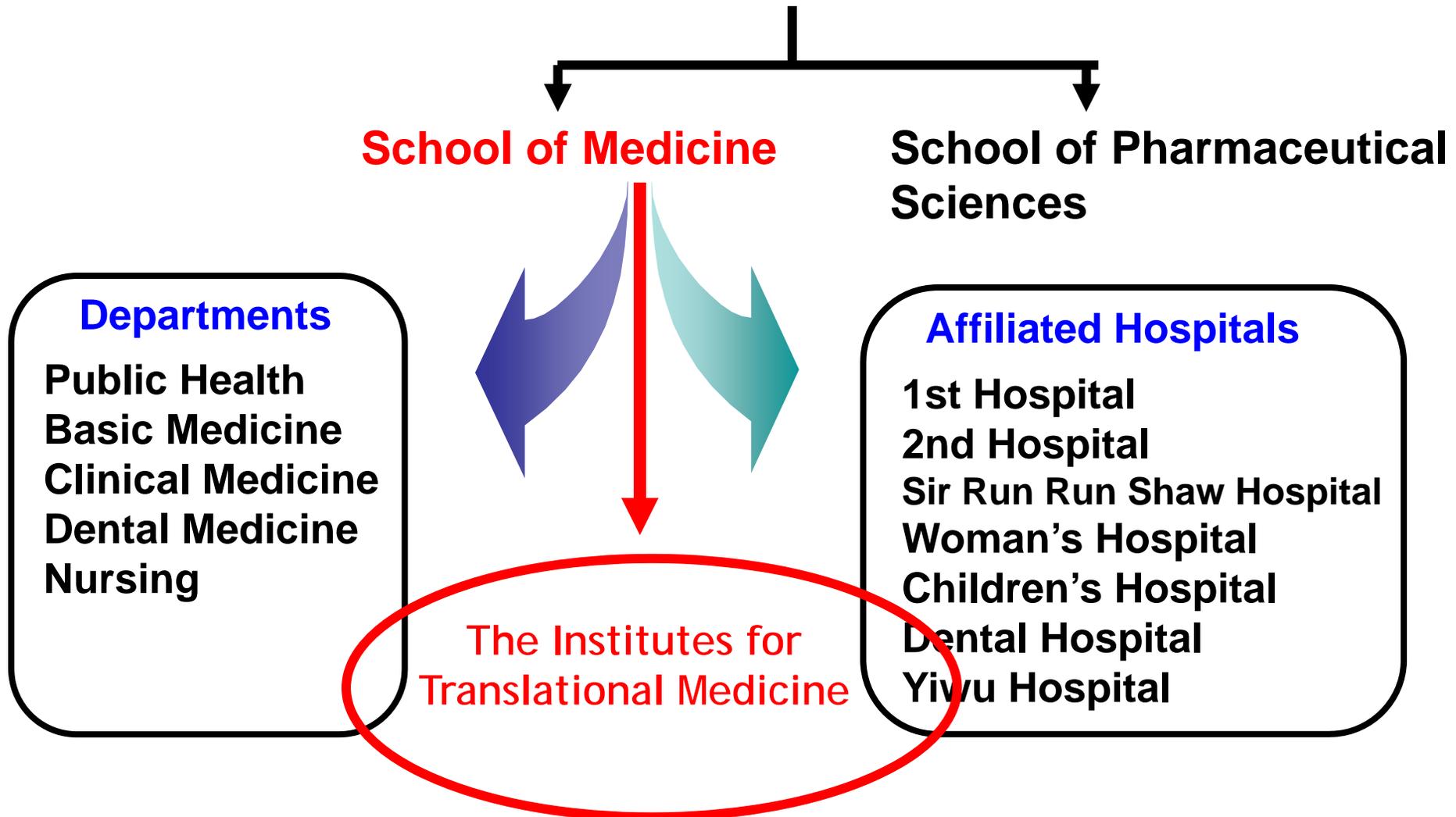


National Ranking of Medical School



Organization of Medical School

Faculty of Medicine

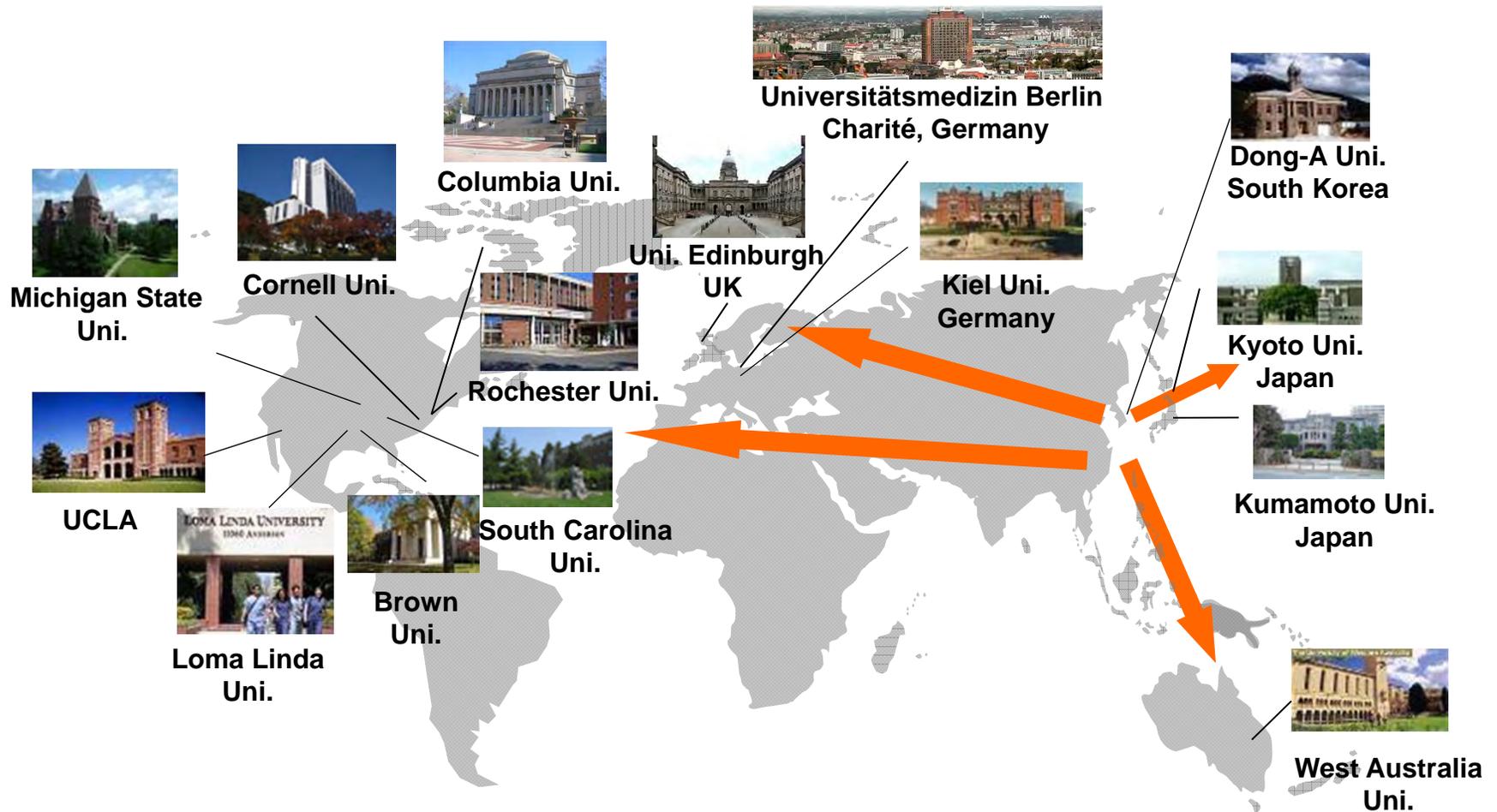


Staffs of Medical School

<u>All staff</u>	<u>12,519</u>
<u>University-based payroll</u>	<u>602</u>
▪ Full Professors	140
▪ Associate Professors	96
<u>Hospital-based payroll</u>	<u>11,917</u>

*Data updated September, 2013

International Cooperation of Medical School



Key partners: **UCLA, Loma Linda University, University of Edinburgh**





Education of Medical School

Students (2012)

- Undergraduate Students 1425
- Graduate Students 2260
- Overseas Students 517

Enrolled in 2013

- Undergraduate 487
- Graduates 520
- Overseas Students 96



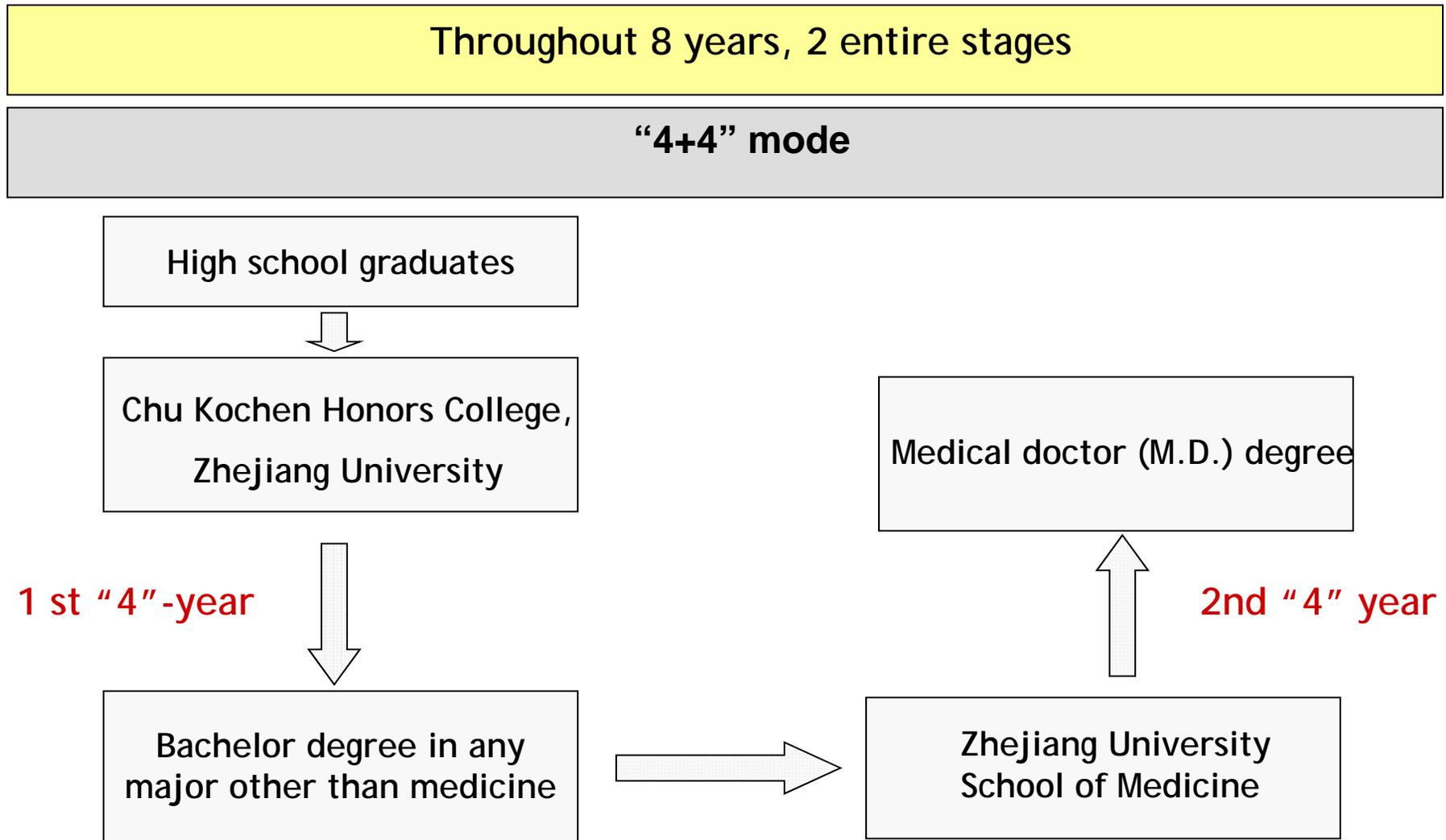
Education of Medical School

Programs for Medical Education

- **MD (8') , 2005**
- **Bachelor of Biomedical Sciences (with Master of Edinburg University), 2012**
- **MBBS for International Students (5 1/2'), 2006**
- **Bachelor of Medicine (5'), 2012**
- **MD-PhD, 2004**
- **Master of Medicine (7'), 1988-2011**
- **Master of Dental Medicine (7'), 2002**
- **Master of Public Health (MPH) (7'), 2006**
- **Master of Science in biomedical sciences(7'), 2006**
- **Master Program for Nursing (3'), 1997**
-

8-year M.D. program - 1

An entire new training mode: "4+4"



8-year M.D. program - 2

Unique in China

ZJU School of Medicine

2 entire stages

"4 +4"

Undergraduate courses
Medical courses

1 medical degree+1 other degree

Non-medical Bachelor
&
Medical doctor (M.D.)

Other medical schools

3 stages

Pre-medical courses
Medical courses
Post-medical courses

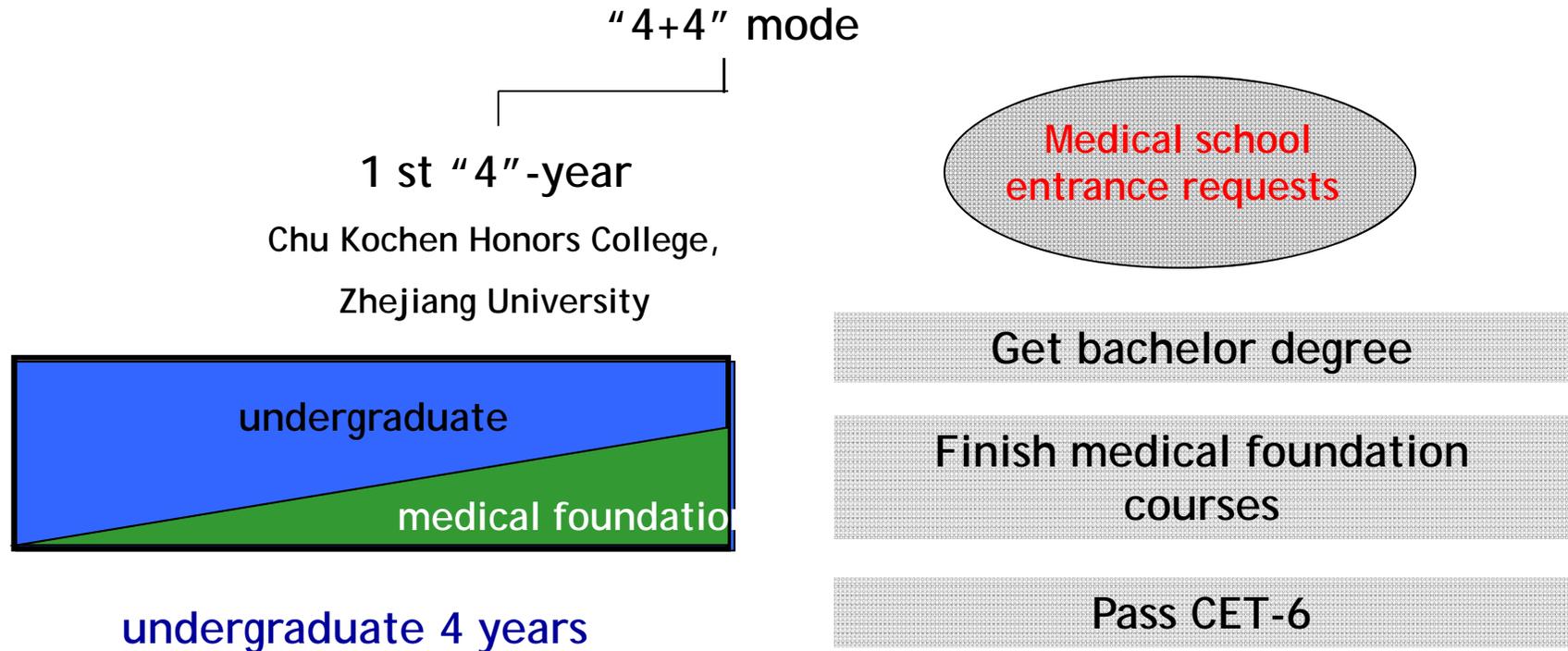
2 medical degrees

Bachelor of medicine
&
Medical doctor (M.D.)

An entire new training mode: "4+4"

8-year M.D. program - 3

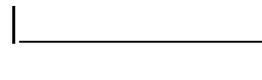
New curriculum-1st "4" year



8-year M.D. program - 4

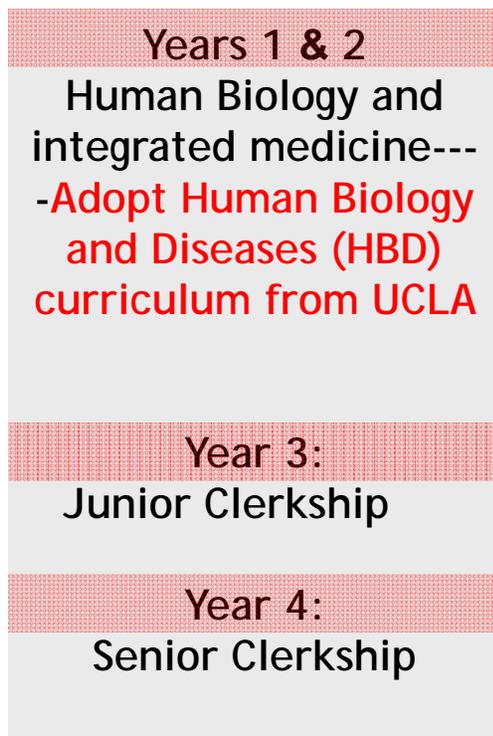
New curriculum-2nd "4" year

"4+4" mode



2nd "4" year

Medical School,
Zhejiang University



Years 1& 2
for preclinical phase

Years 3& 4
for clinical phase

8-year M.D. program - 5

New curriculum-2nd "4" year

Years 1 & 2: Human Biology and integrated medicine

Principle

Integrate basic, clinical and social sciences

Promote active learning for deep understanding

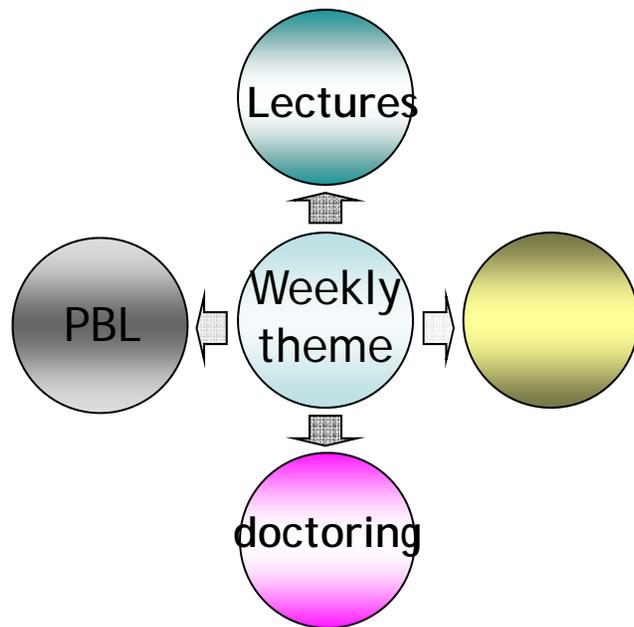
Disease based learning

Promote student research

8-year M.D. program - 6

Years 1 & 2: Human Biology and integrated medicine

A typical week



Weekly theme & goals

PBL: 4 hours

Lectures: 13-16 academic hours (45 min/a.h.)

Lab: 8 a.h.

Doctoring: 4 a.h.

Weekly online formative assessment

8-year M.D. program - 7

Years 3 & 4: Junior & senior clerkship

Structures

Junior clerkship

60 weeks

In a ward medical team

Be on duty

Join in doctor consultation

Outpatient service(1/2day per dept)

Senior clerkship

34 weeks

Special clinical skills training

Clinical training at higher levels

Treat emergency and serious patients

Track the onset and course of the disease

New Biomedical Sciences program -1

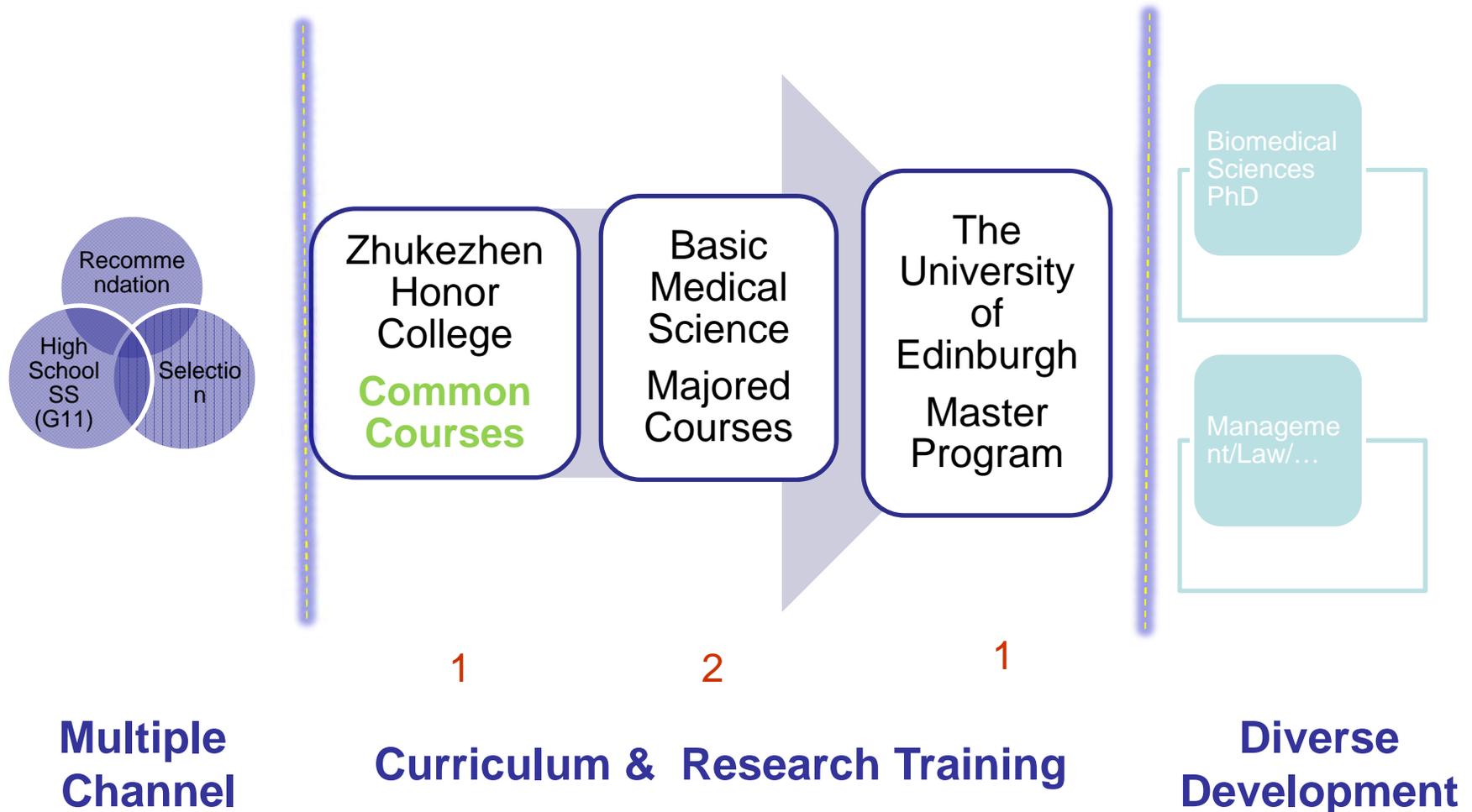
In 2012, **as a part of the pilot reform project**, the School of Basic Medical Sciences established the Program of Biomedical Sciences.

Core mission: to prepare the students to be leaders in the field of BMS in the 21st century.



New Biomedical Sciences program - 2

Design: 3 + 1 + X Degree Program



New Biomedical Sciences program -3

◆ Admission of the BMS Students

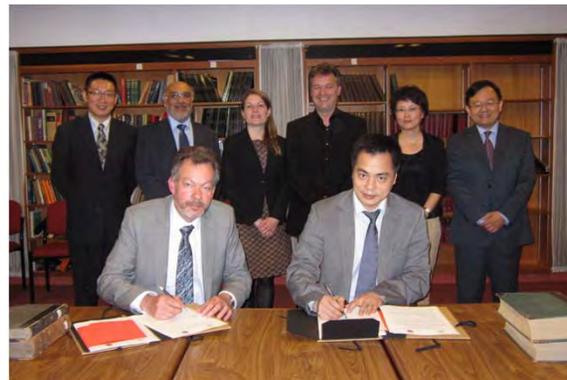
- Excellent high school students: **Recommended, Exam-free, Interview**
- **Selection** from excellent freshmen in ZJU

◆ Special curriculum and training model

- First year in **Chu KoChen Honor College**, under a special ZJU program for training innovative scientists.

◆ Developing partnership with leading universities around the world

- In 2012, the “3+1” collaborative agreement with **U. Edinburgh**:
 - **Bachelor Degree** at Zhejiang University (**3 years**)
 - **Master Degree** at the University of Edinburgh (**1 year**).

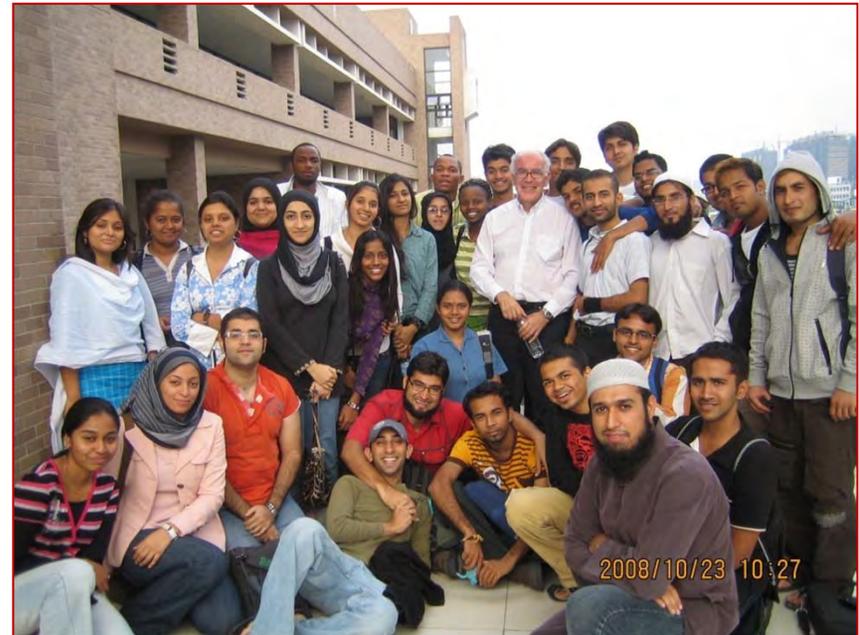


MBBS program for International Students - 1

Started in 2006

English Medium, 5.5 years

Batch	Student	Countries
2006	43	8
2007	100	19
2008	73	16
2009	78	21
20010	82	18
2011	86	10
2012	93	12
2013	96	20



MBBS program for International Students - 2



Research of Medical School

Institutes: 28 in campus and hospitals

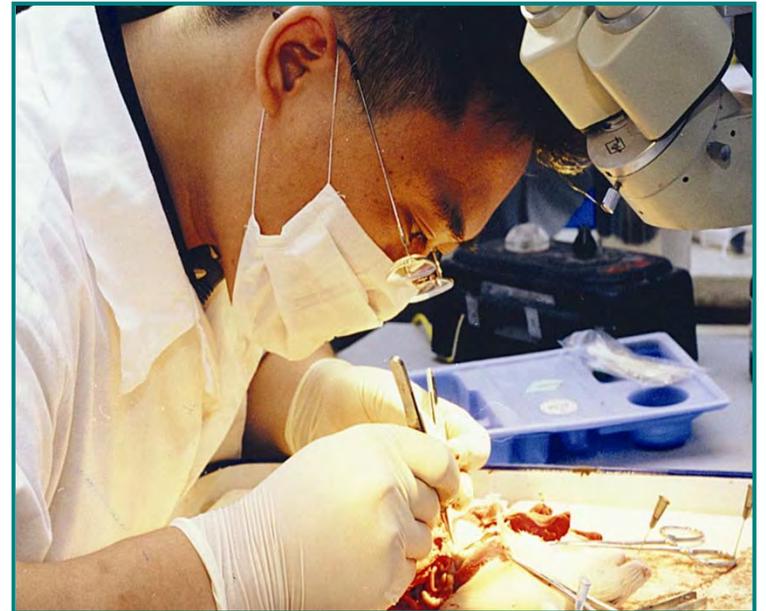
Key laboratories: 23 (1 at the national level)

Research space in main campus:

100 PI units with 500,000 feet²

Principal investigators (PI): 60

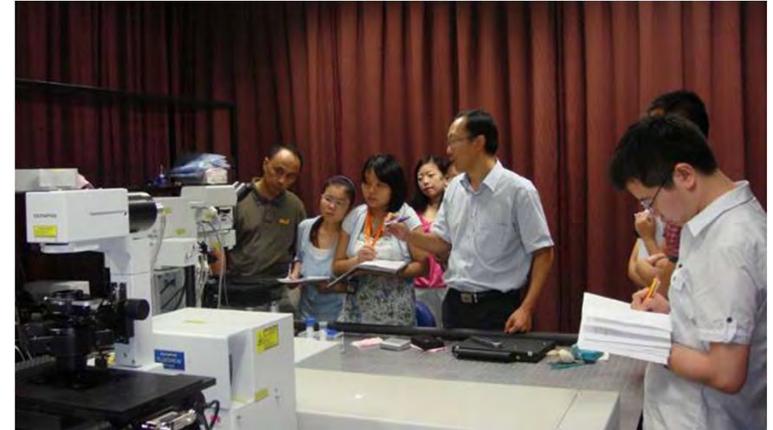
Animal center: 86,000 feet²



Research of Medical School

Strengths in Research

- Infectious Disease
- Organ Transplantation
- Surgical Technology
- Oncology
- Pediatrics
- Reproductive Medicine
- Hematology
- Emergency Medicine
- Environmental Health
- Pathology
- Immunology
- Neuroscience
- Cell Biology

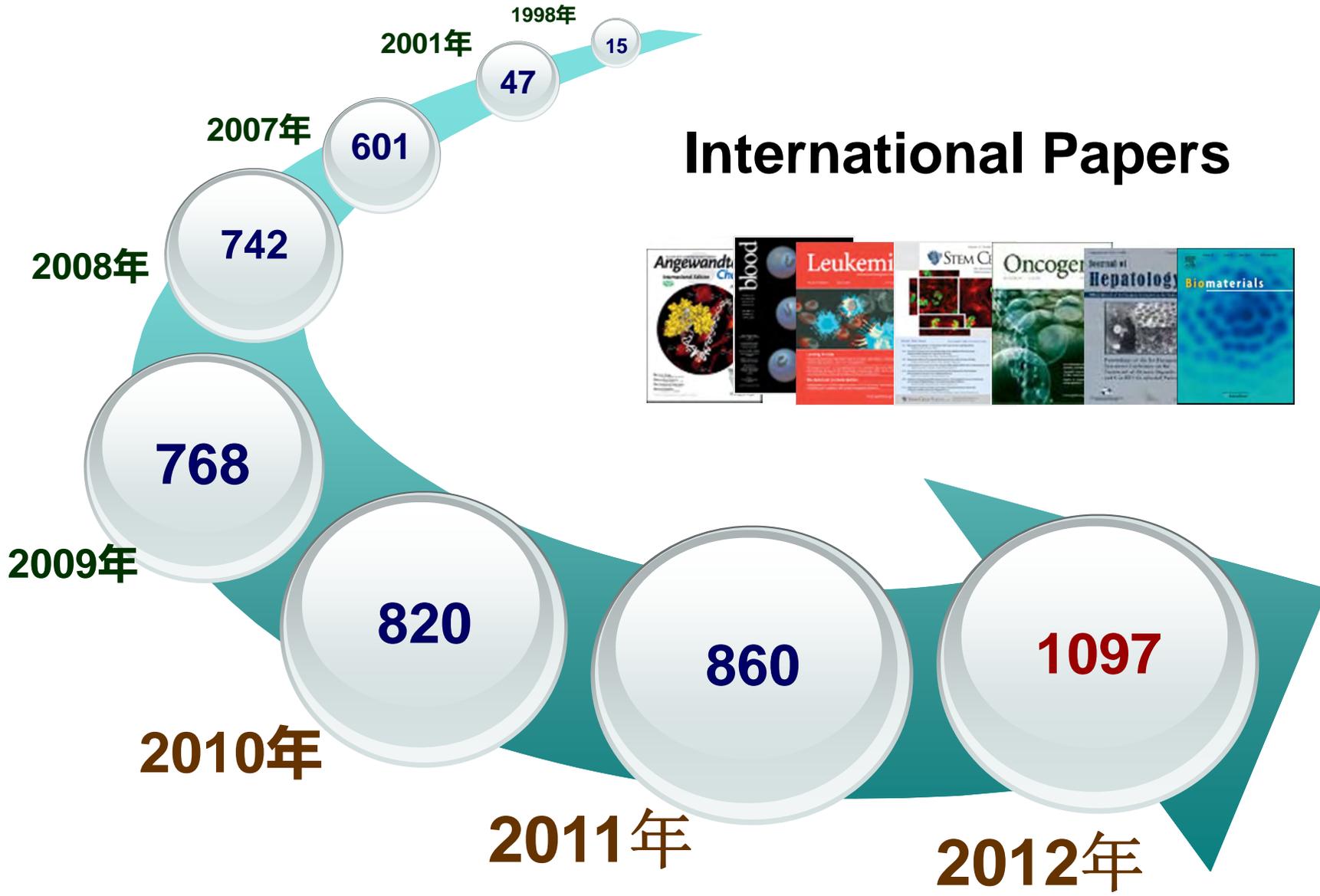


Research of Medical School

Year	NSFC grants	Funds (millions RMB)	International Papers (SCI)
1998	2	4.99	15
2003	29	47.5	130
2004	49	62.7	162
2005	41	72.2	198
2006	69	87.3	257
2007	75	123	428
2008	93	142	550
2009	127	241	728
2010	170	476	820
2011	230	345.90	860
2012	261	490.55	1097

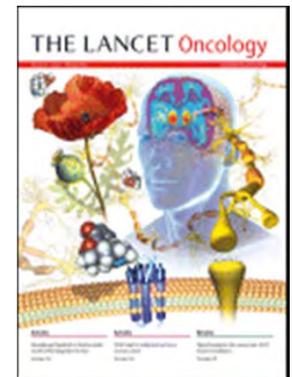
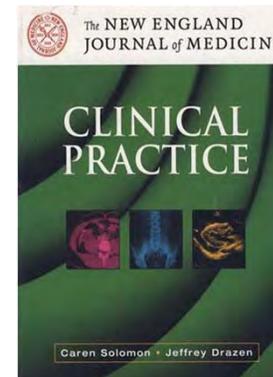
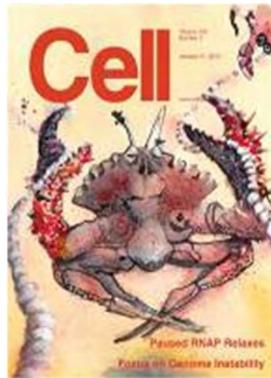
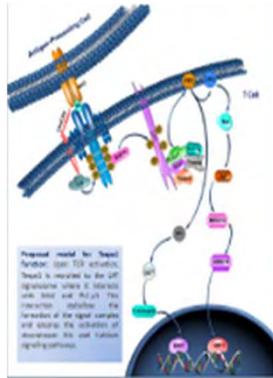
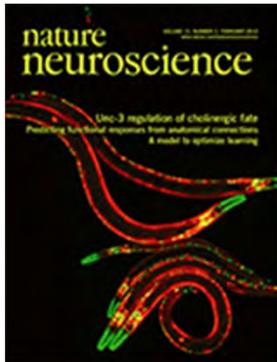
Research of Medical School

International Papers



Research of Medical School

Original Papers with high impact



2012

2013

Research of Medical School

The Institutes for Translational Medicine

- nervous and mental diseases
- gastrointestinal cancer
- cardiovascular diseases
- reproductive and genetic medicine
- ophthalmology
- hematology and stem cell

Priority fields in both basic and clinical research

Affiliated Hospitals

Hospital Beds

Affiliated Hospital	Beds (*)
The 1st Hospital	2500 (2945)
The 2nd Hospital	2000 (3200)
Sir Run Run Shaw Hospital	1200 (2400)
Woman's Hospital	1120 (1120)
Children's Hospital	1000 (2250)
Dental Hospital	50 (50)
Yiwu Hospital (under construction)	0 (800)
Total	7870 (12765)

* The predicted bed number in 2015

Affiliated Hospitals

Year	Income (billion RMB)	Inpatients (10⁴)	Outpatients (million)
1998	0.945	5.34	2.9000
2006	3.651	17.52	6.4030
2007	4.183	19.51	7.2153
2008	5.191	21.79	8.0775
2009	6.233	23.69	7.9791
2010	6.967	27.43	8.6327
2011	7.73	30.9	10.146
2012	8.845	36	11.1146

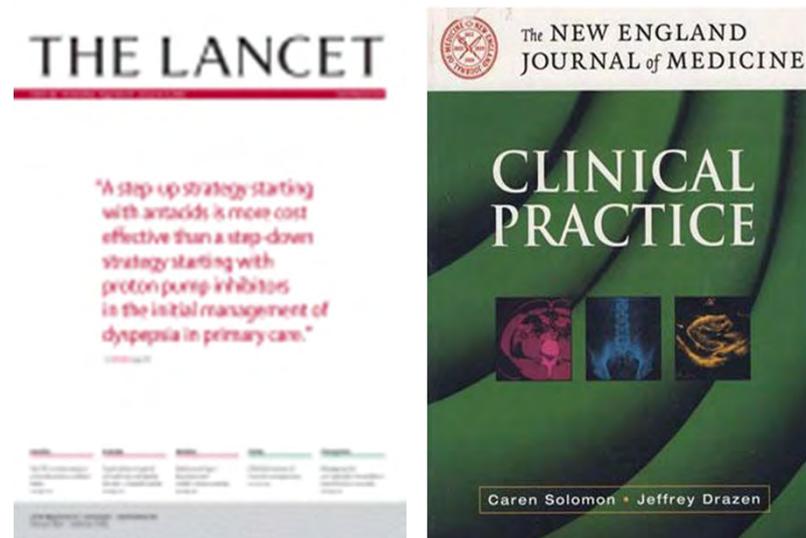
The First Affiliated Hospital

- **Founded in 1947**
- **> 3000 staff members**
- **83,017/year inpatients**
2,599,300 / year
outpatients
- **JCI (Joint Commission international) accredited,**
Feb 2013



The First Affiliated Hospital

- **Featured Departments (1)**
 - **The Department of Infectious Diseases**



H7N9 Bird Flu

The First Affiliated Hospital

- **Featured Departments (2)**
 - **The Liver Transplantation Center**



Prof ZHENG Shusen and his team successfully completed 3 cases of live-donor liver transplantation in Jakarta, Indonesia

The First Affiliated Hospital

- **Featured Departments (3)**
 - **Kidney Disease Center**



The First Affiliated Hospital

- **Featured Departments (4)**
 - **Bone Marrow Transplantation Center**



The Second Affiliated Hospital



- **Founded in 1869**
- **2342 staff members**
- **68,453/year inpatient**
- **1,923,271/year outpatient**
- **JCI accredited Feb 2013**

The Second Affiliated Hospital

- **Featured Departments**
 - **PET Center**



The Second Affiliated Hospital

- **Featured Departments**
 - **The Emergency Center**



The Second Affiliated Hospital

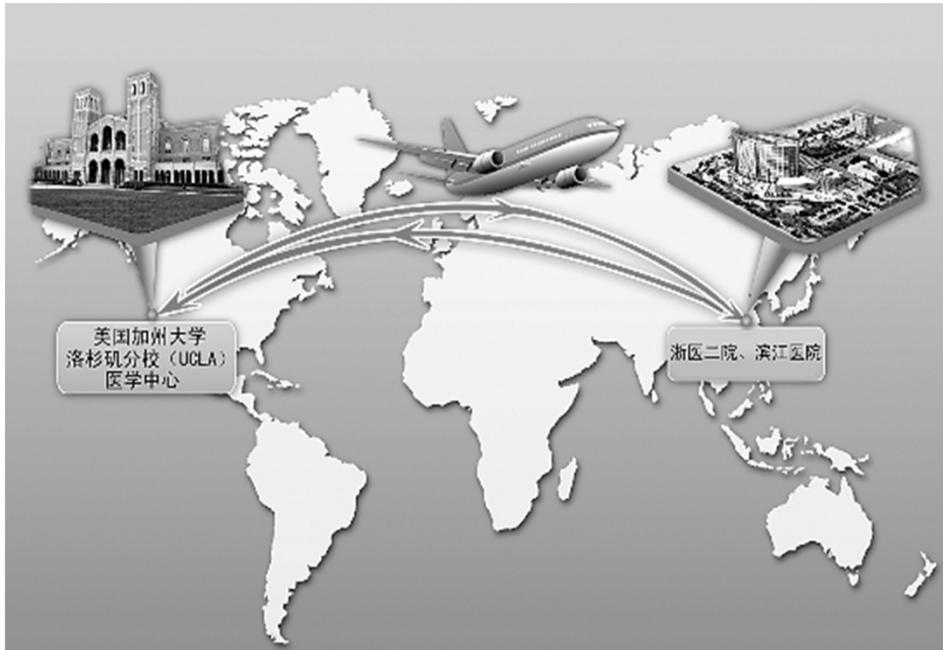
- **Featured Departments**
 - **The Cardiology Center**



**Prof Wang Jian'an in
Hybrid operation room**

The Second Affiliated Hospital

- **Featured Departments**
 - **ZJU-UCLA International Tele-medicine Center**



Aug 24 2011, Dr William Oppenheim from UCLS provides tele-consultation for a girl (Niuniu) who fell from 10th floor.

Sir Run Run Shaw Hospital

- **Third Affiliated Hospital**
- **Founded in 1994**
- **Established with Loma Linda University**
- **2,218 staff members**
- **49,508/year inpatient**
- **997,966/year outpatient**
- **Accredited JCI in 2006**



Sir Run Run Shaw Hospital

- **Laparoscopic hepatectomy**



Dr Cai Xiujun and his team performed more cases of laparoscopic hepatectomy in single institute than others in the world (3D laparoscopy)

Sir Run Run Shaw Hospital

- **Heart Center- Hybrid Operation room**



Hybrid Operation room

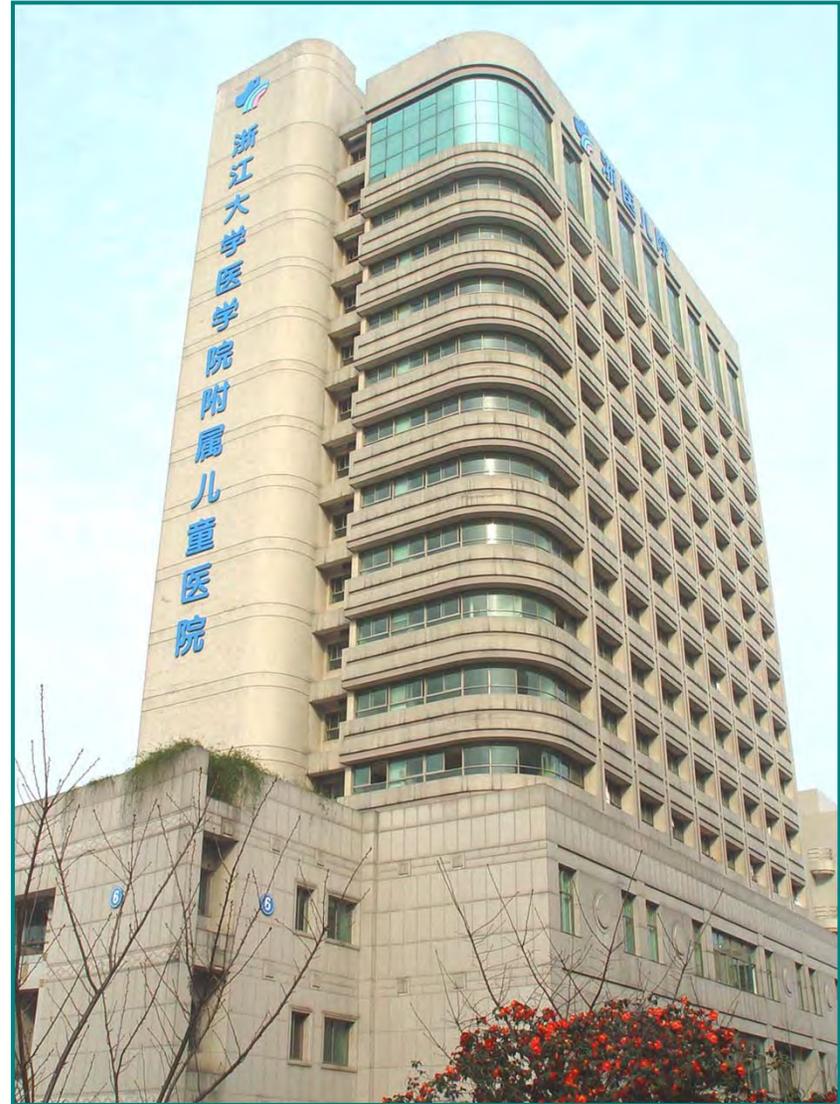
Woman's Hospital



- **Founded in 1951**
- **934 staff members**
- **38,964/year inpatients**
- **1,092,171/year outpatients**
- **One of biggest women's hospital in China**

Children's Hospital

- **Founded in 1951**
- **1421 staff members**
- **33,857/year inpatients**
- **1,124,000/year outpatients**
- **One of biggest children's hospital in China**



Dental Hospital



- **Founded in 1991**
- **238 staff members**
- **500/year inpatients**
- **200,000/year outpatients**

New Hospitals: Yiwu Hospital

- Founded in Dec. 2009
- To open at the end of 2013
- 12.6 hectares
- 800 beds (stage 1)



New Hospitals: Medical Center

- To open at the end of 2016
- 20 hectares
- Clinical Unit: 1200 beds
- Research Unit: 100,000 m²



New Campus of Affiliated Hospitals



**Binjiang Campus
of Children's Hospital
1250 beds**



**Xiasha campus
of 2nd Affiliated Hospital
1200 beds**



**Xiasha campus
of 3rd Affiliated Hospital
1200 beds**

Challenges for Medical Education & Research

1. How to Teach students in Future?

MOOC (massive online open courses)

Reorganization of medical education systems

Why do we still need teachers

2. New Paradigm of Medical Research in “Big Data” Era?

Systems medicine (Med-X)

Hypothesis-driven research

Data mining or meta-analysis

3. How to Prepare for the Globalization of Medicine?

How to make international collaboration efficiently

Authorship in big project with international collaboration

Medical students in international collaboration

Thanks!

