



北京大學
PEKING UNIVERSITY

Peking University

A Research and Educational Perspective





北京大學
PEKING UNIVERSITY



OUTLINE

- **General Information**
- **Research and Development Strategies**
- **International Collaboration**

History

Founded as
“Imperial University
of Peking”

1898

1912

Disciplinary
Relocation

1952

Incorporated with Beijing
Medical University

1998

2000

Interdisciplinary
Research

2005

2009

“Peking University”

Centennial Anniversary

- A goal to become world-class university

New College of
Engineering



Fast Facts

Student: 40,017 (2,550*)

- Undergraduate: 15,861 (1,629*)
- Graduate student:
 - Master student: 15,168 (614*)
 - Ph.D. student: 8,988 (307*)

Faculty & Staff: 8,676

Collection of Books: 9.8 Million

***International Students**





The Academic Structure

Faculty of Humanities

- Arts
- History
- Philosophy
- Foreign Languages
- Chinese Language & Literature
- Archaeology & Museology

Faculty of Social Sciences

- Law
- Economics
- Sociology
- Management
- Government
- Education
- International Studies
-

Faculty of Sciences

- Mathematical Sciences
- Physics
- Chemistry & Molecular Engineering
- Life Sciences
- Urban & Environmental Sciences
-

Faculty of IT & Engineering

- Electronics Engineering & Computer Science
- Engineering
- Software & Microelectronics
- Environmental Sciences & Engineering
-

Health Science Center

- Basic Medical Sciences
- Pharmaceutical Sciences
- Public Health
- Nursing
- 8 Affiliated Hospitals
- 12 Teaching Hospitals

Output and Quality

19 of 22 fields ranked as 1% by Essential Science Indicators:

Economics & Business

Chemistry

Mathematics

Physics

Biology & Biochemistry

Engineering

Materials Science

Plant & Animal Science

Geosciences

Environmental & Ecology

Clinical Medicine

Pharmacy & Toxicology

Computer Science

Neuroscience & Behavior

General Social Sciences

Molecular Biology & Genetics

Psychiatry/Psychology

Agricultural Sciences

Microbiology

Education System

Bachelor's Degree: 4 years

- **110** Undergraduate Programs

Master's Degree: 2-3 years

- **278** Master Programs

Ph.D. Degree: 3-5 years

- **229** Ph.D. Programs

MD Program: 8 years

- Two years general education on main campus

Postdoctoral Research Centers: 36



Mission

Recruitment of best scientists

- Improving the quality of the faculty body

Cutting-edge research

- Focusing on advanced cross-disciplines

Modern university system

- Reforming evaluation system
- Creating innovation environment

Competitive education and research

- Breakthroughs in key areas
- High quality education

Social Service

Destination

Cultivating talents with

Vision

Leadership

Innovation

“985” Program

Chinese government encourages the excellent universities supported by this program to develop the intensive interdisciplinary researches according to the disciplinary constructions and university development strategies.

National Mid-term and Long-term Outline of Education Reform and Development (2010-2020)

- Sharing resources of research institutions and enterprises to promote applied research
- Focus on educating and fostering talents

State Key Laboratory (*\$US 1.6million per year per lab*)

01. Artificial Microstructures and Mesoscopic Physics
02. Turbulence & Complex System
03. Nuclear Physics and Technology
04. Protein and Plant Gene Research
05. Natural and Biomimetic Drugs
06. Biomembrane and Membrane Biotechnology
07. Environmental Simulation and Pollution Control
08. Advanced Optical Communication Systems & Networks
09. Rare Earth Materials Chemistry and Applications
10. Structural Chemistry of Unstable and Stable Species

National Engineering Research Center/Laboratory

01. New Technology of E-Publishing
02. Software Engineering
03. Video Technology
04. Digital and Material Technology of Stomatology

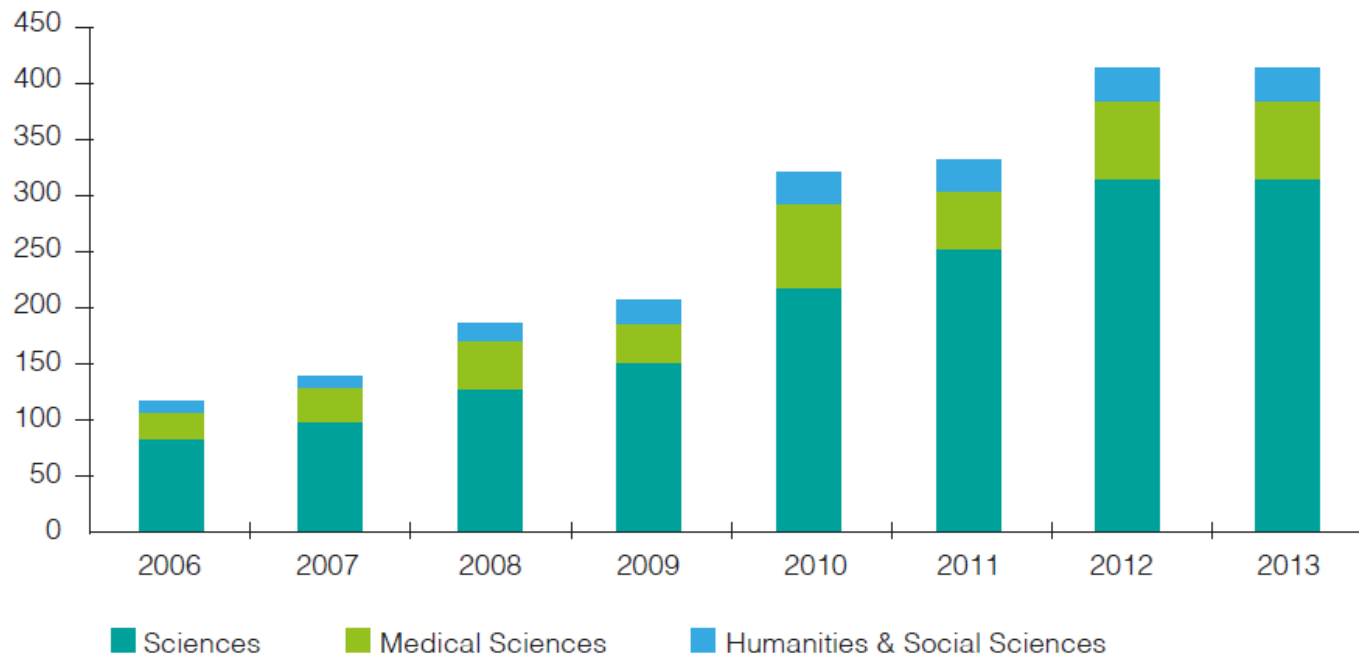
14 Research Institutes and Centers

Newly Established Tenure-Track System

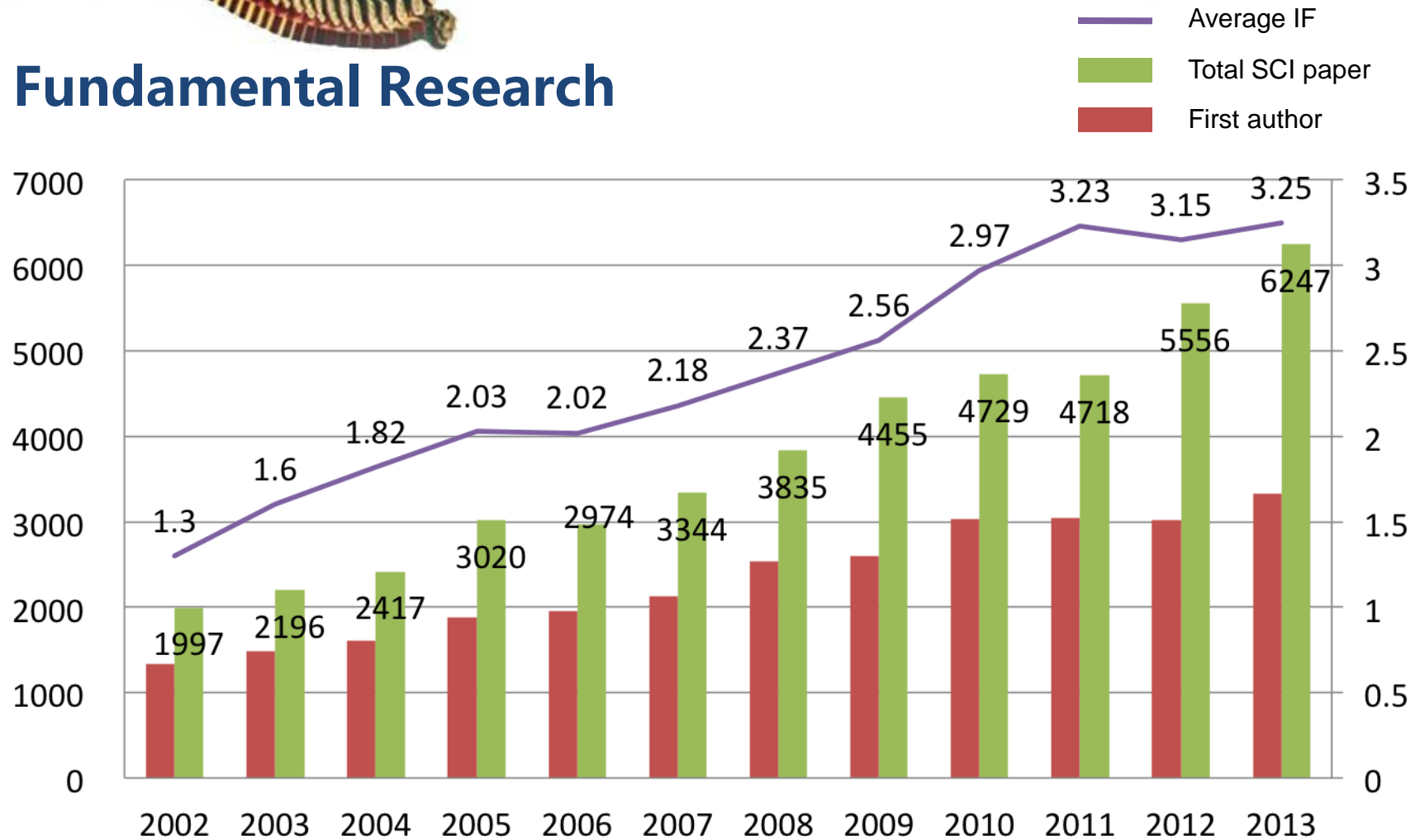
01. Beijing International Center for Mathematical Research
02. The Kavli Institute for Astronomy and Astrophysics
03. International Center for Quantum Materials
04. Center for Statistical Science
05. Center for Energy-Efficient Computing and Applications
06. Institute of Social Science Survey
07. Biodynamic Optical Imaging Center
08. Quantitative Biology Center
09. Institute of Molecular Medicine
10. Institute of Systems Biomedicine
11. Center for Pharmaceutical Information
12. Center for Synthetic and Functional Biomolecules
13. Institute of Clinical Medicine
14. IDG/McGovern Institute for Brain Research at PKU

Research Fund

In 2013, the revenue of PKU is about **\$US 1.3 billion** and received about **\$US 415 million** Competitive Research Funding. MOST(Ministry of Science & Technology, \$US 78 million), NSFC(National Science Foundation China, \$US 82 million) and Industrial Cooperation (\$US 47 million) are important sources of these funds for scientific research at PKU. International cooperation is one of funding resources.



Fundamental Research



SCI papers in 2002-2013

The Priority Fields of “985” (III)

- Biomedicine 生物医学
- Clinical medicine 临床医学
- Novel functional material 新型功能材料
- Energy, resources and environmental studies 能源、资源与环境
- Brain and cognitive sciences 脑与认知科学
- Chinese social development 中国社会发展
- Chinese philosophy and traditional cultures 中国思想文化

Biomedical Research at PKU

Biomedical-related Faculties

- Faculty of Sciences
 - School of Life Sciences
 - School of Chemistry
 - Department of Psychology
- Health Science Center
 - School of Basic Medical Sciences
 - School of Pharmaceutical Sciences
 - School of Public Health
 - 8 Affiliated Hospitals
 - 12 Teaching Hospitals

Research Institutes/Centers

- Institute for Molecular Medicine
- Center for System Biology
- Institute for Clinic Medical Research
- Center for Bio-optical Image
- Center for Functional Image
- Center for Chemical Genomics
- Center for Neurosciences
- Center for Stem Cell Research
- National Protein Genomic Center
- National Life Science Center

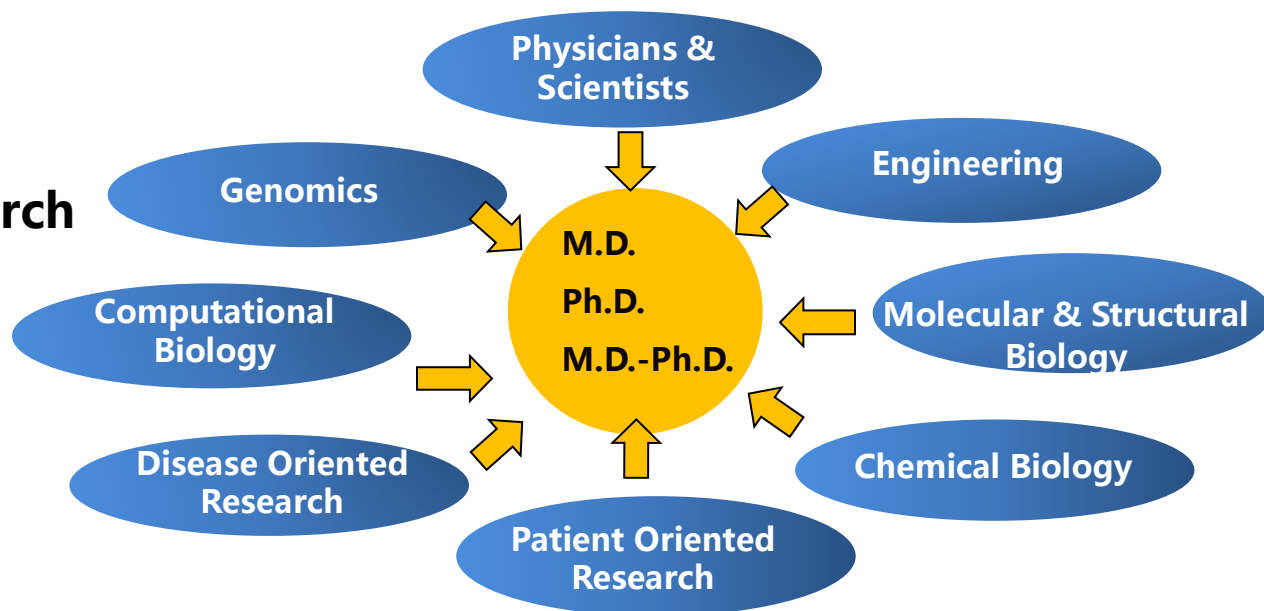
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Institute of Molecular Medicine

Mission

- To vitalize Chinese metabolic and cardiovascular science and education program
- To promote translational medicine catalyzing the process of transforming our scientific knowledge into benefits for people
- To train next generation leaders of biomedical research and public health

Multidisciplinary Interface for Translational Research

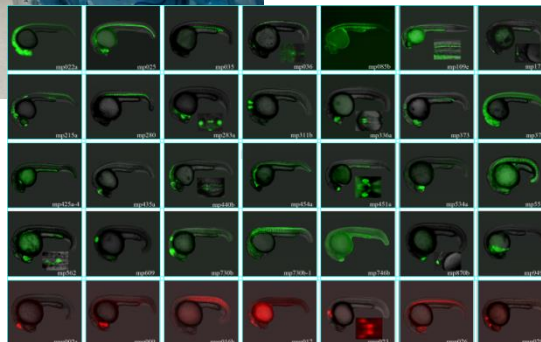


Life Sciences

- Center for Life Sciences
- Plant Sciences and Biotechnology in Agriculture
- Cell and Developmental Biology
- Immunology



**Development
Biology
(Zebra fish)**



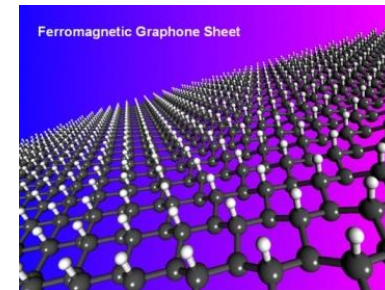
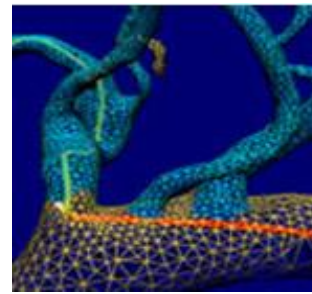
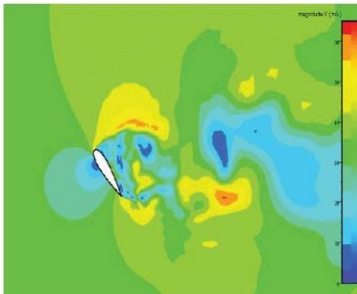
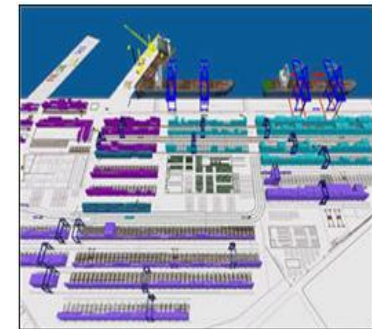
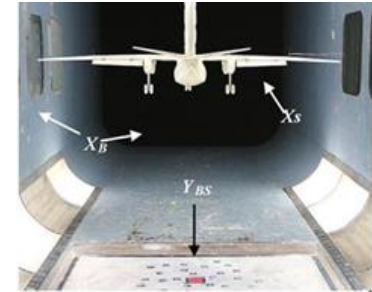
Conservation Biology

- Conservation biology of giant pandas, tigers and white-head leaf monkeys
- Bio-safety assay of transgenic plants

College of Engineering

Faculty: 110 Staff: 30

- Mechanics and Engineering Sciences
- Energy and Resources Engineering
- Biomedical Engineering
- Materials Science and Engineering
- Industrial Engineering and Management
- Aeronautics and Astronautics



Environmental Sciences

Integrated study across science, technology and policy

- Environmental Sciences
- Ecology
- Geography (Physical + Human)
- Urban and Regional Planning

Three research focuses

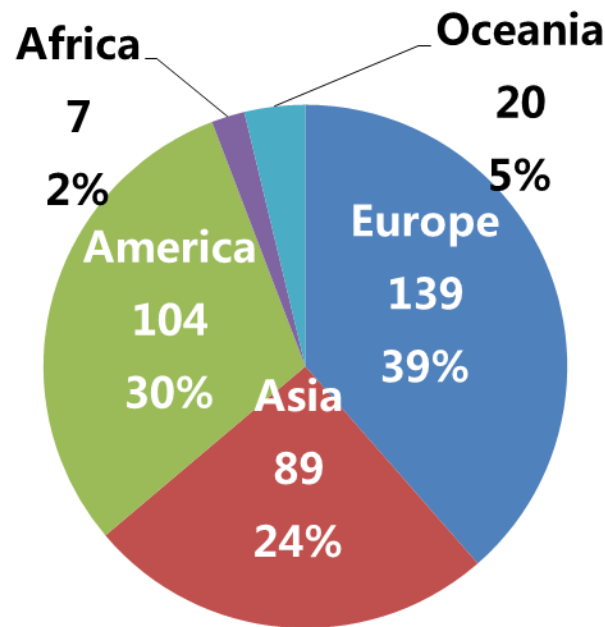
- Global Change and Ecological and Environmental Responses
- Environmental Pollution and Effects on Human Health
- Urban and Regional Sustainable Development

Selected research highlights

- Carbon cycles of terrestrial ecosystems in China
- Biodiversity: patterns and conservation
- PAH Emission inventory and outflows
- Ecotoxicology
- Industrial carbon emission and energy policy
- Quaternary environmental change
- City cluster and megacities in China

Fast Facts

Partner Universities: **359** universities from **53** countries / regions



Ways of Collaboration



Joint Programs

- **PKU-LSE Double Master Degree Program in International Studies**
 - 2-year program (1 year at PKU and LSE, respectively)
 - Recruiting 20 students per year
 - Two master degrees from PKU and LSE, respectively
- **PKU-GeorgiaTech-Emory Joint Ph.D. Programs**
 - Biomedical Engineering / Materials Science and Engineering
 - 2 advisors: main advisor at the primary campus and co-advisor at the secondary campus
 - At least one year with the co-advisor at the secondary campus
 - One single doctoral dissertation

Ways of Collaboration

Joint Research Institutes

- **Kavli Institute for Astronomy and Astrophysics**
 - Supported by Kavli Foundation
 - Research focusing on: cosmology, first light and galaxy assemblage; gravitational physics and high-energy phenomena; interstellar medium, stars and planets
 - International Advisory Committee chaired by Prof. Simon White from Max-Planck-Institute
- **PKU-UCLA Joint Research Institute in Science and Engineering**
 - Computer-aided design of integrated circuits and systems
 - Brainstem frequency-following response
 - Space science, astrophysics and cosmology
 - Environmental and genetic determinants of common diseases of children
 - Developmental Biology and Chemical Genomics



Ways of Collaboration

Beijing Forum - The Harmony of Civilizations and Prosperity for All

- Annual conference since 2004
- Co-sponsored by PKU, the Beijing Municipal Commission of Education, and the Korea Foundation for Advanced Studies
- Over 3000 participants including well known politicians and noted scholars from 70 countries and regions in the past 10 years

Website: <http://www.beijingforum.org/>

Ways of Collaboration

Summer School International

- Each summer from 2009
- Around 120 students from universities worldwide per year
- Summer School International 2014 (June 28-July 25)

19 courses taught in English on philosophy, economics, public policy, sociology, culture, literature, music, etc.

Website: <http://summer.studyatpku.com/>



Ways of Collaboration

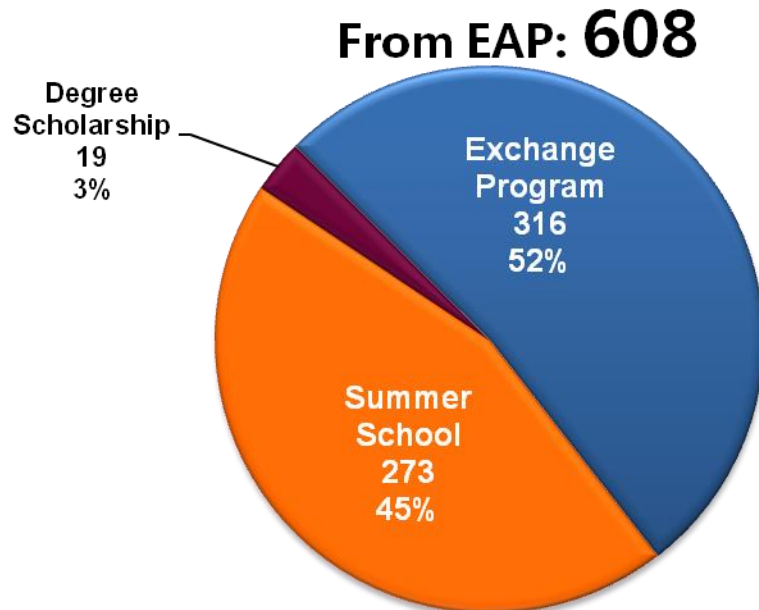
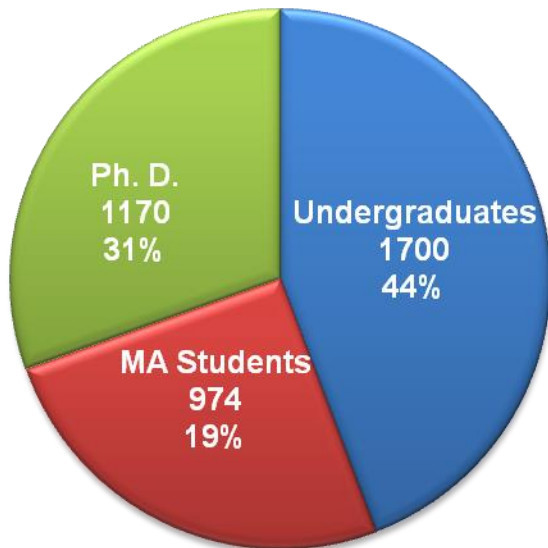


PKU HSC-UMHS Joint Institute for Translational and Clinical Research

- The Joint Institute (JI), established in 2010, is a unique partnership between Peking University Health Sciences Center and the University of Michigan Health System, through which we hope to enable scientists from both sides to translate basic research more quickly and efficiently into medical practice and improve outcomes for patients in China, in the U.S. and around the world.
- With a combined commitment of \$14-million, the Joint Institute sponsors high-impact collaborative research that leverages the unique strengths of each university to advance global health.
- In the current stage, the JI's research programs mainly focus on four pervasive medical conditions: pulmonary disease, cardiovascular disease, liver disease and renal disease. In each of these four areas, panels of experts from both universities have identified promising clinical and translational research studies. Up to now, 12 projects have been conducted jointly by teams at each university with the support of the three cores established by the JI, namely, Biorepository/Bioinformatics Core, IRB/Human Subject Protections Core, and Collaboration Core.

Education Abroad Program

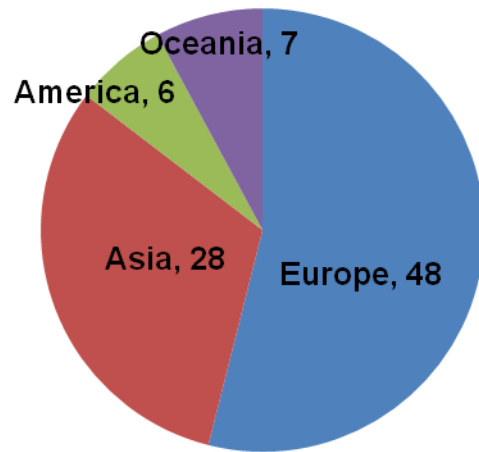
- Outgoing Students: **3,844** (2013)



Education Abroad Program

- Regular Exchange with Partner Universities

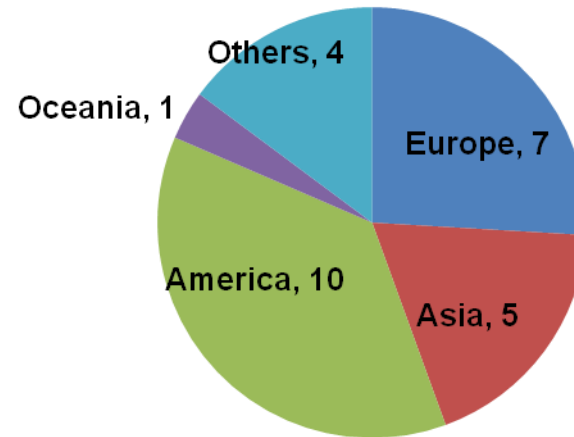
Number of Programs: 92



■ Europe ■ Asia ■ America ■ Oceania

- Summer School Programs

Number of Programs: 27



■ Europe ■ Asia ■ America ■ Oceania ■ Others

Others: Programs within IARU, APRU, IFPU, AEARU

Education Abroad Program

- China Scholarship Council Program
 - Postgraduate Scholarship Program
 - Up to 5,000 graduates each year to study abroad
 - International Exchange Scholarship for Excellent Undergraduates 2013
 - 3,000 undergraduates each year to exchange abroad



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Thank you!

