Transnational Cooperation in Faculty Mobility
Kyushu University’s Strategy for Asia

Masaharu Yanagihara
Trustee and Vice President, Kyushu University

Paris, 28 March 2007
Executive Summary

- **Kyushu University**
  - Geographical advantage: close to the continent of Asia
  - Historical and cultural ties with neighboring countries
  - Open-to-Asia strategy

- **Expanding Collaboration in Asia**
  - Leading consortia of Asian universities
  - Research and education exchange programs (esp. young researchers)
  - Exchange through (joint) R&D projects

- **Enhancing international mobility of researchers**

- “**Cutting Edge**” research projects looking ahead to the future
Schematic Outline of Kyushu University (Ⅰ)

**Chronological Outline**
- Apr. 1903  Fukuoka Medical College attached to Kyoto Imperial University
- Jan. 1911  Kyushu Imperial University
- May 1949  Kyushu University

**Campuses**
- 7 Campuses in Fukuoka Prefecture
- 1 Campus in Oita Prefecture

**Schools and Institutes**
- 11 Undergraduate schools
- 17 Graduate schools
- 3 Attached research institutes
- 1 Hospital
### Schematic Outline of Kyushu University

#### Undergraduate Schools (11)
- Letters, Education, Law, Economics, Sciences, Medicine, Dentistry, Pharmaceutical Sciences, Engineering, Design, Agriculture

#### Graduate Schools (17)
- Humanities, Social and Cultural Studies, Human-Environment Studies, Law, Law School (Professional), Economics, Sciences, Mathematics, Systems Life Sciences, Medical Sciences, Dental Sciences, Pharmaceutical Sciences, Engineering, Design, Information Science and Electrical Engineering, Engineering Sciences, Bioresource and Bioenvironmental Sciences

#### Research Institutes (3)
- Medical Institute of Bioregulations, Research Institute for Applied Mathematics, Institute for Applied Mechanics, Institute for Materials Chemistry and Engineering

### University staff (As of November 1, 2006)

<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Members</td>
<td>11</td>
</tr>
<tr>
<td>Faculty</td>
<td>2,325</td>
</tr>
<tr>
<td>Professors</td>
<td>756</td>
</tr>
<tr>
<td>Associate Professors</td>
<td>674</td>
</tr>
<tr>
<td>Assistant Professors</td>
<td>113</td>
</tr>
<tr>
<td>Research Associates</td>
<td>779</td>
</tr>
<tr>
<td>Exclusively Affiliated with Law School</td>
<td>3</td>
</tr>
<tr>
<td>Administrative Staff</td>
<td>2,127</td>
</tr>
<tr>
<td>Administrative Staff</td>
<td>858</td>
</tr>
<tr>
<td>Technical Staff</td>
<td>1,269</td>
</tr>
</tbody>
</table>

**International Faculty**: 51* (2.2%)
- Professors: 8
- Associate Professors: 32
- Assistant Professors: 1
- Research Associates: 10

*included in the number of Faculty, left (2,325)

cf. The average number of international faculty for 87 national university corporations: **17.3 persons** (06/07 Statistics by MEXT)
**Schematic Outline of Kyushu University**

### Students Enrollment (As of November 1, 2006)

<table>
<thead>
<tr>
<th>University Divisions</th>
<th>Undergraduate Students</th>
<th>Graduate Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Master’s Course</td>
<td>Professional School</td>
</tr>
<tr>
<td>Letters (School) Humanities</td>
<td>690(405)</td>
<td>78(36)</td>
</tr>
<tr>
<td>Education</td>
<td>211(144)</td>
<td></td>
</tr>
<tr>
<td>Law</td>
<td>529(395)</td>
<td>106(43)</td>
</tr>
<tr>
<td>Law School (Professional Graduate School)</td>
<td></td>
<td>276(114)</td>
</tr>
<tr>
<td>Economics</td>
<td>1,126(307)</td>
<td>73(19)</td>
</tr>
<tr>
<td>Sciences</td>
<td>1,260(221)</td>
<td>34(38)</td>
</tr>
<tr>
<td>Medicine (School) Medical Sciences</td>
<td>1,249(566)</td>
<td>48(38)</td>
</tr>
<tr>
<td>Dentistry (School)</td>
<td>359(138)</td>
<td></td>
</tr>
<tr>
<td>Dental Science</td>
<td></td>
<td>120(40)</td>
</tr>
<tr>
<td>Pharmaceutical Sciences</td>
<td>343(174)</td>
<td>156(51)</td>
</tr>
<tr>
<td>Engineering</td>
<td>3,672(268)</td>
<td>814(58)</td>
</tr>
<tr>
<td>Design</td>
<td>857(303)</td>
<td>309(110)</td>
</tr>
<tr>
<td>Agriculture (School)</td>
<td>580(376)</td>
<td>496(194)</td>
</tr>
<tr>
<td>Bioresource and Environmental Sciences</td>
<td></td>
<td>245(118)</td>
</tr>
<tr>
<td>Human-Environment Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Science and Electrical Engg</td>
<td>284(171)</td>
<td>102(40)</td>
</tr>
<tr>
<td>Social and Cultural Studies</td>
<td>95(31)</td>
<td>142(71)</td>
</tr>
<tr>
<td>Mathematics</td>
<td>117(11)</td>
<td>48(2)</td>
</tr>
<tr>
<td>Systems Life Sciences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interdisciplinary Graduate School of</td>
<td>456(48)</td>
<td></td>
</tr>
<tr>
<td>Engineering Sciences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The 21st Century Program</td>
<td>104(73)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11,364(3,377)</td>
<td>3,074(830)</td>
</tr>
</tbody>
</table>

*( ) indicates females who are included in the total number of students.*
Schematic Outline of Kyushu University (प्रतिवर्षीय)

**International Academic Cooperation (As of December 1, 2005)**

<table>
<thead>
<tr>
<th>Region</th>
<th>Asia</th>
<th>Middle and Near East</th>
<th>Africa</th>
<th>Europe</th>
<th>North America</th>
<th>Central and South America</th>
<th>Oceania</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>University level</td>
<td>40</td>
<td></td>
<td>22</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>Faculty level</td>
<td>68</td>
<td>1</td>
<td>2</td>
<td>37</td>
<td>15</td>
<td>2</td>
<td>5</td>
<td>130</td>
</tr>
</tbody>
</table>

**Number of Student Exchange Programs**

<table>
<thead>
<tr>
<th>Region</th>
<th>Asia</th>
<th>Middle and Near East</th>
<th>Africa</th>
<th>Europe</th>
<th>North America</th>
<th>Central and South America</th>
<th>Oceania</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>University level</td>
<td>41</td>
<td></td>
<td>32</td>
<td>14</td>
<td>2</td>
<td>2</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td>Faculty level</td>
<td>21</td>
<td>1</td>
<td>17</td>
<td>5</td>
<td>3</td>
<td></td>
<td>47</td>
<td></td>
</tr>
</tbody>
</table>
International Affairs Strategy

Focusing on Asia
- Expanding university collaboration in Asia
- Building Networks
- Strengthening academia in Asia

Enhancing Asia’s visibility in the world

Worldwide Collaboration
- Building up collaborative relationships with universities in the world through competitive engagement

Conference of Asian University Presidents

University Summit in Kyushu
Expanding Collaboration in Asia (Ⅰ)

1. Collaborative work with Asian institutional partners in various research fields relating to Asia-specific issues

2. Symposia on various subjects relating to Asia

3. Collaboration in education with institutional partners in Asia

4. Collaboration to strengthen academia in Asia
   - International cooperation for development -
Expanding Collaboration in Asia ( }): Collaborative work in various research fields relating to Asia-specific issues

Medical Sciences, Pharmaceutical Sciences, Biotechnology

<table>
<thead>
<tr>
<th>Project Title</th>
<th>KU Researcher</th>
<th>Core Institutional Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishment of collaborative research and education center for hematopoietic disorders in Asia</td>
<td>Mine Harada Prof, Faculty of Medical Sciences</td>
<td>Department of Medicine, Siriraj Hospital, Thailand</td>
</tr>
<tr>
<td>Pilot study for developing a network for prevention and control of leptospirosis in Asia</td>
<td>Shin’ich Yoshida Prof, Faculty of Medical Sciences</td>
<td>1. College of Public Health, University of the Philippines 2. Shanghai Jiao Tong University 3. WHO Collaborating Centre for Diagnosis, Reference, Research and Training in Leptospirosis</td>
</tr>
<tr>
<td>Cooperative research and educational center for breeding and standardization of medicinal plants and drug development between Japan and China</td>
<td>Yukihiro Shoyama Prof, Faculty of Pharmaceutical Sciences</td>
<td>Peking University</td>
</tr>
<tr>
<td>Novel Cell-specific and pH-sensitive non-viral gene carrier system</td>
<td>Atsushi Maruyama Prof, Institute for Materials Chemistry and Engineering</td>
<td>1. Changchun Institute of Applied Chemistry, Chinese Academy of Sciences 2. Department of Biological Sciences, Korea Advanced Institute of Science and Technology</td>
</tr>
</tbody>
</table>
Expanding Collaboration in Asia (アジアへの拡大協働)
Collaborative work in various research fields relating to Asia-specific issues

Agriculture, Information Science

<table>
<thead>
<tr>
<th>Project Title</th>
<th>KU Researcher</th>
<th>Core Institutional Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science of hybrid rice: breeding, cropping patterns and the environment</td>
<td>Atsushi Yoshimura Prof, Faculty of Agriculture</td>
<td>1. Hanoi Agricultural University, Vietnam</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Kasetsart University, Thailand</td>
</tr>
<tr>
<td>Infrastructural communication technologies supporting a fully ubiquitous</td>
<td>Kiyotoshi Yasumoto Prof, Faculty of</td>
<td>1. Indian Institute of Technology (Madras, Delhi, kharagpur, Bombay)</td>
</tr>
<tr>
<td>information society</td>
<td>Information Science and Electrical</td>
<td>2. University of Delh, India</td>
</tr>
<tr>
<td></td>
<td>Engineering</td>
<td>3. Jadavpur University, India</td>
</tr>
<tr>
<td>Development and operation of NGI (Next Generation Internet) technologies</td>
<td>Koji Okamura Associate Prof, Computing</td>
<td>Chungnam National University, Korea</td>
</tr>
<tr>
<td></td>
<td>and Communications Center</td>
<td></td>
</tr>
</tbody>
</table>

Expanding Collaboration in Asia

Symposia on various subjects relating to Asia

Symposium organized by Kyushu University Asia Center

Medical Care and Bioethical Issues

Pop Culture and Cultural Foundations

China, Korea and Japan Joint Symposium
In Search of New Cooperation and Sub-Regional Identities
(1-2 Feb. 2007)

Graying Society and Active Aging

Links with Industries

Presenters and panelists were invited from:

(China)
Beijing Hospital
Chinese Academy of Social Sciences
Fudan University
Tsinghua University Hospital

(Korea)
Asan Medical Center
Dongguk University
Kyungpook National University
Sungkyunkwan University
The Dong-A Ilbo

(Japan)
Asia Youth Culture Center
Eu-Japan Center for Industrial Cooperation
Okayama University
Japan Association for Bioethics
Japan International Cooperation Agency
Kyushu University
Tokyo University
Organization for the Study of the Asia IT Business
Nishinippon Shinbun
Yamaguchi University
The science ministers of the three countries met at Seoul, January 2007. (First meeting in history.)

**Workshop for the Trilateral S&T Cooperation**
Researchers in the fields of environment and energy met together at Kyushu University, 5 March 2007.

**Outcome**

*Through the University’s network in Asia, Kyushu University will enhance the international mobility of researchers between the three countries.*

Kyushu University was selected as the host of the workshop. Researchers agreed to meet together for further collaboration.
Expanding Collaboration in Asia (アジアとの協同開発)

Collaboration in education

Asian Student Exchange Program (ASEP)

Faculty Mobility
- Joint Courses
- E-Learning

Student Mobility
- Student Exchange
- Scholarship
- Credit transfer

Joint Courses with Pusan N. University
Joint Courses with Mahidol University

Start in Oct. 2007

- One joint courses will be implemented at both partner universities
- Professors of the counterpart university will be invited to teach
- Distance learning (virtual classrooms) will be created

ASEP Partners:
- Fudan University
- Nanjing University
- University of Hong Kong
- Pusan N. University
- Seoul N. University
- Mahidol University
- Thammasat University

For offering Asian Studies courses, professors were invited from:
- N. University of Singapore, Seoul N. University
- Amherst College, University of Arizona, Rice University,
- Catholic University of Leuven, University of Essex

6-week Summer Program
Asia in Today’s World
### Expanding Collaboration in Asia (Ⅲ)

**Collaboration to strengthen Asia’s academe**
- International cooperation for development -

<table>
<thead>
<tr>
<th>Project Title</th>
<th>KU Faculty</th>
<th>Core Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistance for development of Faculty of Medicine and Health Science project, Syarif Hidayatullah State Islamic University</td>
<td>Faculty of Medical Sciences University Hospital</td>
<td>Syarif Hidayatullah State Islamic University, Indonesia</td>
</tr>
<tr>
<td>Project for improving higher education institutions through university-industry-community links (Hi-Link) in Gadjah Mada University</td>
<td>Faculty of Engineering</td>
<td>Gadjah Mada University, Indonesia</td>
</tr>
<tr>
<td>Pilot study for education on safety and the environment in the Chinese coal mining industry</td>
<td>Faculty of Engineering</td>
<td>Universities in Inland provinces, China</td>
</tr>
<tr>
<td>Education &amp; research capability building project of Hanoi Agricultural University</td>
<td>Faculty of Agriculture</td>
<td>Hanoi Agricultural University, Vietnam</td>
</tr>
<tr>
<td>Training program for National University of Timor-Leste faculty members</td>
<td>Faculty of Agriculture</td>
<td>National University of Timor-Leste, East Timor</td>
</tr>
</tbody>
</table>
Visiting Researchers (apphire)

Outbound/Inbound Visiting Researchers (2005.4 - 2006.3)

<table>
<thead>
<tr>
<th></th>
<th>Asia</th>
<th>M East</th>
<th>Africa</th>
<th>Oceania</th>
<th>N America</th>
<th>M&amp;S America</th>
<th>Europe</th>
<th>Other Areas</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outbound</strong></td>
<td>1,199</td>
<td>27</td>
<td>23</td>
<td>81</td>
<td>773</td>
<td>30</td>
<td>690</td>
<td>2</td>
<td>2,825 (69)*</td>
</tr>
<tr>
<td><strong>Inbound</strong></td>
<td>490</td>
<td>9</td>
<td>9</td>
<td>8</td>
<td>85</td>
<td>7</td>
<td>168</td>
<td>1</td>
<td>777 (170)*</td>
</tr>
</tbody>
</table>

*term is longer than 1 month

Comparison: Outbound & Inbound

Outbound Researchers per Area

- Asia: 43%
- M East: 24%
- Africa: 11%
- Oceania: 1%
- N America: 1%
- M&S America: 1%
- Europe: 3%
- Other Areas: 1%

Inbound Researchers per Area

- Asia: 63%
- M East: 22%
- Africa: 1%
- Oceania: 1%
- N America: 1%
- M&S America: 1%
- Europe: 1%
- Other Areas: 1%
Visiting Researchers (acky)

Number of outbound researchers

Kyushu University
2003-2006

Number of outbound researchers

All Japanese universities
1999-2005

Enhancing Mobility of Young Researchers

Projects for fostering young researchers’ creativity and global awareness

**Project 1  Initiative for “Attractive Education” in Graduate Schools**

- International Economic and Business Law, Graduate School of Law
- Molecular Science, Graduate School of Sciences
- Clinical Medicine, Graduate School of Medical Sciences
- Graduate School of Dental Science
- Food Science, Graduate School of Bioresource and Bioenvironmental Sciences
- Molecular and Material Sciences, Interdisciplinary Graduate School of Engineering Sciences

**Project 2  University Education Internationalization Promotion Program**

- Graduate School of Bioresource and Bioenvironmental Sciences

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**Creative Young Researchers**
- Leadership
- Global sense
- Planning and management ability
- Flexible approach to new research fields

**Collaboration of KU and visiting professors to implement attractive education**

**Seminars and lectures by visiting researchers**

**Fostering discussion skills and ability for planning and implementation of projects**

**Creating and increasing opportunities for graduate students to participate in international conferences.**
Enhancing Mobility of Researchers

**Endeavors**

Betterment of circumstances for more KU young researchers to be encouraged to go out to the world and to work with researchers from overseas universities

- Strategic graduate school education programs
- Upgrading English proficiency of young researchers
- Effective and frequent publicizing of KU’s state-of-the-art research to the world
- Scientific seminars/symposia in overseas countries
- English publication and homepages
- Substantial sabbatical leave scheme

International research projects initiated and backed by the government

The 21st century COE Program effect:

- Increased number of young researchers (RA, PD) from overseas universities
- Increased number of Japanese researchers’ presentations at international academic conferences
- Increased number of research papers published in overseas countries

"Results of 21st Century COE Program Report" by MEXT (Aug. 2006)
Enhancing International Mobility of Researchers

- Improving foreign language skills of university staff
  English, Korean, Chinese, etc.

- Improving living circumstances for international researchers
  housing, immigration policies, education for children, support by a local government and community, and other structural issues

Cooperation of the government is expected for solving structural issues.

Kyushu University is working on developing a support system for International researchers
“Cutting Edge” Research Projects (𫖯)

Strategic research looking ahead to the future

- Hydrogen Campus Plan
  Research Center for Hydrogen Industrial Use and Storage
- Wind Power System by Wind Lens Micro Windmill
- Functional Innovation of Molecular Information
- Robotics Research Core
  Robotics for medical care, people’s welfare, environmental preservation, and information networks & industrial use
- Integrated Life Sciences
- Architecture of Habitat Systems for Sustainable Development

Kyushu University’s three research promotion programs:

- Kyushu University
  Super Star Program

- Kyushu University
  Research Core

- Kyushu University P&P
  (Interdisciplinary Programs in Education and Projects in Research Development)
"Cutting Edge" Research Projects (岡)
Strategic research looking ahead to the future

Hydrogen Campus Plan: Hydrogen Utilizing Mechanical Systems
Developing technology that can treat hydrogen safely in order to create a sustainable society.

Two pillars of the project:
- Research of hydrogen utilized mechanical systems
- Fostering students and engineers who can integrate a wide range of specialized techniques

1. Internationalizing education programs
   From overseas universities to Kyushu University
   Researchers will be invited from overseas to give lectures.
   From Kyushu University to overseas universities
   KU students and post-doctoral fellows will work with those invited researchers in the laboratories of the researchers.

2. Internship in International Cooperation
   KU students will learn various issues relating to international standards and integration technologies through internships developed in partnership with KU, overseas universities and companies inside and outside of Japan.

3. Laboratory research under multiple supervisors
4. Participation in "Integration Technology Board"
5. Collaborative education with KU Business School
6. Academic/Industrial internship collaboration
7. Case studies
8. Lectures by researchers invited from research institutions within Japan
Future Directions

Kyushu University will make endeavors to;

- Pursue cutting edge research which benefits the future of the Earth and strengthens Kyushu University’s international competitiveness
- Strive to increase Asia’s influence in the world and stimulate substantial collaboration amongst universities in the world

In consequence;

Worldwide collaboration of transnational researchers to create synergetic research outcomes that contribute to the future of the Earth and life on the Earth

Participants will discuss the challenges of successfully integrating a twenty first century university into its local environment under the theme of “Integrating Global Universities and Local Communities in the 21st Century”.

Key words:
- The “Science City” of the Future & the Environment
- Food Science and Food Systems
- Health Science

Oct. 2007
University Summit
in Kyushu
OECD Workshop on the International Mobility of Researchers
Paris, 28 March 2007

Transnational Cooperation in Faculty Mobility
Kyushu University’s Strategy for Asia

Masaharu Yanagihara
Trustee and Vice President, Kyushu University

City of Fukuoka