The 6th OIE/WHO/FAOAsia-Pacific Workshop on
Multi-Sectoral Collaboration for the Preventions and Control of Zoonoses
Oct 27-29, 2015

Graduate School Program for Fostering Human Resources for One Health

Motohiro Horiuchi
Laboratory of Veterinary Hygiene,
Graduate School of Veterinary Medicine,
Hokkaido University, Japan

On behalf of Graduate School of Veterinary Medicine, Hokkaido University
We are now going to establish new Graduate School,

“Graduate School of Infectious Disease”

We would appreciate if you could fill out the questionnaire on the new Graduate School.

Thank you for your kind cooperation in advance.
Sapporo Beer!

Snow festival!
Hokkaido University

Graduate School: 19
Undergraduate school: 12
Research institute etc: 32
### Number of students

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
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<tbody>
<tr>
<td><strong>Undergraduates</strong></td>
<td>11,712</td>
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<tr>
<td><strong>Graduate course students</strong></td>
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<tr>
<td>Master course</td>
<td>3,577</td>
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<tr>
<td>Professional school</td>
<td>309</td>
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<td>Doctoral course</td>
<td>2,387</td>
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### Number of international students

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<tr>
<td><strong>Undergraduates</strong></td>
<td>89</td>
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<tr>
<td><strong>Graduate course students</strong></td>
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<tr>
<td>Master course</td>
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<td>Research students</td>
<td>137</td>
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<td>Doctoral course</td>
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### Number of staffs

<table>
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<tr>
<td>Professors</td>
<td>741</td>
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<tr>
<td>Associate professors</td>
<td>618</td>
</tr>
<tr>
<td>Lecturers</td>
<td>115</td>
</tr>
<tr>
<td>Assistant professors</td>
<td>604</td>
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<tr>
<td>Administration</td>
<td>806</td>
</tr>
<tr>
<td>Technical staff</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Graduate School of Veterinary Medicine

Department of Biomedical Science
  Lab. Anatomy  
  Lab. Physiology  
  Lab. Biochemistry  
  Lab. Pharmacology

Department of Disease Control
  Lab. Microbiology  
  Lab. Infectious Disease  
  Lab. Parasitology  
  Lab. Laboratory Animal Science and Medicine

Department of Veterinary Clinical Science
  Lab. Veterinary Internal Medicine  
  Lab. Veterinary Surgery  
  Lab. Comparative Pathology  
  Lab. Theriogenology  
  Lab. Molecular Medicine  
  Lab. Advanced Veterinary Medicine

Department of Environmental Veterinary Science
  Lab. Public Health  
  Lab. Radiation Biology  
  Lab. Toxicology  
  Lab. Wildlife Biology and Medicine

Department of Applied Veterinary Science
  Lab. Veterinary Hygiene

Research Center for Zoonosis Control
  7 Divisions
Program for Leading Graduate Schools
Fostering Global Leaders in Veterinary Science for Contributing to “One Health”

From FY2011-2017

http://www.vetmed.hokudai.ac.jp/onehealth/
Fostering experts (Ph.D.) who can take the leadership toward “One Health” to maintain the integrity of ecosystems, the health of animals and humans, and a soundness of the life environments, as experts of veterinary science with multi-disciplinary sense, and a comprehensive problem-solving competence.

Our graduate school program, which incorporates practical activities abroad and international activities, aims at fostering experts who can play active roles both nation- and world-wide.
Human resources that we need as Ph.D.

Liberal arts, multi-disciplinary knowledge

Strong will, responsibility
Communication and collaboration competence

Deep, firm expertise

Sub-major
Major activities in our Leading Program

✓ Special admissions quota for recruiting graduates of diverse nationalities and/or those from different academic backgrounds.

✓ An enhanced curriculum that includes fundamental subjects of veterinary science in order to improve postgraduates’ multidisciplinary and holistic viewpoints.

✓ English classes that enhance students’ overall English ability.

✓ Extensive courses that focus on zoonosis and chemical hazard control, in addition to the previous graduate program.

✓ Overseas activity support programs that support overseas practical epidemiology/collaborative research training for the purpose of improving students’ practical skills and expertise.

✓ Externships abroad that allow students to gain work experience and pursue career paths overseas.

✓ Various programs that encourage students to become more proactive and let them know their responsibility as experts.

✓ Research grant program and equipment in common use in order to support unique, creative, and/or ambitious research by graduate students.
Special admissions quota for recruiting graduates of diverse nationalities and/or those from different academic backgrounds.

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Various programs that encourage students to become more proactive and let them know their responsibility as experts.

Research grant program and equipment in common use in order to support unique, creative, and/or ambitious research by graduate students.

Recruiting motivated students!
Graduate School of Veterinary Medicine
(4-year doctoral course for a maximum of 24 students/year)

Ordinary selection
(Scholarship [competitive])

Special admission quota
for international students
(w/ Scholarship)
(4 students)

Special admissino quota
for Japanese students
from external departments
(w/ Scholarship)
(4 students)

Special Training Program for
International Students
(w/ Scholarship)
(5 students)
International environment

<table>
<thead>
<tr>
<th>Nationality</th>
<th>Enrollment</th>
<th>%</th>
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<tbody>
<tr>
<td>Japanese</td>
<td>45</td>
<td>49%</td>
</tr>
<tr>
<td>International</td>
<td>47</td>
<td>51%</td>
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</tbody>
</table>

Bangladesh, China, Egypt, Ghana, Hungary, Indonesia, Malaysia, Mongolia, Myanmar, Nepal, Philippine, South Korea, Sri Lanka, Thailand, USA, UK, Viet Nam, Zambia.

18 Nationalities
Major activities in our Leading Program

- Special admissions quota for recruiting graduates of diverse nationalities and/or those from different academic backgrounds.
- An enhanced curriculum that includes fundamental subjects of veterinary science in order to improve postgraduates’ multidisciplinary and holistic viewpoints.

**Foster experts for zoonosis and/or chemical hazard control**

- Extensive courses that focus on zoonosis and chemical hazard control, in addition to the previous graduate program.
- Overseas activity support programs that support overseas practical epidemiology/collaborative research training for the purpose of improving students’ practical skills and expertise.
- Externships abroad that allow students to gain work experience and pursue career paths overseas.
- Various programs that encourage students to become more proactive and let them know their responsibility as experts.
- Research grant program and equipment in common use in order to support unique, creative, and/or ambitious research by graduate students.
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- Overseas activity support programs that support overseas practical epidemiology/collaborative research training for the purpose of improving students’ practical skills and expertise.

- Externships abroad that allow students to gain work experience and pursue career paths overseas.

Foster global viewpoint
Support students’ career plan through international work experience
Registration model
Ph.D./Zoonosis Control Expert (ZCE)

<table>
<thead>
<tr>
<th>DC1</th>
<th>DC2</th>
<th>DC3</th>
<th>DC4</th>
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<tbody>
<tr>
<td>Academic English (2 credits)</td>
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<tr>
<td>Subjects on Fundamental Veterinary Science (&gt;8 credits)</td>
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<td></td>
<td>Advanced and Comprehensive Studies on ZC (6 credits)</td>
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<tr>
<td>Evaluation of Doctoral Thesis</td>
<td>Research on Veterinary Science (16 credits)</td>
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<tr>
<td>Advanced Seminar in Veterinary Science (2 credits)</td>
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Special course for Zoonosis Control Expert

Ph.D./ZCE

18

Research for Ph.D. thesis

Graduate course education program
Lectures and experimental practices to acquire essential knowledge and techniques to be an Expert of Zoonosis Control.

Nearly 4 weeks intensive course consisting of

✓ Approx. 35 lectures including generals, specials and miscellaneous concerning zoonosis/infectious diseases

✓ 7 experimental practices

✓ Tutorials including risk analysis

✓ Examination

This year: From Aug 20 to Sept 29
### Registration model

**Ph.D./Zoonosis Control Expert (ZCE)**

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<tbody>
<tr>
<td><strong>Special course for Zoonosis Control Expert</strong></td>
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<td><strong>Ph.D./ZCE</strong></td>
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<td><strong>Academic English (2 credits)</strong></td>
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<td></td>
<td><strong>Practice on Overseas Field Epidemiology/Overseas Collaborative Research (2 credits)</strong></td>
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<td><strong>Research on Veterinary Science (16 credits)</strong></td>
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</table>
**Overseas activities of graduate students**

**Practice on Overseas Field Epidemiology/Collaborative Research**

**Utilizing reliable international networks**

- **Ghana**: Survey on heavy metals and polycyclic aromatics.
- **Mongolia**: Surveillance of influenza viruses.
- **Sri Lanka**: Control of rabies.
- **USA**: Analysis of prion entry mechanism in cells.
- **Mexico**: Epidemiologic survey on flaviviruses and hantaviruses.
- **Zambia**: Survey on infectious diseases of wildlife, viral infectious diseases, and heavy metal contamination.
- **Nepal**: TB in elephants.
- **Thailand**: Food borne diseases.
- **Philippines**: Epidemiologic survey on filoviruses and TB.
- **Viet Nam**: HAPI.

**Collaborative research abroad**

- Maximum use of international networks that have been built through research/educational activities.
- Utilizing reliable international networks.

- **Ethiopia**: Survey on heavy metals and agricultural chemicals.
Dr. Hiroaki Okagawa (D2) Carapao Center (Philippine) for one month
Surveillance of *M. bovis* & *paratuberculosis*
### Registration model
**Ph.D./Zoonosis Control Expert (ZCE)**

<table>
<thead>
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<th>DC4</th>
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</thead>
<tbody>
<tr>
<td><strong>Subjects on Fundamental Veterinary Science (8 credits)</strong></td>
<td><strong>Research on Veterinary Science (16 credits)</strong></td>
<td><strong>Externship Abroad (2 credits)</strong></td>
<td><strong>Evaluation of Doctoral Thesis</strong></td>
</tr>
<tr>
<td><strong>Academic English (2 credits)</strong></td>
<td><strong>Practice on Overseas Field Epidemiology/Overseas Collaborative Research (2 credits)</strong></td>
<td><strong>Advanced and Comprehensive Studies on ZC (6 credits)</strong></td>
<td><strong>Special course for Zoonosis Control Expert</strong></td>
</tr>
</tbody>
</table>

**WHO WPRO**

**FAO/Vietnam**
Fostering Global Leaders in Veterinary Science for Contributing to One-Health
Hokkaido University

Open the door for the students

Fostering Global Leaders in Veterinary Science for Contributing to One-Health
Hokkaido University

Human resource interchange

- Field sites (Epi-center)
- Medical institutions
- Testing/diagnostic labs
- R&D institutions
- Risk management authorities
- Risk analysis/assessment authorities
- Education organizations
- Research institutions
- Invites prominent experts
- Externships Activities in abroad
Maximum use of international networks that have been built through research/educational activities

Short-term visit

Hokkaido University
Graduate School of Veterinary Medicine
Research Center for Zoonosis Control (WHO Collaborative Center)
Maximum use of international networks that have been built through research/educational activities.
Externship at FAO Viet Nam office
✓ AI surveillance
✓ Live bird market inspection
✓ Transfer diagnostic skill

FAO Viet Nam office

Mr. Shintaro SHICHINOHE (from Japan)

Hokkaido University
Graduate School of Veterinary Medicine

Dr. Inui
WHO Western Pacific Regional Office (WPRO)

Invite WHO expert
Dr. Kasai

Hokkaido University
Graduate School of Veterinary Medicine
Research Center for Zoonosis Control (WHO Collaborative Center)
WHO Western Pacific Regional Office (WPRO)

Pre-externship team
✓ Event-based surveillance
✓ Rapid risk assessment
✓ Trend of H7N9

Hokkaido University
Graduate School of Veterinary Medicine
Research Center for Zoonosis Control (WHO Collaborative Center)

Invite WHO expert
Dr. Kasai

Maximum use of international networks that have been built through research/educational activities

Externship abroad
Exernship abroad

WHO Western Pacific Regional Office (WPRO)

Mr. Kiyeon KIM (from Korea)

Externship
(2014/11/3-12/31)
(2015/1/24-3/23)
(2015/9/19-11/14)

Hokkaido University
Graduate School of Veterinary Medicine
Research Center for Zoonosis Control (WHO Collaborative Center)

Invite WHO expert

Dr. Kasai
Maximum use of international networks that have been built through research/educational activities.
Registration model
Ph.D./Zoonosis Control Expert (ZCE)

Special course for
Zoonosis Control Expert

- Academic English (2 credits)
- Subjects on Fundamental Veterinary Science (>8 credits)

Ph.D./ZCE

- Certification Exam for ZCE

Evaluation of Doctoral Thesis
- Research on Veterinary Science (16 credits)
- Advanced Seminar in Veterinary Science (2 credits)

Externship Abroad (2 credits)
Practice on Overseas Field Epidemiology / Overseas Collaborative Research (2 credits)
Advanced and Comprehensive Studies on ZC (6 credits)

Academic English (2 credits)
Subjects on Fundamental Veterinary Science (>8 credits)

Presentation: propose control measure for zoonosis

Group discussion
International education activities

**Advanced Training Course for Zoonosis Control (From 2008 -2012)**
**Global Brain Circulation Scheme for One Health (From 2013-)**

- 2-4 month training course
- Invite 2-8 trainees from worldwide

These three decided to enter Graduate School after attending the training course
Fostering Ph.D. (experts) for One Health

Under the Leading Program, we are fostering Ph.D. (experts) who are capable of working with you for prevention and control of zoonotic diseases and infectious diseases.
To continue and further strengthen graduate course education on zoonosis and infectious disease,

we are going to establish new Graduate School,

“Graduate School of Infectious Disease”

Based on the activities by the Program for Leading Graduate Schools.
Establishment of Graduate School of Infectious Diseases

Unique curriculum

- International educational environment
- Cutting edge knowledge of infectious diseases
- Interdisciplinary education
- Laboratory training with state-of-art equipments
- Practical experience at epicenters of infectious diseases
- Externship at international organizations/institutions
- English communication skills for non-native students of English
Establishment of Graduate School of Infectious Diseases

- **Ph D (Infectious Disease)**
  - ZCE

- **Ph D (Veterinary Science)**
  - ZCE

- **Research on Infectious Disease I** (8 credits)
- **Research on Infectious Disease II A** (8 credits)
- **Research on Infectious Disease II B** (8 credits)
- **Research on Infectious Disease I I I** (8 credits)
- **Externship at International Institution/Organization** (2 credits)
- **Practice on Overseas field study/Collaborative research** (2 credits)
- **Subject on specialized infectious diseases I** (>2 credits)
- **Subject on specialized infectious diseases II** (>2 credits)
- **Subject on specialized infectious diseases III** (>2 credits)
- **Advanced and Comprehensive Studies on ZC** (5 credits)
- **Ethics of scientific research** (1 credits)
- **Academic English** (2 credits)
- **Subjects on Fundamental Infectious Diseases** (>6 credits)

**Graduate course education program**

**Research for Ph.D. thesis**
Graduate course
4 years for Ph. D. (No Msc course)

Scholarship for international students
Ministry of Education, Science, Culture and Sports, Japan
The International Priority Graduate Programs (PGP)

Degree
Ph. D. in Infectious Diseases or Ph. D. in Veterinary Sciences
Joint Degree with an EU university (be in terms, established after 2018)

Career opportunities
Academic positions at Universities
Research Institutes
Government agencies/International organizations
Industries
Dear Sir/Madam,

As a member of the preparatory committee of the Graduate School of Infectious Diseases, I want to take the time to thank you for completing this short questionnaire. We will ensure your proposals help us to improve the educational program of the current "Leading Graduate School Program" and also the curricula in the new graduate school. Naturally, all your responses will be kept in the strictest confidence,

Professor Chihiro Sugimoto
Director, Research Center for Zoonosis Control, Hokkaido University

<table>
<thead>
<tr>
<th>Type of your Affiliation (Please check)</th>
<th>International</th>
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<tr>
<td></td>
<td>Governmental</td>
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<tr>
<td></td>
<td>Academic</td>
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<td></td>
<td>Private sector</td>
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</table>
Thank you for your attention
Establishment of Graduate School of Infectious Diseases

**Background**
Emerging and re-emerging infectious diseases are emerging one after another all over the world and threaten our society. To protect society and health of human and animals from infectious diseases, professionals (Ph. D.) with advanced expertise, interdisciplinary knowledge and experiences for disease control.

**Objective**
To foster advanced and specialized professionals who can adopt effective measures for controlling zoonoses in a cutting-edge and international educational environment.
Organizations for the Leading Program

Graduate School of Veterinary Medicine

Research Center for Zoonosis Control