

(Abroad • Domestic) Internship report form (Student)

2017/04/06 (Year/Month/Day)

Name	Nguyen Thanh Lam
Laboratory	Microbiology
Year (Grade)	DC4
Internship institution	Faculty of Veterinary and Agricultural Sciences, The University of Melbourne, Australia
Internship period	Internship period: 19/01/2018 - 26/03/2018 (Departure Date from Sapporo: 18/01/2018, Arrival Date in Sapporo: 27/03/2018)
Purpose	- To enhance my professional qualifications for future career path - To broaden my horizon about high-ranking education, research and collaboration

• The reason why I chose this institute

The University of Melbourne (UoM) is one of the advanced affiliations in education and research in veterinary worldwide. Particularly, for subjects of **veterinary epidemiology** and **bioinformatics** which have been critical parts, a research group in the UoM led by **Prof. Mark Stevenson** is now conducting cutting-edge activities in the areas.

Our laboratory has a **long-term collaboration** with Dr. Stevenson's laboratory in regards to control of transboundary infectious diseases in the Asia-Pacific region. In particular, a senior student in our laboratory (**Dr. Chu Duc Huy, 2013 – 2017**), had a successful internship at Dr. Stevenson's laboratory. **Dr. Huy** has obtained meaningful achievements from his internship. On the other hand, Prof. Stevenson also has a **good collaboration with Vietnam** and **great knowledge about Vietnamese veterinary**. He has successfully supervised several veterinary epidemiologists, who later became key leaders for veterinary sector in Vietnam.

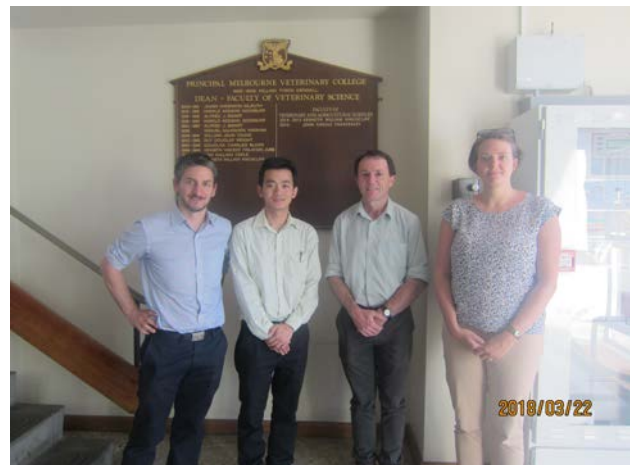


Fig 1. A photo with Prof. Stevenson and his staffs in The Faculty of Veterinary and Agricultural Sciences, The UoM. From the left: Dr. Firestone (senior lecturer), Lam, Prof. Stevenson, Dr. Wiethoelter (senior researcher).

In addition, Hokkaido University and the UoM have **long-established collaborations**, particularly the Global Institution for Collaborative Research and Education (**GI-CoRE**). Under the collaboration, several students have completed their internship in the UoM under cordial supports of counterpart. Therefore, my internship in the UoM would be straightforward and suitable for me.

- **Results of the activity** (about 800 words, provide photos, tables and figures that clearly show the activities during the period)

1. Field and laboratory visits

1.1 Visit and present a topic about avian influenza in Vietnam in **Australian Animal Health Laboratory (AAHL)**

In the early days of my internship, Prof. Stevenson arranged me a short visit to the AAHL (Fig. 2A). AAHL is **one of only six high-containment animal research centers in the world**. The national institute intensively conducts exotic animal disease diagnosis and research. During my visit, I had discussion with several researchers in this institute. I was impressed with high level of bio-containment and strict management there. Importantly, I had a presentation and discussion with **Dr. Frank Wong** who is **group leader of diagnosis surveillance and response, OIE reference laboratory for avian influenza** (Fig. 2B). He shared information of his research activities and also gave me sophisticated discussion for control of avian influenza in Vietnam.

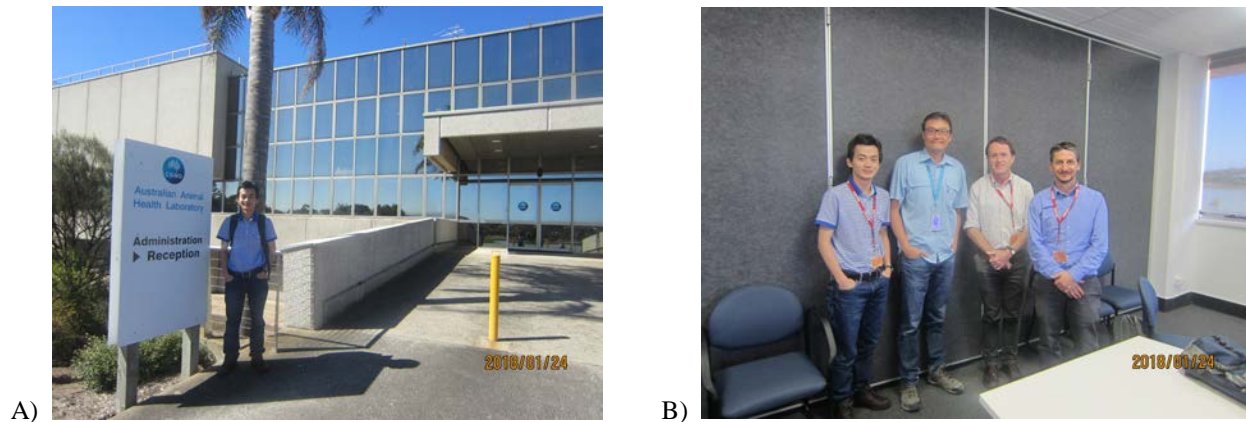


Fig 2. Laboratory visit at AAHL. A) At the main gate of AAHL. B) A group photo with Dr. Frank Wong (middle).

1.2 Visit and present a topic about avian influenza in Vietnam in **WHO Collaborating Center for Reference and Research on Influenza (VIDRL), Peter Doherty Institute for Infection and Immunity**

The VIDRL is part of the WHO Global Influenza Surveillance and Response System. The center is responsible for controlling human influenza in different countries around the world. My activity in this center is to give **1-hour presentation about avian influenza in Vietnam** and audience in the seminar are specialists for human influenza (Fig. 3A). In addition, I visited some representative laboratories in this center. **The well-established system** in the center gave me a great impression and I think that the system could be also a good model for my future laboratory in addition to the laboratory system in Hokkaido University (Fig. 3B).



Fig 3. Laboratory visit at VIDRL. A) Presentation about avian influenza in Vietnam. B) A group photo with Dr. Michelle Wille (right) who is senior researcher in epidemiology and bioinformatics in VIDRL.

2. Training courses

2.1 Attend the **course for Master of Veterinary Public Health: Diseases of Poultry and Aquatic Industries**

This subject implements **online lectures** and **materials** for **Master program** to provide students in-depth understanding of major diseases in poultry and aquatics. The course lasts for 10 weeks and students will be assessed for participation in weekly forum discussions, group assignment and a final written exam (Fig. 4A). By joining this course, I made acquaintances with senior experts who are lecturers and other students who are actually **veterinary officers in Australia**. I also gave a talk about influenza and situation of influenza in Vietnam.

2.2 Attend a workshop for **Residency Training Program** about Biostatistics for Veterinary Research

Residency Training Program is a three-year program offered by the UoM to provide a unique skillset that enables graduate students to pursue clinical research activities to a high level. Biostatistics for Veterinary Research is one of subjects in the program run by Prof. Stevenson. There are **three master students** and **three lectures** in the class so-called workshop (Fig. 4B). I recognized that atmosphere in the classroom was really active since number of students is concentrated and lecturers frequently gives interactive questions to students.

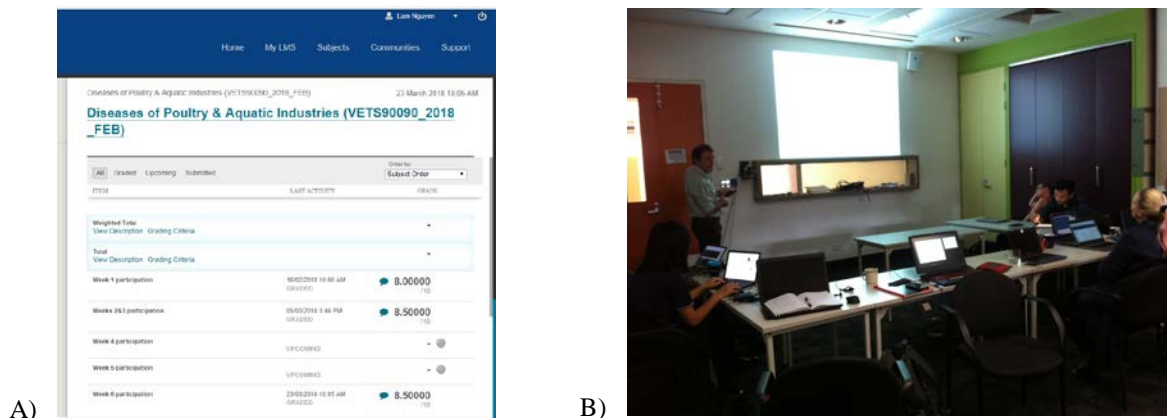


Fig 4. Training course in the UoM. A) Online evaluation panel of my participation in the master course. B) Prof. Stevenson's lecture in the residency training program.

3. Epidemiology and phylo-dynamics of H5 highly pathogenic avian influenza viruses (H5 HPAIVs) in Vietnam

This is a part of my PhD project involved by the tripartite collaboration of Hokkaido University, Department of Animal Health in Vietnam and the UoM. During my internship, I have learned basic knowledge and techniques for conducting research and education in veterinary epidemiology and bioinformatics. This joint project is divided into two sub-topics:

3.1 A spatial risk analysis of H5 HPAI in Vietnam during the period 2014 – 2017. Risk factors associated with spatial effects for H5 HPAI outbreaks in Vietnam were analyzed. This finding is truly important for the control of H5 HPAI in Vietnam.

3.2 Phylo-dynamics of H5 HPAIVs in Vietnam during 2014 – 2017. Biostatistics approaches were applied to analyze transmission dynamics and evolution of H5 HPAIVs in association with value chain.

Manuscripts for these research theme are under writing and will be submitted to international journals in this year.

4. Other activities

- Attend **weekly seminars** of lab-talk and journal club in Faculty of Veterinary and Agriculture Sciences, the UoM. In this seminar, 3 graduates in the faculty present their research progress or selected publication in their research group.

- Attend **monthly seminars** of Epi-Think-Tank (epidemiology group) in the UoM. This seminar is aimed to specialize epidemiology and bioinformatics. I also presented my PhD project and our joint research for the control of avian influenza in Vietnam.

- Beside official academic activities, I participated several **outside activities** with my host lab and other colleagues in the veterinary faculty. We exchanged information of academic and social life in Vietnam, Japan and Australia.

• Positive impacts of the activity on my further career path

With a great opportunity from the internship, I could learned wide range knowledge and educational system in the UoM which is **truly beneficial for my career path** in regards of:

- For my career path, I will become a **lecturer** and **researcher in my home country university**. Therefore, I will implement and disseminate cutting-edge research and education system that I have learned from Hokkaido University and the UoM to my country.

- By fruitful activities during my internship, I could broaden my horizon about **high-ranking education, research and collaboration**. This provides me invaluable experience for my future success. Actually, we still keep in touch for our joint research project. Therefore, it is certain that we had a very deep understanding each other and strong connection, which will enhance **our future collaboration** even after I comeback to Vietnam.

- In spite of short time internship, I could acquire basic techniques for analyzing epidemiology and bioinformatics. As a result, I could obtained **significant results** for my **PhD research projects** under cordial supports and collaboration from the UoM's side. Hopefully, I could enrich more scientific publications for my PhD thesis.

- Most importantly, I have acquired **critical spirits** and deeply recognized **my permanent role in academic environment**. I have fully realized that for every academic institution like Hokkaido University and the UoM or relevant people in academia like my PhD supervisor, Prof. Sakoda and Prof. Stevenson, we all spend more our efforts on education and teaching for the future generation.

- For my personal skills, I could improve my English communication skills with native speakers and especially in scientific discussion. Communication and sharing information are also critical evaluation for PhD study and daily academic life in the UoM.

- In comparison of higher education between Hokkaido University and the UoM, I would speculate that graduate students of the UoM are **more independent** and had **higher troubleshooting skills** in their research. I suppose that it is due by a great advantage of their native language. Therefore, I will always improve my English skills and promote English skills during my job for easy international integration.

• **Advice for junior fellows**

The internship supported by Leading program is an invaluable opportunity to consider the future of the career path. For the junior fellows, I would like to give some advices:

- As in graduate study, students should determine concretely **their future career paths** which should be best fitted to each individual's situation. This will be essential for students for choosing their host internship institution.

- Juniors' students should determine carefully and **expect outcomes of our internship** before actual departure so that we can manage and utilize our internship period in the most effective way.

- **Communication** has become important skills in research and education in the period of internationalization. Therefore, students should acquire skills to explain and sharing your own research activities and education and English is ever truly important for non-native speaking students.

Approval of supervisor	Institution • Official title • Name Laboratory of Microbiology • Professor • Yoshihiro Sakoda
------------------------	--

- ※1 Send the electronic file to the Leading School section, International Affairs Office
- ※2 Attach a copy certificate of the content of internship activity that is prepared by the counterpart at the internship institution (any form with a signature of the counterpart).
- ※3 The Steering Committee of the Leading Program will first confirm the content of this report and report will be forwarded to the Educational Affairs Committee for credits evaluation.

Submit to : Leading School section, International Affairs Office

Ext: 9545 e-mail: leading@vetmed.hokudai.ac.jp