

Abroad • Domestic) Internship report form (Student)

2016/09/29 (Year/Month/Day)

Name	Ryuji KAEDE
Laboratory	Biochemistry
Year (Grade)	4 th grade PhD student
Internship institution	University College Dublin (UCD), Ireland
Internship period	Internship period: 08/02/2016 - 09/01/2016 (Departure Date from Sapporo: 08/01/2016, Arrival Date in Sapporo: 09/03/2016)
Purpose	To understand global veterinary teaching methods and to get a practical experience of dairy farm as a veterinarian.

This report should be submitted within 2 weeks after you return to Japan.

- The reason why you chose this institute

UCD-Hokkaido University exchange program in 2016 gave me a chance to contact with a graduate student studying bovine mastitis in UCD and Teagasc, Grange Research Centre. And I'm interested in global teaching methods and field work to innovate present methods in Japan. More practical research theory and communication competence will be developed after understanding the current fields and diseases. So I've chosen UCD **to understand veterinary teaching methods, get a practical experience of dairy farm as a veterinarian, and to acquire current information of farm animal diseases globally.**

- Result of the activity

(about 800 words、 provide photos, tables and figures that clearly show the activities during the period)

[Teaching methods including problem-based learning]

Problem based learning (PBL) is one of the effective teaching methods to improve veterinary clinical medicine. However, most students in Japan don't feel the importance. Occasionally I hear that even some lecturers also complain of PBL because of consuming a lot of time. I'm afraid that the main cause depends on how to teach students on the basis of PBL in Japan.

Dr. Fenola Leonard is a senior lecture of veterinary microbiology in UCD and is interested in using alternatives to didactic teaching including problem-based learning. Dr. Fenola has a lot of experiences to teach students veterinary classes

on the basis of PBL. I found some critical points of veterinary contents of PBL in UCD from her talk. It contained abundant detailed clinical contents such as video of real clinical cases and various types of actual results of examinations to foster students as professional veterinarians (Fig.1). The number and quality in UCD is much better compared to ones in Japan. Others are to prepare a checklist for evaluate student progress and enough time for appropriate review.

Moreover, thanks to Dr. Fenola's kindness, I got a chance to learn the contents of microbiological practical lecture seeing real teaching materials. It is also strongly connected to clinical cases to apply for veterinary clinical medicine finally.

Ms. Diana Cashman is a lecturer of learning technology in charge of veterinary medicine education program in UCD. She taught me assessment in veterinary medicine on the basis of Millaer's Pyramid (Fig. 2). This is a conceptual model which encompasses the elements required for clinical competence – from the underpinning cognitive levels of knowledge and application of knowledge (Knows and Knows How) to the behavioral levels of practical competence (Shows) and how a veterinarian actually performs in practice (Does). This concept is applied for veterinary medicine in combination with Bloom's Taxonomy (Bloom, 1984) by University of BRISTOL and The University of Edinburgh. In addition, she gave me chances to learn general UCD teaching methods about small groups and large groups and so on.

Dr. Gerald Barry is a lecturer of virology in UCD and is greatly earnest in teaching as well as his wife who is a teacher at high school. In fact, his lecture is so popular among students. He had a lot of time to talk with me about teaching methods. What I got from his discussion is to use various types of tips to activate classes. He knows a lot about time limitation of keeping concentration on listening to class. To overcome the problem, he actively uses anonymous digital voting for quiz and some relative and interesting movie for making an effective impression at intervals (Fig 3).



Fig.1 A clinical case for PBL

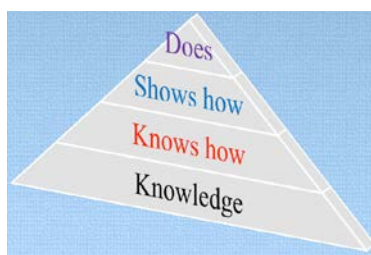


Fig. 2 Miller's Pyramid

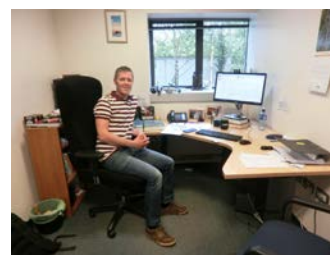


Fig. 3 Dr. Gerald Barry

[Practical experiences from dairy farm]

Mr. Miha Savc is a residence of clinical reproduction of farm animal medicine in UCD to become a veterinary reproductive specialist. He took me to a dairy farm at south of Dublin (Fig. 4). He taught me how to show students and farm owners the imaging of pregnancy state by showing me actually. As you know, farm communication is one of the toughest communication in veterinary fields. Veterinarians sometimes have to let farm owners understand the real conditions of dairy cows. In addition to casual chatting with the owners, the family members, and stuffs, showing scientific data such like the image is very important (Fig. 5). I also learnt that pregnancy diagnosis can be applied for herd health of dairy cows as time to watch health condition of dairy cows and hygiene level of dairy farm.



Fig. 4 Clinical practice at dairy farm



Fig. 5 Guidance of pregnancy image

[Current information of farm animal diseases]

Amazingly, I had chances to know a lot of epidemiological information of farm animal (calves, cattles, sheep, and pigs) diseases in Ireland much more than I expected. There is an annual All-island Animal Disease Surveillance Report in

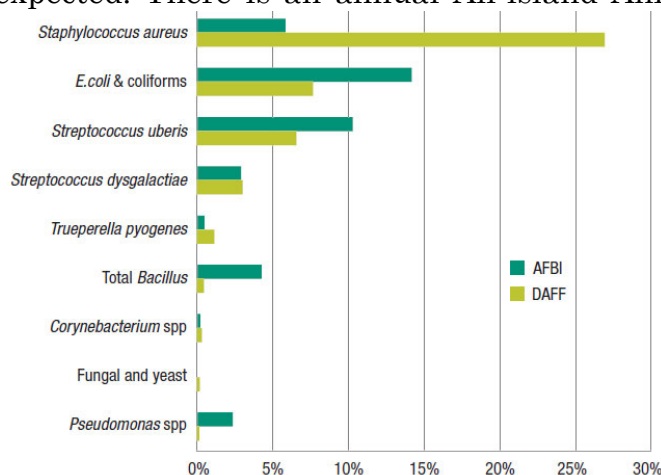


Fig. 6 The relative frequency of detection of selected mastitis pathogens by AFBI (n=1911) and DAFF (n=2939) during 2012.

Ireland by Agri-Food and Biosciences Institute (AFBI) in Northern Ireland and the Department of Agriculture, Food and the Marine (DAFM) laboratories in Ireland. In this report, I focused on the introduction of bovine mastitis because of relative my research.

Mastitis is the second most common reason for the culling of dairy cows after infertility in Ireland. Fig. 6 shows the relative frequency of detection of selected mastitis pathogens in milk samples submitted to AFBI and DAFM laboratories in 2012 (and it is similar pattern to 2011). The high prevalence of *Staphylococcus aureus* isolation by DAFM laboratories accounts for over 36 per cent of culture results, while *E.coli* and other coliforms were isolated in 10.4 per cent of DAFM submissions. The most commonly diagnosed mastitis pathogens in AFBI submissions were *E.coli* and other coliform bacteria (30 per cent). The second most commonly isolated pathogen in milk samples in Northern Ireland was *Streptococcus uberis* (22 per cent). Submissions of milk samples to DAFM and AFBI laboratories traditionally peak at two periods of the year, during the spring, when large numbers of cows are coming into milk, and again in the autumn. The autumn rise tends to be concentrated in the month of October, as an aid in choosing dry cow therapy.

- What do you think the positive impact of the activity will have on your further career path?

I'm sure that this activity has broadened scientific ideas and collaborative communication competences to be an international leading researcher and do research activities abroad more actively.

-Advice for your junior fellows-

Try to realize your idea about overseas activity with your supervisor overseas.

You can do it within limited time you and your supervisor in Japan determined.

Approval of supervisor	Institution • Official title • Name Lab. of Biochemistry Professor Kazuhiro Kimura <div style="text-align: right;">印</div>
------------------------	--

- ※1 Send the electronic file to the Leading School section, International Affairs Office, also submit the original print out with seal of supervisor 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