

(**Abroad** • Domestic) Internship report form (Student)

2015/11/27

(Year/Month/Day)

Name	Nesta Bortey-Sam
Laboratory	Toxicology
Year (Grade)	4
Internship institution	University of Saskatchewan and South Dakota state University
Internship period	Internship period: 10/05/2015 - 11/13/2015 (Departure Date from Sapporo: 10/03/2015, Arrival Date in Sapporo: 10/11/15)
Purpose	Internship

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

- The reason why you chose this institute

University of Saskatchewan (U of S)

I chose Toxicology Centre in U of S because I wanted to learn about the development of new and novel compounds and also make it easier for us to work on preparing manuscripts from our previous collaborations. Additionally, this internship will help me to see and know how to manage and coordinate multidisciplinary research (team). Having the internship in Prof. Giesy's laboratory will enrich my career and CV immensely, and give me a better chance of getting a Post-Doctoral Fellowship in other laboratories.

South Dakota State University (SDSU)

The primary purpose of my internship at the Department of Chemistry and Biochemistry, South Dakota State University, is to set up a method to analyze nitrosamines (human carcinogen) in drinking water by Gas Chromatography Mass Spectrometer (GC-MS). Additionally, because of the cyanide pollution in mining areas in Ghana and other countries, I will also learn about techniques involved in detection of cyanide, its metabolites, and cyanide therapeutics. This internship will give me an opportunity discuss face-to-face with Prof Logue about Post-Doctoral Fellowship in SDSU and will also greatly enrich my career.

Long term goals of Internship

This internship activity has developed me internationally by teaching me diverse ways of dealing with or managing environmental and toxicological issues other than the techniques and knowledge I have gained in Hokkaido University over the years. After the training, I gained good research experience and collaborations which would be applied in creating awareness and curbing environmental pollution in Ghana and other countries.

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

University of Saskatchewan (U of S)

I travelled to Prof Giesy lab in University of Saskatchewan, Canada from October 5-14, 2015 for an internship program which even strengthened our collaboration. During my stay I attended the Canada Ecotoxicity Workshop (CEW), seminars, performed experiments, and had several discussions with Prof Giesy about possible job offers or postdoc fellowships.



At U of S



Sample preparation

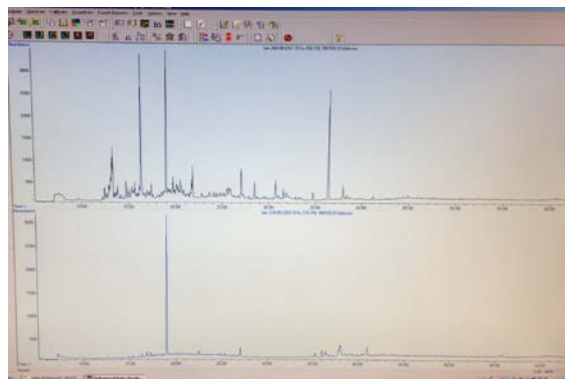


Sample purification

I was able to analyze for polychlorinated biphenyls (PCBs) and polybrominated diphenyl ethers (PBDEs) in sea lion samples during my stay. Prior to sample analyses, I

1. Extracted (using 1:1 dichloromethane: hexane)
2. Cleaned up sample
3. Analysed by GC-MS

Complete results (data) of this research is not ready yet as it is still in progress. Below is a chromatogram obtained from PCB analysis.



Chromatogram for PCBs analysis

South Dakota State University (SDSU)

On October 24, I left U of S for SDSU for the second part of my internship. I got to the lab on Monday, October 26, and had a discussion with Prof Logue, during which he assigned me duties. He gave me a tour of his lab and introduced me to his students, postdoc and lab manager. My research was to develop a method for the measurement of nitrosamines in drinking water. We ordered standards to be used for the experiment and I was trained on how to use the GC-MS.



At SDSU



performing experiment

Research started right away and at the end of the 3 weeks, I was able to identify the target analyte and also modified the method to obtain the sharper and high intensity peak. However, I could not complete the task of getting a good concentration factor (recovery) because of a few experimental challenges. I discussed with Prof Logue and he explained more and taught me ways to solve those challenges. We also had progress reports every week to discuss about our research.

- What do you think the positive impact of the activity will have on your further research, student life and career path?

The positive impact this activity will have on my future research, student life and career path are:

1. Prepare 2 or more manuscripts from this internship.
2. Extended my collaborations even further beyond Profs. Giesy and Logue's labs.
3. Enriched my CV which will also help me in getting a job/fellowship.
4. Contributed to the development of a method for identification of nitroso-diethyl amine (a carcinogen) in drinking water which would help contribute to the concept of One Health.

- Advice for your junior fellows

This is a great opportunity to strengthen collaborations, get jobs/fellowships, and have first-hand experience/information about research activities from other labs/institutions. I grabbed it with both hands and advise every student to do same. Learn as much as you can and ask as many questions as possible.

Approval of supervisor	Institution • Official title • Name Hokkaido University; Professor and Vice Dean; Mayumi Ishizuka <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