

Reports of Visitors

SAKURA Science Plan

in Asia International Institute of
Infectious Disease Control,
Teikyo University



SAKURA SCIENCE PLAN



Name: Minh Hang Nguyen

Country: Viet Nam

Department: Research Biomolecular for Infectious Disease
National Hospital of Pediatrics (NHP)

I am very glad to participate in the Sakura Science Plan. This program is a good opportunity to help me learn and experience a lot for my job. It's very interesting and useful. New technologies and protocols are updated. Teachers are enthusiastic, and the lectures are very interesting. Besides, I also got to visit departments in Teikyo University and Teikyo University Hospital, it has helped me to know more about the working style of Japanese people.

I'm really interested in the technical process applied in the laboratory and the methods to detect virus and bacteria. In addition, I also believe that specific guidelines for biosafety in laboratories are essential. Moreover, the interactions with the staff of Teikyo University and Teikyo University Hospital will be an avenue for building multidisciplinary research collaborations.

- ❖ **My job in NHP:** Our work in the Biomolecular Laboratory include DNA/RNA isolation, and real-time PCR method for detection of microorganisms. In addition, we also do multiplex real-time PCR to diagnose septicemia in children, involving 25 bacterial species, Luminex to diagnose respiratory tract infection in 18 viruses. Our research is conducted at the laboratory with collaboration in both domestic and overseas organizations (e-Asia project, ARDS, SeA...)
- ❖ **Contribution of this training to my job:** I have updated new technical protocols and learned more about biosafety knowledge, particularly in the laboratory. I have also understood the application of the biosafety guidelines during the tour in ADC. These guidelines will be useful in updating the biosafety manual of my department.



- ❖ **Collaboration plan with ADC Teikyo University:** I would like to take part in other research projects related to infectious diseases using biomolecular techniques.

Name: Nguyen Thi Ngoc Tran

Country: Hanoi - Vietnam

Department: Respiratory Department

National Hospital of Pediatrics

Position: Pediatrician & Ph.D student



It is a pleasure to join with this course. This is a good opportunity for me to improve further the skills, knowledge & experience in a good center in Teikyo University in Tokyo – the capital of Japan. At the same time, I learn experience & culture from Japanese, Filipinos and Lao.

Job Description:

Everyday, I examine and treat for patients. There are many patients with acute or chronic respiratory infection in my department. These diseases are caused by virus, bacteria, fungi or parasite. Also, we have other patients who suffer from pleural effusion, pneumothorax, congenital malformation, foreign body of tract respiratory, congenital diaphragmatic hernia, CCAM, pneumonia combined pulmonary artery hypertension, premature pulmonary hypoplasia & etc.

Benefits from SSP:

Now, I am a Ph.D student in Military Academy of Medicine. I research infectious factors of severe pneumonia in children due to virus & bacteria, so I need study these content: virus study IL-8 activity by neutrophil chemotaxis, cytokines by qPCR; isolation of RNA/DNA; functional analysis of human neutrophils; biomaker of bacterial infections diseases. This training is helpful to my study.

On the other hand, I can update my knowledge about biosysafety, patient safety, biorisk control, pharmacy, epidemiology, molecular techiques for detection of virus, bacteria, TB & fungi to combine the clinic and laboratory. I learned many useful lectures.

Potential Collaboration:

If possible, I would like to collaborate with ADC Teikyo University for my study.
(For example: theory, experiment, estimate & public my study results)

Summary Report of Sakura Science Plan



- ❖ **Doan Thi Mai Thanh, PhD, Pediatrician.**
- ❖ **Vice Head of General A Department,** National Hospital of Pediatrics, Hanoi, Vietnam

- ❖ **Summary of my training course in ADC Teikyo University:**

Biosafety at ADC by Dr. Ito, Biosafety rule by Prof. Suzuki and rounding around Teikyo University Hospital to experience infectious disease control activity in Teikyo University Hospital by Dr. Matsuga were so useful for me. I could listen to lectures on theory and witnessed how Teikyo University Hospital staffs do and coordinate in practical at hospital and laboratory in infection control. It were really good experience. Lecture of Dr. Inoue on Epidemiology was comprehensive. Lecture on clinical support in Africa by Dr. Kato provided us with more knowledge about Ebola virus (guideline, experience in treatment.....). Lecture of Prof. Shoji Kawachi about ARDS cases due to Influenza Infection in Vietnam was also Interesting. He provided us how to approach with such situation. Rounding around Teikyo University Hospital and university on many different general topics help us to more understanding about your Teikyo University Hospital and Teikyo University. Visiting TB research institute guided by Prof Suzuki and Dr Ito were so interesting and useful. Prof. Suzuki, Drs. Suzuki and Sugamata taught us some new, useful molecular technique....



- ❖ **My job in NHP hospital, Vietnam:** I am working at General A Department. My Job is to examine in and out-patient, consult difficulty and severe patients, do some office works, do research, write articles, write lecture...
- ❖ **Contribution of this training to my job:** Teikyo University Hospital' biosafety practical in hospital were so helpful in my department. I will present such knowledge and experience to my director, head of my department and head of infection control in order to apply it my department and hospital also. Each lectures provided us more knowledge, more understanding what you are doing in research and practical in laboratory and hospital. Rounding around Teikyo University Hospital and Teikyo University in difference topic let us have more understanding about Teikyo University Hospital and Teikyo University, we had opened our eye with such professional thinking and working environment. Even though, I am not lab technicians but learning about some molecular and biology technique and knowledge were also interesting and useful for me: more understanding about technique, knowledge and also give me a passion for scientific research.
- ❖ **Collaboration plan with ADC Teikyo University:** At present, we received many patients with atypical pneumonia - *M.pneumonia*, *C.pneumonia* (from 8/2014-9/2015 - we had more 100 patients). And we treated by marcroliid as guideline but they did not improve or slowly improved. So we had to change in to Quinolon. We wondered why: the incidence of apical pneumonia resistant to macrolid is so high, why it can atypical bacterial can resistant to macrolid (consider the dose and gen changes...). So we would like to collaborate with Teikyo University to do research on such topic. *H.Influenza*, *S.pneumonia* also have same situation...

Summary Report of Sakura science Plan

Name: Mis Arounapha Vongdouangchanh

Department and Institute: National Center for Laboratory

Country: Vientiane, Lao People's Democratic Republic (Lao PDR)

Epidemiology and Position is Deputy of Bacteriology Unit



We have two Laboratory Section: such Bacteriology Unit and Serology- Virology Unit

I do work at Bacteriology Unit .That's Job experience

- I work at bacteriology I identify and isolated the causative agents of diseases such as Nosocomial Infection, diarrhea, acute respiratory , pus, body fluid, urine, discharge vaginal...etc
- Molecular typing of pathogenic *E. coli* (*ETEC*, *EHEC*, *EPEC* and *EIEC*).
- PCR testing for *Shigella*, *Salmonella*, *Vibrio Cholerae*, *Plesiomonas shigelloides* and *Campylobacter*.
- Responsible to confirm the bacteria results for hospitals and health centers in the whole country.
- Accompany with epidemiology staff to the outbreak area to collect specimens.
- Instruct provincial laboratory technician and epidemiology staff to be able to collect specimens, doing rapid test and do some basic testing.
- Set up Bacteriology laboratory at the province and district level as required
- Teaching at the faculty of health science



- Summary of your training in ADC Teikyo University

The topics for each lecture were mostly beyond my field to study in molecular biology but they all contribute to how we can improve public health using clinical and laboratory methods all lectures made sure the topics were easy to understand and patiently answered all our questions the lecture program was the best and Every Topics very important and very usefully Some lecture was difficult to follow it seems faraway from my knowledge .

- ❖ Contribution of this training to your job

- Got new Experience, knowledge and high technology from Sakura science plan (SSP)
- Harmonized with Japanese, Vietnamese and Filipino's culture , new knowledge technical laboratory

- ❖ Collaboration plan with Asia international Institute of Infectious Disease Control Teikyo university

- Research cooperation
- Technical exchange

Training of Biosafety and Updated Molecular Techniques for Detection of Virus and Bacteria

Summary Report

Date: 151203

INEZ ANDREA PASTOR MEDADO

Head, Research Section (Science Research Specialist II)
Molecular Biology Laboratory
Research Institute for Tropical Medicine, Philippines



Summary of the training

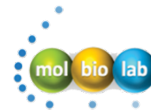
- The training program covered various disciplines that deal with infectious diseases to improve public health. Each session was taught or facilitated by experts in their respective fields. Sessions consisted of the following:
 - Lectures on biosafety, infection control, and infectious disease research using clinical, epidemiological, and laboratory methods
 - Tours of the different departments in the university and hospital and a visit to the Research Institute for Tuberculosis and the JST Miraikan Science Museum
 - Laboratory techniques at ADC: neutrophil chemotaxis, qPCR, PAS strip for molecular detection, and virus plaque assay
- With two to three sessions every day, the program is light and not difficult to follow. The topics for each lecture were mostly beyond my field of study in molecular biology but they all contribute to how we can improve public health using clinical and laboratory methods. All lecturers made sure the topics were easy to understand and patiently answered all our questions.
- The lectures on infectious diseases were most interesting for me: measles, Influenza H5N1, and tuberculosis. The professors gave comprehensive talks on the clinical, epidemiological, and molecular aspects of the disease.

- ***Current responsibilities***
 - Research on emerging and re-emerging infectious diseases focusing on molecular diagnostic testing and molecular epidemiology
 - Facilitate training programs on molecular techniques for infectious disease diagnostics and research
 - Routine molecular diagnosis for outbreak response to emerging and re-emerging infectious diseases (MERS-CoV, Influenza, Ebola, etc.)
- ***Contribution of SSP Training to job***
 - Adopt new biosafety practices and facility improvements to the laboratory and hospital
 - New perspectives on infectious disease research, especially in coordinating clinical and laboratory methods
- ***Collaboration plan with ADC Teikyo University***
 - Strengthen current collaboration on cytokine study and develop other research from that project
 - Collaborate on host defense mechanisms of infectious diseases



2015-12-03

Hannah Leah E Morito | Philippines



Molecular Biology Laboratory – RITM
(Science Research Specialist I)

Training at Teikyo University

“The course on training of biosafety and updated molecular techniques for detection of virus and bacteria as conducted by the ADC provided us with several insights, not only in conducting research but also in several aspects of medicine, public health, and clinical healthcare.

“The flow of the schedule also makes the lectures and the exercises we had make a distinctive and lasting impression on us.

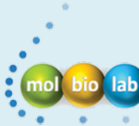
“Some of the notable lectures I heard were the lectures in public health and epidemiology, research on environmental fungi in the International Space Station, functional analysis of human neutrophils, and severe ARDS cases due to flu.

“Getting to see the beautiful campus and awesome facilities in the hospital and several laboratories is truly an amazing experience during the first two weeks of our stay in Teikyo University. In our second and third week we had lectures and training workshops in the laboratory, which I found very fascinating and very insightful as well. We were also able to have an opportunity to go out and visit several institutions such as the Miraikan Science Museum and the Japan Anti-Tuberculosis Association in Research Institute for Tuberculosis and learn about their researches.”



CURRENT RESEARCH

I work as a Science Research Specialist I at the Molecular Biology Laboratory of RITM. I previously worked in serotyping the dengue virus for surveillance using reverse transcription real-time PCR (RT-qPCR) assay and now I am currently working on genotyping the envelope gene of the dengue virus in the Philippines.



I am also involved in molecular diagnosis of emerging infectious diseases such as Influenza and Middle East Respiratory Syndrome (MERS-CoV) using RT-qPCR.



CONTRIBUTION OF THIS TRAINING

Almost all of the lectures were notable. For instance, the lecture on severe ARDS cases due to influenza infection in Vietnam got us to thinking of how we can improve the methods that we use in the Philippines to diagnosing cases of flu for immediate treatment and prevention of death.



The lectures also provided us with better understanding of several fields that are not within the scope of our specialties, which will improve how we respond to situations with public health importance.



COLLABORATION PLANS

We should continue strengthening the cytokine research with RITM.

Also, since this training has increased my interest in doing neutrophil and host defense research, despite not having a very strong background on immunology, I think it would be a good idea to explore future collaborations on these areas.

Name: Neil Andrew D. Bascos, PhD

Country: Republic of the Philippines

Department and Institution:

National Institute of Molecular Biology and Biotechnology
University of the Philippines Diliman

Position: Assistant Professor

Deputy Director for Facilities and Resources



SSP Summary:

I believe that the Sakura Science Plan gives a very **comprehensive** picture of all the different aspects of the **capabilities** of **Teikyo University** and its partner institutions (e.g. JATA). The tours of the different **facilities**, and involvement in the **classes** and **experiments** allows participants to experience how it is to be a **researcher, student, and member of the Teikyo Team**. I greatly appreciate the time and effort that the faculty and staff of Teikyo have devoted to allow us this opportunity, and I hope that this leads to **closer ties and collaborative projects** between our institutions in the future.



Job description:

As Deputy Director for Facilities and Resources of the NIMBB-UPD, I am tasked to oversee the **proper enforcement of the rules and guidelines for maintaining Biosafety and Biosecurity** in our institute. As an Assistant Professor, I also take charge of different **research projects**, specifically focusing on **protein structure and function**.

Benefits from SSP:

It was very interesting to see the **meticulous** way in which these protocols are done here at Teikyo. In particular, I was impressed by the **strictness** with which **access to the restricted areas** was **controlled** at the ADC. The **ID monitoring system** and the **double door locking mechanism** (i.e. only one door may be open at a time) may be applied to our own BSL-2 laboratories. The use of a **raised platform** in the anterooms was also an effective **physical reminder** for shoe changes. I believe that these protocols are very efficient and we will try to adopt this system in our own institute.

I greatly appreciate the help that the faculty and staff of the ADC have given to allow us to **learn new laboratory techniques**. I was very fascinated with learning the protocols for **measuring chemotaxis and viral plaque assays** from **Prof. Suzuki's Laboratory**. Our research interests include the analysis of the **biophysical characteristics of proteins**. We currently study integrins, their **heterodimerization** and how they may affect **metastasis in cancer**. I believe we can adapt the protocols for **cellular motility** to our research and I hope we may **collaborate** with Prof. Suzuki on this.

Potential Collaborations:

- **ADC:** *Monitoring effects of integrin heterodimer formation on cancer cell migration*
- **Faculty of Pharmacology:** *Structural analysis of Philippine natural products and their target receptors*

