



Nurture of Creative Research Leaders
in Immune System
Regulation and Innovative Therapeutics

NEWS LETTER



number **10**
2018 summer



Cross Interactive Meeting

LGS 3rd year member Toshio Kanno

The Leading Graduate School (LGS) has students with various backgrounds: medicine, pharmacology, nursing science, to name a few. Six years ago, 1st year LGS members launched Cross Interactive Meeting (CIM) to make good use of this diverse cultures by sharing knowledge and experiences with others. Since then, volunteer LGS members hold CIM at a pace of every three to four months. The main topics of CIM are as follows: ① Introduction of research fields or articles of your interests; ② Presentation practice in English in simulated situations such as academic conferences or oral defense of the dissertation; ③ Progress report of dissertation research; and ④ Report of self-initiative or mandatory overseas trainings.

Advantages of participating in CIM include improvement of presentation skills, acquisition of new knowledge and feedback on dissertation research, and information exchanges necessary for studying abroad. Another good point of CIM is its voluntary nature. This way, students can join feely and easily. We can also fix the date depending on schedules of LGS intensive lectures or academic meetings so that as many students as possible can participate.

In future, we would like to make CIM as a place of communication not only to discuss about science, but also to ask questions more casually. Especially, it would be helpful to listen to stories of students who experienced overseas trainings, qualifying examinations, or oral defense of the dissertation in English.

CIM is usually about one to two hour long. I hope you can stop by whenever it is convenient for you, and ask any questions to clear up your concerns. We will continue holding CIM to provide opportunities for scientific discussion, communication, and others so that we can meet needs and requests of each student.



Organizing the “Advanced General Education” in 2017

LGS 4th year member Hiroki Furuya

The “Advanced General Education” is a course designed to obtain a new point of view and to broaden horizons of Leading Graduate School students. As a characteristic feature of this course, students organize the whole lectures, including selecting and negotiating with candidate lecturers. In 2017, I was responsible for organizing the class along with Baba and Yamamoto. With the help and advice from Prof. Tetsuichiro Saito, we were able to invite 14 foremost specialists with wide variety of topics: Medicine, Biology, Embryology, Public Administration, International Cooperation, Particle Physics, Art, Mathematical Science, Leadership, Behavioral Economics, Space Solar Power Systems, and Climatic Variation. All of the above lectures were special and stimulating, and enabled us to deepen our knowledge in the various fields other than our specialties. Furthermore, they brought a lot of kind messages for us, including how to develop leadership and personal philosophy, and how to struggle and succeed in the competitive world. Those messages based on their rich experience, wisdom and their philosophy made the lectures even more distinct and attractive, and made us more motivated than ever. It was my great honor to organize this course, and I appreciate all the support received from everyone.



Introductory meeting for LGS 6th year members

LGS 5th year member Yuriko Yamazaki

On April 5, 2018, we held the introductory meeting for the new LGS students. This year, seven students including four international graduate students were selected as 6th year members. The program coordinators, committees, other faculty staff, and LGS students attended this meeting to welcome new members.

Ms. Yamaguchi, 4th LGS member acted as a chairperson. In the beginning, Dr. Tetsuichiro Saito, our program coordinator, welcomed new LGS students with the opening remarks and handed the certificate to each of new students. The Award for excellent graduate student was given to two 4th year members: Hiroki Furuya from Dept. of Allergy and Clinical Immunology and Wakako Kuribayashi from Dept. of Cellular and Molecular Medicine. After Yusuke Baba, a 4th year member, gave a general explanation of the program and its curriculum, LGS faculty members described the details of two unique features of our education program: Therapeutics Seminar and Training Program. The LGS requires students participate in International and Domestic Training Programs towards Certificate Completion. Three of LGS students, who joined the Training Programs last year, gave short reports: Hiroki Furuya on La Jolla USA training, Yusuke Isshiki on WHO training, and Hiroaki Kanzaki on Winter Camp. At last, all 6th year members gave self-introduction and expressed their goals for the graduate school and LGS program. The enthusiasms of highly motivated new students and passionate faculty members made this meeting successful.



Introduction of 6th Year Members



Maulana A. Empitu

⟨Affiliation⟩ Department of Nephrology

● Research Theme

Understanding the underlying process of glomerular disorder: how do podocyte behave and how to regulate that behavior?

● Goal

"We are only young once and never old twice." The adage is true not only for humankind, but also for podocytes - the cells at the outermost barrier of our kidney. Like neuron cells, podocytes are among the terminally differentiated cells that cannot regenerate. My project aims to understand the regulation of podocyte's behavior in physiological and pathological circumstances, in particular during the progression of glomerulopathy. My research seeks to address the question of how the *husky* podocyte becomes old, frail, and finally dies? Could we halt this process?

● Message

I believe that becoming a member of LGS is a special opportunity to learn and network together with other young-enthusiastic scientists. The offered courses and laboratory rotation have brought a value that I might not receive in any other program.



Ika N. Kadariswantiningsih

⟨Affiliation⟩ Department of Nephrology

● Research Theme

Podocyte and immune system crosstalk in the progression of glomerulopathy

● Goal

I enjoy watching movies. I define a good movie as a story with balanced and diverse characters. As in a good movie, the analogous balance is also required to keep the immune system in a beautiful state. In this project, I aim to reveal the story behind the unharmonious immune system in glomerulopathy. I hope this will give some clue about how to intervene in the immune imbalance in glomerulopathy and to prevent the deteriorating finale called end stage renal disease.

● Message

Answering science question is a never ending story. So, this will be a long journey. However, I believe the journey will be fun with the diverse characters in LGS. Let us make the story together.



Alimu Yikelamu

⟨Affiliation⟩ Division of Bio-resources, Medical Mycology Research Center

● Research Theme

Tolerance Induction of Polyhexamethylene Biguanide on *Paecilomyces lilacinus* Strains

● Goal

Paecilomyces lilacinus, a typically soil-borne and saprobic fungus, is an etiological agent of patients with compromised immunity and insect infections. The broad-spectrum antimicrobial biocide polyhexamethylene biguanide (PHMB; polyhexanide) is a high therapeutic index; it is widely used in clinics, household and industry. Recently, we have found a fungus to contaminate the product containing PHMB, and this isolate was identified as *P. lilacinus* based on morphology and phylogeny. To elucidate this mechanism of resistance, I want to study the induction of PHMB resistance on *P. lilacinus* strain. I hope that the research on this resistance mechanism can become the basic reference for the research and development of PHMB products.

● Message

I am very honored to be an LGS member. Becoming an LGS member is a great opportunity to learn and conduct our research with fresh ideas, based on communicating with the finest researchers from all over the world.



Sudip Kumar Paul

〈Affiliation〉 Department of Regenerative Medicine

● Research Theme

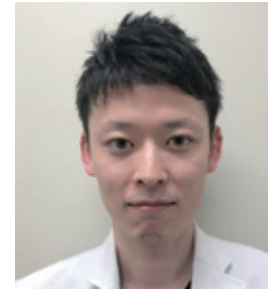
Development of novel *in vitro* model for atherosclerosis from progeria derived iPS cells.

● Goal

I found my profound interest in the mechanism of aging, particularly vascular aging in progeria or Werner syndrome patients. These are rare human inherited disorders, characterized by premature aging followed by the early onset of aging-associated diseases including atherosclerosis. My research purpose is to develop a novel *in vitro* atherosclerotic model with these patient-derived induced pluripotent stem cells (iPSCs) leading to the therapy for vascular regeneration and drug discovery for vascular disorders as well. My ultimate goal is to enrich my knowledge and capabilities in the vast field of medical science and to contribute to society with regenerative medicine.

● Message

Joining the LGS family is a great opportunity to conduct research with the guidance of wonderful mentors and share knowledge with world's finest graduate students in diverse fields, which stimulates me towards my dream of being an independent researcher.



Manato Yasuda

〈Affiliation〉 Department of Neurology

● Research Theme

Evaluation of immunoadsorption plasmapheresis for myasthenia gravis, and so on.

● Goal

My research interest is the pathogenesis of myasthenia gravis (MG). Patients with MG are divided into 3 groups: anti-acetylcholine receptor antibody-positive MG (AChR MG), anti-muscle specific kinase antibody-positive MG (MuSK MG), and double seronegative MG including anti-low density lipoprotein receptor-related protein 4 antibody-positive MG. In the case of AChR MG, it is considered that complement activation damages postsynaptic membrane at the neuromuscular junction, reducing the number of AChRs in recent years. Therefore we begin to treat with the complement inhibitor eculizumab for AChR MG. However, regarding MuSK MG and seronegative MG, many parts remain unexplained. I will research the pathogenesis of MG, and it will lead to a new way to treat MG.

● Message

It is an honor to be able to participate in this program. I will do my best.



Kazuma Iida

〈Affiliation〉 Department of Allergy and Clinical Immunology

● Research Theme

Elucidation of the role of Ascl2 in the pathogenesis of systemic lupus erythematosus

● Goal

I belong to LGS as a 5th year doctor in the department of allergy and collagen. I would like to gain not only knowledge about research but also knowledge and various experiences to other fields. As for research, I am no better than an amateur. However, I am very interested in the field of immunity, regarding which many things are unknown. I would like to learn properly in this program.

● Message

I think that this program will be a very good experience because there are many lessons and activities that are not available for a regular graduate student.



Yohei Yamauchi

〈Affiliation〉 Department of Gastroenterology

● Research Theme

Sorry, my research theme has not been decided. My LGS activities will start from next year.

● Goal

Now I am engaging in clinical medicine. In LGS, I hope to obtain knowledge in a wide range of fields, such as basic medical sciences, which forms the foundation of clinical medicine. As half of 6th year LGS members are foreign students, I want to actively interact with them to improve my English conversation skills and learn their cultures. I will select my research theme that can connect to clinical medicine and contribute to my future activities as a gastroenterologist.

● Message

My activities as a LGS student start next year. I will do my best to catch up.

Self-initiative Overseas Training

LGS 3th year member Takuya Nakagawa

From March 3 to 17 2018, I visited two research institutes as the self-initiative overseas training with a financial support from LGS: National Institute of Health (NIH) and University of California, San Diego (UCSD).

I visited Prof. Carter VanWaes lab in NIH first. Partly because it was my 2nd visit to his lab since the LGS oversea training in 2015, I could spend more meaningful time than before. This time, I learned how postdoctoral fellows actually work on their research in the lab, and also had an impressive lecture by Dr. VanWaes on his research using “The Cancer Genome Atlas (TCGA), a free access database of genomic data for almost all cancer types. He explained how they analyze comprehensive genomic analysis of head and neck cancer. They started a new approach using not only head and neck cancer data but also that of several kinds of cancers. As a result of the integrative analysis, they found out the clear heterogeneity of head and neck cancer. I found this new approach very useful for my dissertation research.

At their lab meeting, I gave a presentation on my research, “Epigenetic analysis of Human papillomavirus associated oropharyngeal squamous cell carcinoma.” The feedback from Dr. VanWaes was so tough, but helpful for my research.

After NIH, I visited Prof. Joseph Califano at UCSD. He conducts epigenetic analysis of HPV associated oropharyngeal cancer, which is exactly same topic as mine. Their experiments using Patient Derived Xenograft (PDX) model mouse was so impressive. PDX model is beneficial to study therapeutic responses to drugs. Using this model, multiple therapies can be tested against only one biopsy. If you can acquire pre- and post-treatment data from the human biopsy and xenograft tissues, you can potentially predict the effects of these therapies at once.

In addition, his lab has already succeeded in the ChIP-seq experiment using PDX model: therefore, it was such a pleasure that I could join the experiment on which postdoctoral fellows are working.

Dr. Califano kindly gave me a chance to give a presentation on my research and to have an interview for a post-doctoral position at his lab. After that, he said to have me as a postdoc after I obtain my PhD next March.

Through this visit, I could get a clear vision to research head and neck cancer using PDX models. I definitely would like to adopt this method into my research at the graduate school, and continue researching it even after I go abroad as a postdoc.

I am grateful for all the support LGS program staff has given me.



The presentation of my research (UCSD)



With Dr. Carter VanWaes (NIH)

Contact



Leading Graduate School at Chiba University

TEL.+81-43-226-2817 FAX.+81-43-226-2005

E-mail:lgs-jimu@chiba-u.jp

URL:<http://www.isrit-igp-chiba.jp>

1-8-1 Inohana Chuo-ku Chiba-city, Chiba 260-8670 JAPAN

News Letter number 10

■ Issued on SEPTEMBER 2018