Lab Spotlight: Yoshimoto Lab

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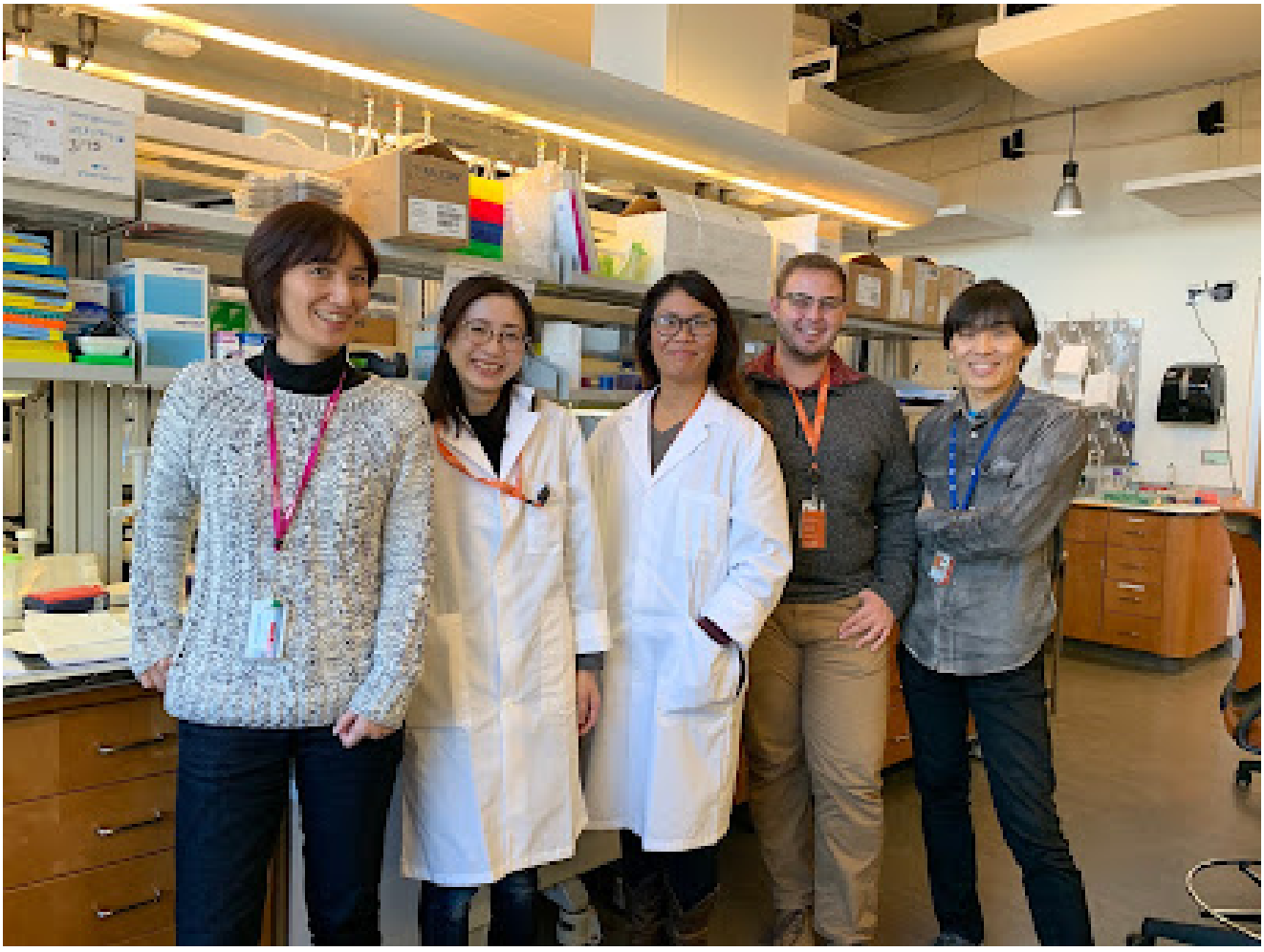
Deconstructing Blood Cell Research
Building the Hematology Community

Each month, Simply Blood spotlights a lab focused on the research of basic hematology, immunology, stem cell research, cell and gene therapy, and other related aspects. Get to know these different labs around the world! This month, we are featuring the Yoshimoto Lab at the University of Texas Health Science Center at Houston.



How long have you had your lab?

One + three years. I was a non-tenure track Research Assistant Professor at Indiana

University since 2011. I obtained my own lab space when I was awarded NIH R56 in 2015. I hired one post-doc and the two of us worked together. In 2016, I was awarded R01 and was recruited to my current position at University of Texas Health Science Center at Houston.

How many members make up your lab? Students/postdocs?
Five people. One Assistant Professor (my husband), 3 research assistants, and me. One post-doc just finished and returned to Brazil, so my lab is open for a new student/post-doc.

What is the major research theme of your lab?
Developmental hematopoiesis in the mouse embryo, specifically elucidating the developmental pathways of the first HSCs and innate-like B-1 cell during ontogeny.

What is the most exciting project in your lab right now?
We have recently reported that the hemogenic endothelial cells/HSC-precursors (pre-HSCs) mature into HSCs through innate-like B-1 biased state. Given the heterogeneous hematopoietic capacity of pre-HSC population, we are trying to segregate B-1 biased pre-HSCs from multi-potent HSCs by utilizing scRNA-seq, lineage tracing mouse models, and transplantation assays. We are using various lineage-tracing mouse models and accumulating the data suggesting the origins of various immune cells. These data will show the whole picture of HSPC and innate immune cell development in the mouse embryo!

What's your best approach to mentoring students in the lab?
I mentored clinical resident doctors at hospitals in Japan and students/post-docs at Indiana University as a senior researcher. However, mentoring students/post-docs as a PI is different from my previous experience. With more patience, I am trying to provide more organized (tailored) guidance step by step. I am waiting for my students/post-docs to become more proactive and to start leading their research by themselves.

What is the key to running a successful lab?
Sharing scientific curiosity and research goals. Making a good team. I think having a good role model in the lab (if possible) is the best to set up a desirable standard in the lab.

What facilities or equipment does your lab absolutely depend on?
Flow cytometry! Aria II, LSRII, and FACS Melody.

What has been your greatest challenge in managing your lab?
We are a small lab but still running several projects in parallel, so catching up all the data, prioritizing each project, and organizing big mouse colonies are my greatest challenges.

What was the most exciting part about starting your new lab?
I can do whatever research project I want (of course, although there is budget limitations and personnel). I love purchasing lab items and equipment as I like. I love to see my mouse colonies getting bigger. Actually, I love any actions of starting up my lab. Everything is exciting to me.

Does your lab attend the ISEH annual meeting?
Yes, I attend the ISEH Annual Meeting almost every year. It is a wonderful opportunity to talk with established researchers in the field and it is a good chance for me to see my friends from all over the world including USA (of course), Europe, China, Singapore and Japan. I plan to take my students/post-docs once they are ready for presentations.

What is the most beneficial aspect of ISEH membership for your lab?
Attending the annual meeting is the most beneficial aspect of the membership. The webinars are also excellent.

How do members of your lab celebrate accomplishments?
We have not celebrated a big accomplishment yet. Maybe I will take my team to a Texas BBQ restaurant.

Does your lab have any fun traditions?
Having a delicious birthday cake for each lab member’s birthday!

Momoko Yoshimoto MD., PhD
Associate Professor
Center for Stem Cell and Regenerative Medicine
Institute of Molecular Medicine
McGovern Medical School