Table of Contents

1. Opening

Koyanagi: Hello, my name is Michiyo Koyanagi. I am a post doc fellow at this institute. The iCeMS Crosstalk series presents two scientists each time, in a discussion format. Today I will be speaking with Dr. Mineko Kengaku, an iCeMS (associate) professor. Nice to meet you, Dr. Kengaku.

Kengaku: Nice to meet you, Michiyo.

2. Why Science?

Koyanagi: You have succeeded in the field of developmental neurobiology. I have some questions. When did you decide to become a researcher? Why did you make that decision?

Kengaku: To be honest with you, I had never imagined I would become a scientist when I was an undergraduate student. I majored in basic biology and zoology. At that time, I was vaguely planning to find a job at a company after earning my master's degree. , Then I entered graduate school, and I started a laboratory benchwork. Then I suddenly fell deep into science. I was so interested in many fundamental questions which remained to be solved. As soon as I had solved one question, I had a desire to tackle a new one. Perhaps, I decided to be a scientist when I decided to do postdoc abroad. At that time, I made up my mind to pursue science as long as I could, as long as I have the opportunity.

3. Fields of Research

Koyanagi: What research did you conduct during the postdoc?

Kengaku: I have always been interested in the shape of living creatures. The shape of animal bodies is well-designed for functional efficiency. Plus, they look really beautiful. During my postdoc, I searched for molecules implicated in patterning of the limbs using chick embryos.

After the postdoc, I got a junior faculty job at Kyoto University and started working on cell shape formation in the brain. Currently, using advanced microscopic techniques, our lab is focusing on the dynamics and underlying molecular mechanisms of neural migration and process arborization of neuron during development.

4. Finding a Path

Koyanagi: When I was a Ph.D. candidate, I was entirely focused on one single molecule phenomenon and I enjoyed it purely for the sake of the research. Why is it so? What's the mechanism of it? Clarification of such questions was my main focus. I didn't really think or even care about possible beneficial applications. Now I am studying about iPS cells in Yamanaka lab, applying iPS cells to regenerative medicine. My boss and the M.D. researchers are constantly thinking how we can utilize iPS cells in cell transplantation therapy among other applications. But these sorts of practical applications are difficult for basic researchers including me to imagine.

Is it possible to overcome these differences to bring basic research and applied science together?

Kengaku: It's a very good question and I don't have a clear answer to your question. I know Dr. Yamanaka is a medical doctor, and always thinking about applying his technology to therapeutic medicine. But I think everybody should have different interests and backgrounds. Some might be more interested in therapeutic medicine or applied biology, and others might be more interested in basic biology. I'm interested in basic biology. In my experience, I have never achieved anything just by myself. I have always been surrounded by excellent colleagues. But they all have different backgrounds and interests. Some sort of chemical reaction occurs by intensive discussions and collaboration with others who have different backgrounds and interests.

Those kinds of chemical reactions produce something totally unexpected if you do it just by yourself. Those are the most exciting and happiest moments that happened through my research career, and I shared joy and excitement with others.

I don't think you have to put yourself into some kind of framework. You are now studying iPS cells with your own motivation, and your colleagues should have different motivations. But by approaching the same problems from different aspects or different angles, you may be able to shed more vivid light onto the problems.

Is your field really competitive?

Koyanagi: Yes, very competitive. But I have to do.

Kengaku: Everyone has its own way of thinking. Even if many people are interested in the same problem, I think you can create your original research project.

Koyanagi: I hope other researchers don't think in the same way.

5. Work-Life Balance

Koyanagi: I heard you have a small child. Do you have sufficient time for your family on weekends?

Kengaku: Yes, I try to spend time with my family on weekends since I don't have enough time for my small child. Of course, the research and the happiness of my family are both important to me, and both take much time and effort. It is quite tough to balance between personal and professional life. I should say I am enjoying every minute of my life as a mother scientist.

6. Women in Science

Koyanagi: Especially in Japan, female researchers are not very common.

Kengaku: When I was an undergraduate student, female researchers were really rare. There was a lot more obvious prejudice against female scientists. I was quite insecure about what I was doing and kept asking myself whether I really wanted to continue this or not. However, I ended up continuing this. That is probably because I like science.

Do you have any difficulties as a female researcher?

Koyanagi: Now, it is very difficult for me to plan for the future. Conducting research requires time and hard work. In the future, to select the lifestyle is very difficult issue for me.

Kengaku: I often find many young female researchers are really anxious about their future, about being a scientist, as a female researcher. They seem to fear that they'll lose the happiness as a woman if they choose the life of a scientist. I'd like to tell them that it's not the choice between the two. You can be happy both as a scientist and also as a woman. You don't have to put yourself into some stereotyped framework. There is no age limit to get married or to give birth to children and so forth. I think you should do something you really want to do right now. If it's science, you should go ahead.

7. Closing

Koyanagi: Thank you very much for taking time to talk with me.

Kengaku: You are very welcome. Pleasure is mine.

Koyanagi: That will be all for the second iCeMS Crosstalk. Thank you for watching.

Directed by	iCeMS Science Communication Group: Kei Kano, Eri Mizumachi
Produced by	iCeMS Science Communication Group: Kei Kano, Eri Mizumachi iCeMS Int'l PR Office: Yutaka Iijima, David Hajime Kornhauser, Ayumi Hagusa
Edited by	iCeMS Int'l PR Office: Yutaka Iijima, David Hajime Kornhauser, Ayumi Hagusa
In cooperation with	CiRA Int'l PR Office: Akemi Nakamura, Saki Tamura