

THE PRISM

University of Hawai'i at Mānoa's e-newsletter on international education

HEADS OR TAILS? by Lois Kajiwara (www.manoa.hawaii.edu/international)

Back in 2000, the TV show *Dark Angel* featured Max, portrayed by Jessica Alba, a transgenic (genetically engineered) human being who was trained to be a super soldier. Max's DNA, being genetically augmented with feline DNA, gave her special abilities – enhanced eyesight and hearing, strength, speed, agility, and stamina – making her a "superwoman." Sounds improbable? Perhaps... but perhaps not all of it.



In the scientific world, the creation of transgenic animals has been achieved for quite some time. In 1999, glowing green mice were produced and more recently, in 2013, articles on glowing green rabbits, pigs, and sheep appeared all over the news. The scientist whose research played a big part in these accomplishments is Dr. Ryuzo Yanagimachi. With a career at UH Mānoa that spanned 40 years, he is renowned globally for his research in reproductive biology, especially his pioneering work with in vitro fertilization in humans, freeze-dried sperm technology, and the creation of the world's first cloned mouse.

Dr. Yanagimachi is the recipient of numerous awards and honors, most notably the 1996 International Prize for Biology, which is awarded in the presence of the emperor of Japan. He was inducted into the prestigious National Academy of Sciences in 2001 and also the National Institute of Child Health and Human Development's Hall of Honor in 2003, which recognizes scientists for exceptional contributions to the advancement of knowledge and improvement of maternal and child health. He is also on UH Mānoa's "100 Contributions," a list of remarkable achievements that have benefitted society, although he was surprisingly unaware of this honor until I asked him about it.



Dr. Yana accepting the 1996 International Prize for Biology.

Retired in 2005 from UH Mānoa, Dr. Yanagimachi (fondly nicknamed "Yana") is a Professor Emeritus, who at age 86 is busy continuing his research on the study of fertilization in mammals as well as fish and insects. I recently had the honor to interview this distinguished, yet unpretentious scientist.

Why did you decide on UH Mānoa for your career?

In 1965, Professor Robert W. Noyes (formerly with Vanderbilt University) joined the newly established UH Medical School as an Associate Dean and had asked me if I was interested in joining the Department of Anatomy and Reproductive Biology as an Assistant Professor. At that time, I was at Hokkaido University (Sapporo, Japan) after a four-year stay at the Worcester Foundation for Experimental Biology in Shrewsbury, Massachusetts as a postdoctoral research fellow. At Hokkaido University, I was a temporary lecturer and was not very happy about it. Although I could have returned to the Worcester Foundation, I chose UH for two reasons: first, the other faculty members that Professor Noyes had recruited and second, the good weather in Hawai'i!

What was your childhood like? Did you always want to be a scientist?

I grew up during Japan's involvement in wars, starting from the conflict with China. World War II ended when I was 17 years old. My grandfather, the son of a low-ranking samurai, started a trading business in Ebetsu, Hokkaido. Almost all of our relatives were merchants and talked about money all of the time. As a child, I felt differently and thought that money was not everything. During my grammar school years in Sapporo, my older brother and his friend took me to the nearby mountains in early spring to collect frog eggs and adonis flowers; in the summer we went to the same mountains to catch butterflies and many other insects. This was the first time I was exposed to nature. So yes, I was always interested in science, but I might have become an astronomer if I were stronger in mathematics.

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HEADS OR TAILS? (continued from page 1)

What has been your motivation?

I was sort of a slow starter. I was 38 years old when I got a faculty position at UH. Many of my other university classmates had appropriate positions much earlier than I did. I always thought that I needed to work hard and catch up to the others when I attained an appropriate research/teaching position. People may have thought that I was a workaholic, but because I was doing what I really enjoyed, I did not get tired even if I slept for only a few hours a night. (Chuckling.) Another motivation was that I felt it is a scientist's privilege to discover the secrets of nature. Unlike people, nature never lies.

What was your biggest challenge?

When I was in my early 20s, I was a student of Civil Engineering. Although I completed school, I wondered if I really wanted to devote my life to engineering. I could not forget the beauty of nature, so I decided to do what I truly felt passionate about. I had never taken any formal biology courses, so I self-studied basic biology and reentered the College of Basic Science at Hokkaido University. My other big challenge was studying abroad in the U.S. in the 1960s. At that time, there were not many Japanese people who were studying abroad.

You were the founding director (2000-2005) of the Institute for Biogenesis Research (IBR), which focuses on the study of reproductive biology and has a state-of-the-art Transgenic Core Facility. What are your thoughts on therapeutic cloning, which involves creating stem cells that are genetically matched to a patient to treat that patient's disease?



The idea is great, but I think it will still take many years to accomplish, although I hope that it will be quicker than I think!



*In Turkey, where Dr. Yana and Dr. Moisyadi of IBR collaborated with the University of Istanbul to create the world's first glowing rabbits and glowing lamb.
Photo courtesy of the University of Istanbul.*

Can the research be used to help save endangered species (such as the Hawaiian monk seal, orangutan, and giant panda)? Or what about bringing back extinct species (de-extinction)? There has been a lot of buzz in the scientific community about the frozen woolly mammoth that was found last year with its blood flowing intact. Could one successfully be brought to life?

I think that the best way to save endangered species is to protect their environments so that they can live and breed in the proper surroundings and be able to replenish their population without being hunted. As for the woolly mammoth, it is highly unlikely that the DNA is intact due to the fluctuation of the temperature of the ice. We should instead be paying more attention to the many different species that are disappearing quickly from the surface of the Earth.

What advice would you give to our students?

It is important to find work that you enjoy no matter what other people say, not work that you can tolerate.

Among your many achievements, of which are you the proudest?

I'm proud to be one of the pioneers who contributed to the basic knowledge of mammalian fertilization as well as the development of assisted fertilization technologies. My major work was the study of the process and mechanism of fertilization in mammals including humans, *not* cloning and transgenesis. Cloning and transgenesis are merely two by-products of studying fertilization. Before I entered the field (1960s), very little was known about fertilization in mammals because of the difficulty in handling eggs and spermatozoa in vitro (outside of the body), so I began to study fertilization using the in vitro fertilization technique I developed.

The research continues at IBR and Dr. Yana's legacy will live on for future generations to benefit from his accomplishments. When I asked him if it turned out to be a good thing that he wasn't strong enough in math to be an astronomer, Dr. Yana laughed and said simply, "Yes, it was definitely a good thing." But Dr. Yana also mentioned that he almost didn't work for UH Mānoa; it was the toss of a coin by the faculty recruitment committee that determined his loss of an open position at Hokkaido University and thus, his decision to accept the offer at UH Mānoa. He paused for a second – probably envisioning that memory – and then said happily, "It turned out to be a very lucky coin toss," with a contented smile on his face.

Speed Round with Dr. Yana

Favorite books? *All Creatures Great and Small* by James Herriot and *The Naked Ape* by Desmond Morris.

A person you admire? Dr. M.C. Chang, my postdoc mentor.

Favorite food? Anything, especially Italian and kosher foods.

Places you like to visit? Italy, Alaska, and Hokkaido.

UH MĀNOA NOW HOME TO A CHINESE FLAGSHIP PROGRAM by Cyndy Ning (www.ccs-uhm.org)

UH Mānoa’s College of Languages, Linguistics, and Literature has been awarded a significant multi-year grant by the federal government’s National Security Education Program to establish an undergraduate Chinese Language Flagship Program on the Mānoa campus. One of 27 Flagship programs at 23 institutions across the U.S., Mānoa’s Chinese Flagship will serve Mandarin language learners who commit to achieving professional-level proficiency in Chinese language, while pursuing degrees in the academic majors of their choice.

The Chinese Flagship will offer innovative, individualized curricula to students who may enter the program with any level of proficiency. The program’s goal is to allow students, within five years for beginners and less for more advanced learners, to gain dual strengths both in their chosen career domain as well as in comprehending, speaking, reading, and writing Chinese at a professional level.

The program provides a rich array of carefully designed, articulated, and customized curricula at appropriate levels, with cutting-edge Chinese language pedagogy throughout. There are multiple proficiency entry points for participants from novice to advanced levels. The program follows best practices in language instruction and assessment, including the integration of technology and blended learning, and will collaborate with a large number of Chinese speaking UH Mānoa faculty on content-based instruction in various China-related disciplines and fields. The program also offers a well-designed tutoring system and a rich extracurricular environment to facilitate the learning of Chinese language and culture.

After completing a customized UH curriculum, Flagship students will study from one semester to one year at a Flagship Overseas Center in Nanjing or Tianjin, as well as undertake a professional internship in China. Progress in the program will be assessed at every stage through a combination of self-assessment methods and standardized assessment instruments.

Graduates of the program will be Flagship Certified Professionals who possess:

- Professional-level language proficiency in Chinese
- Advanced cultural skills and experience living and working abroad
- Intercultural insights for careers in federal government, global business, nongovernmental organizations, and other fields

The target number for the first cohort of recruits for AY 2014-2015 is 15 students; more than triple that number have expressed interest.

Mānoa’s Chinese Flagship Program will be based in the Department of East Asian Languages and Literatures (EALL), and directed by incoming faculty member Madeline Spring (left photo), who has experience running the Flagship program at Arizona State University. She will be assisted by EALL’s own Song Jiang (right photo), Haidan Wang, Stephen Tschudi, and others. The Flagship advisory committee will also include Graham Crookes of the Department of Second Language Studies and Cynthia Ning of the Center for Chinese Studies and the Confucius Institute.



There are 12 Chinese Flagships in the U.S. In addition to Chinese, Flagship programs also support training in Arabic, Hindi-Urdu, Korean, Persian, Portuguese, Russian, Swahili, and Turkish. The nation’s only Korean Flagship Program is offered by UH Mānoa, also as part of EALL. UH Mānoa’s Korean Flagship was established in 2002, and now offers Bachelor and Master of Arts degrees in “Korean for Professionals.” Currently, there are 54 undergraduate and 13 graduate students enrolled.

With the establishment of the Chinese Flagship Program in 2014, UH Mānoa will proudly host two East Asian Flagships – a testimony of the strength and depth of its Asian language offerings.

UP CLOSE & PERSONAL WITH KELLI KAJIWARA (continued on page 4)



Kelli Kajiwara, a senior majoring in History, studied abroad for one semester in Korea through the MIX program. Below, she shares some of her thoughts about her experience.

Why did you choose Soonchunhyang University? Were you happy with your choice?

I felt that Soonchunhyang University offered a lot of benefits that the other universities in Korea did not. Also, it is located in the city of Asan, which is a very rural area, and I was interested to see this aspect of the country. I’m happy with how my choice turned out because the school’s international program integrates Korean students and international students well.

What was your favorite class?

I enjoyed taking Korean literature because my teacher was very knowledgeable.

What did you do in your spare time?

Just hung out with my roommates or exchange partners. In the Asan area, there are movie theaters, a bowling alley, shopping malls, etc. Some weekends we would head up to Seoul and have our little adventures!

Which places did you find interesting?

Nami Island (where they filmed scenes for the popular Korean drama *Winter Sonata*),



UH MĀNOA INTERNATIONAL EDUCATION LINKS

Office of International and Exchange Programs:

Faculty and Scholar Immigration Services: <http://www.hawaii.edu/fsis>

International Student Services: <http://www.hawaii.edu/issmanoa>

Mānoa International Exchange: <http://manoa.hawaii.edu/mix/index.html>

National Student Exchange: <http://www2.hawaii.edu/~nse>

Study Abroad Center: <http://www.studyabroad.hawaii.edu>

College of Education – International and Special Programs: <https://coe.hawaii.edu/research/international-and-special-programs-iasp>

Hawai'i English Language Program: <http://manoa.hawaii.edu/eslhelp>

JABSOM Global Health/Medicine Programs: <http://jabsom.hawaii.edu/JABSOM/admissions/globalhealthmedicine.php>

Outreach College – International Programs: <http://www.nice.hawaii.edu>

School of Architecture: <http://www.arch.hawaii.edu>

School of Travel Industry Management: <http://www.tim.hawaii.edu/default.aspx>

Shidler College of Business:

Full-time Global MBA program: <http://www.shidler.hawaii.edu/ft-mba>

Pacific Asian Management Institute: <http://pami.shidler.hawaii.edu>

William S. Richardson School of Law – International Programs: <https://www.law.hawaii.edu/which-program-right-you>

For more information, please contact:

**Office of International and
Exchange Programs**

(808) 956-2223

www.uhm.hawaii.edu/international



UP CLOSE & PERSONAL WITH KELLI KAJIWARA (continued from page 3)

Haeundae Beach, the Seoul World Cup Stadium (where the 2014 Dream Concert was held), and Gyeongbokgung Palace.

What did you enjoy about studying abroad?

Just meeting everyone was great. I not only made friends with Korean students; I made friends with students from Germany, Canada, Mexico, Japan, and other countries. After this international exchange experience, I definitely feel like the world became more open to me.

What was one of the highlights of your stay?

I was really touched when my roommate invited me and several other friends to her house. She was worried that we would be bored, but we all had a good time and I really appreciated that she opened up her home to us.



Were your expectations and goals met during your semester?

The main reason that I went to Korea was to improve my Korean speaking ability. I didn't get to meet this goal because the school was not prepared to teach Korean language classes, other than the basic level, to first semester international students who had already taken Korean language classes. However, I took it as a good opportunity to review the basics.

How has this experience prepared you for your future endeavors?

In such a short amount of time, I was able to build strong relationships with people. Before going abroad, I was a bit lacking in this skill, so I see it as a huge plus.

Now that you are back in Hawai'i, what do you miss about living in Korea?

The convenient public transportation system, inexpensive food, free museums, and the way people dress (business casual).

What advice would you give to someone who is thinking about studying abroad?

If you decide to study abroad, commit 100%. Be open to new experiences. You don't want to regret not doing things when you had the chance. Also, don't bring your personal problems from home with you because you shouldn't waste your time being sad or upset. Do your research on the country of your choice and select places you want to visit or activities that you would like to do.

