

# Feature

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Fostering long-term creativity and innovation with science and technology disciplines based on Ochanomizu spirit "Migakazuba"in the next generation of global leaders



# Let your dreams **Blossom at Ochanomizu Univ.**

**Commencement of the Program for Leading Graduate Schools** 

# **Message from President**

We are pleased to announce that Ochanomizu University launched a program entitled "Fostering long-term creativity and innovation with science and technology disciplines based on Ochanomizu spirit 'Migakazuba' in the next generation of global leaders." This program was selected by the Ministry of Education, Culture, Sports, Science and Technology in 2013 as a "Program for Leading Graduate Schools." Through this program, we aim to foster highly skilled female science researchers to become innovators with a global perspective and leadership who will contribute to the world for sustainable development. Since the establishment of our graduate school, we have encouraged our students to challenge to study in the different fields with faculties who like to support and cooperate with them. As a result, we have successfully borne fruit in producing many students who could receive doctor's degree. Actually, we have produced 10% of female doctors among all Japanese national fund universities. We hopefully keep to continue our efforts to foster more students who will be leaders to dissolve the problems caused in the human society.



Sawako Hanyu, Ph.D. President, Ochanomizu University

We would greatly appreciate your continued assistance to our program and students.

# **Our Mission**

To foster human resource to become global leaders in wide areas of industry.

### Q: What is Ochanomizu University Program for Leading Graduate Schools?

A: It is a five(5)-year degree program of doctoral Minor Course of Science and Technology for Global Leaders. It is collaborated by the Division of Advanced Sciences and the Division of Life Sciences.

## **O**: Who can participate?

A: First- year master's course students who belong to the Division of Advanced Sciences (Mathematics, Chemistry and Biochemistry, Physics, and Computer Science) and the Division of Life Sciences (Biological Sciences, Food and Nutritional Sciences, Human Environment Sciences and Genetic Counseling) and Senior who plan to enter those courses have a chance to take the entrance examination of this program. We open to graduated person those who are tempted to learn again. Since it is a five-year degree doctoral program, applicants must have decided to go to doctoral course at the time of application.

### **O**: What are the strong features of the course?

A: The program has 3 features ;

### 1. Reinforcement of Basic Science

To be an innovator, broad knowledge of basic sciences makes it possible to find and solve new problems. The program strengthens such basic abilities by putting some emphasis on physics, mathematics and computer science. All classes are taught in English

### 2. Strengthening Teamwork Capabilities

The most highlighted feature of our program is called PBTS (Project Based Team Study). This is an educational system to develop students specialty and interpersonal skills effectively through team study in which students with different backgrounds work together through friendly rivalry on the theme selected by themselves.

### 3. Strengthening Global Capabilities

To become a global leader, high level skills and abilities are required for language, communication and project management. The program strengthens global capabilities of students to provide such courses as Career Education, Leader Education, IT Engineering and Liberal Arts. All classes are taught in English.

### Message from Program Coordinator

In order to be a doctorate holder in the disciplines of science and technology capable of doing work that put both society and people in motion, you have to get a multifaceted perspective and the capacity to accept others in addition to the acquisition of a high degree of expertise. Based on the assumption that getting a high angle view and reinforcement of competencies as an individual are contingent on gaining opportunities to objectively see one's own situation, this program aggressively promotes to send students in the program to global internships at corporate research organizations both inside and outside of Japan. Use these opportunities to expand your filed to the larger global community, and then let's think what you can do for the society from that position. In this program, we assist you in polishing yourself in a collegial community of peers who share higher aspirations.

### **Industry-Government-Academia Collaboration**

Students will have our support in developing a practical career path through a program that opens out toward society with opportunities for students to study at leading companies and research institutes both in and outside of Japan.

### **Message from leader of industry**

The year 2020, when Tokyo will host the Olympics and Paralympics games, it will be a milestone year to achieve a 30% ratio of women holding positions of leadership which the Japanese government has declared. Women have been already taking active positions in various fields around the world. In Japan, in order to become successful as global leaders, we, women, need to step out from our familiar surroundings to diverse environments. It will widen your knowledge and experience; also it will help you to establish your own identity. I recommend you to acquire practical learning by taking advantage of this valuable opportunity provided by the Program for Leading Graduate Schools.



Hazuki Furukawa Program Coordinator Professor, Advanced Sciences Graduate School of Humanities & Sciences



Miyoko Kojima Department Manager Diversity Development Center, Personnel & General Affairs Group, Hitachi Solutions, Ltd.

# **Report on "Kickoff Symposium"**

Kickoff symposium entitled "What is required for doctorate holders who lead the diverse society?" was held with great success on March 3rd, 2014 at Ochanomizu University. About 150 people joined and enjoyed the symposium.

## Session 1: Keynote speech

Three top leaders gave us interesting speeches about requirements to be needed for a global leader.





### Prof. Atsuto Suzuki Director General, High Energy Accelerator Research Organization

"We have to do a lot of basic research, but we also keep having them fall into Valley of death. Basic research has its value, but in actual practice, a lot of the research you may be involved in makes you feel like you're falling down Valley of death. And it is these people who can manage to rise out from such valley that have the potential to realize significant growth."



### Ms.Yukako Uchinaga Board Chair, Japan Women's Innovative Network (J-Win) NPO Organization

"Rational thinking and logic are universally the same. To think rationally and being able to speak rationally are the first steps toward becoming a global leader."



### Mr.Luis López-Remón Senior Vice President, LANXESS GmbH

"What are important for successful global leaders are, an impressive knowledge base, high motivation to work with cross-cultural and cross-functional teams-and the most important things are excellent communication ekille

### Session 2 : Panel Discussion

"How to develop woman resources in Science and Technology who can maintain innovation in the society?"

There were active discussions from diverse perspectives by the panelists, which included program coordinators from Kyoto University, Osaka University, and the Tokyo Institute of Technology that have taken the lead in implementing the Program for Leading Graduate Schools, as well as women in leadership positions in the business world.





"People who are needed based on the trends and needs of the business world; initiatives toward human resources development"

Panelists; from right to left

Ms. Masako Konishi / Deputy Director, Conservation Climate & Energy Project Leader, WWF Japan Ms. Yoko Kobayashi / CEO, NTT Com CHEO Corporation

"Report on the program for Leading Graduate Schools of other Universities: how to develop human resources" Panelists; from left to right

Prof. Toshiyuki Awaji / Executive Vice-President for Education, Kyoto University

Prof. Isao Satoh / Director of Academy for Global Leadership, Tokyo Institute of Technology Prof. Tsuvoshi Kimura / Program Coordinator, Interactive Materials Science Cadet Program, Osaka University









### Voices from the audiences

In our survey, many of the attendants responded that the symposium was very meaningful. We also received the following encouraging advices. "I have high expectations this program to not just end as an academic discussion but will grow into practical use and lead to actual

results." (audience, non-student)

"Although I feel a PhD is necessary once inside a company, unfortunately it seems that few companies are interested in hiring those with a PhD. I hope that this program will create a complete change in this situation." (audience, non-student)



## PBTS activities | Started in March 2014

A pre-meeting to provide explanations on PBTS advanced equipment was held in March. Meeting with students and the faculty for the Study Commons has been held from April. Advanced equipment coursework with rotation among the laboratories started in June.



Session 3 : Short Talk "My story - Three methods to success in global industry without experience of studying abroad" Ms. Miku Hirano / CEO, Spicy Cinnamon Pte. Ltd.

"Science Graduate Programmes at the University of East Anglia" Dr. Steven Hayward / Senior Lecturer, University of East Anglia

### Session 4: Student speech "My resolution to study in the Minor Course of Science and Technology for Global Leaders"

### Messages from the Study Commons Teachers / Tell us your story of Studying Abroad



Yuki Yasumura Birth place: Kanagawa Prefecture Plant Molecular Biology

### What led you to be interested in science?

When I was in primary school, I cooked a leaf in alcohol and stained it with iodine to visualize starch. I was fascinated by the wonders of photosynthesis that were revealed by such a simple experiment. After that, I was always interested in science

### My time in the beautiful English countryside

When I was a postdoc researcher in the University of Oxford, I lived in an old market town called Faringdon, about 20 miles west of Oxford. The town was small but full of character. The late Lord Berners in Faringdon House was very talented artist and was also quite eccentric such that he dyed his pigeons pink-- today, if you walk around the town you can find pink toy pigeons on windowsills. I loved this town for its peaceful but lively existence. As it is located close to Cotswold, I often

went out for a 4-6 hour walk in Cotswold with other postdocs and students from the university. These walks always included lunch in a pretty village pub and afternoon tea in a cozy teahouse, and we chatted away the whole time.



Kazuharu Bamba Birth place: Osaka Prefecture Physics (Theory) (Particle Cosmology, Gravity Theory)

### What led you to be interested in science?

In my 1 year in high school. I got influences form the scientific enlightening magazines, books and TV programs on NHK.

### Taiwan is my second home country!

I studied at National Tsing Hua University, Hsinchu, R. O. C. (Taiwan) from 2008 to 2010. The Chinese characters used in Taiwan are the same as those that has been used in Japan until the end of the World War II. Therefore, even though the Japanese people do not understand the Chinese speaking including me, it is not so difficult to live there. Furthermore, it seems almost all people were very friendly to Japanese

people. The local food is basically the Chinese one, and the taste is mild and good. There are many sweets, and many Taiwanese people really like them very much. To my surprise, they enjoy the Oolong tea with sugar and milk!



At International Workshop (me, at the far left of second row from the bottom



# Essav

# Relay essays by program members

Deputy Program Coordinator, Dean of Faculty of Science Professor, Advanced Sciences, Graduate School of Humanities & Sciences Akio Sugamoto

I served as the Principal of the affiliated Ochanomizu University Elementary School from 2008 for three years. During that time, I recommended that the children "eat well, play well, and sleep well." Now, let's check to see if I also practice what I recommended. I would give myself high marks for "eating well." That's because drinking is also included in the process of eating. I enjoy drinking a lot. No matter how late I return home, I eat a full portioned dinner and drink one bottle of beer. I also follow that up with some wine or sake. I am also doing excellently with "sleeping well." That's because I sleep well and go to work late every morning.

The problem is "playing well." I have begun to feel that I need more physical energy to be able to play. Before, I used to be able to enjoy playing the violin even if I drank at night. But these days, I feel tired. I started playing the piano after turning 50 since I thought I could sit down during a playing, but I gave it up after a few years. That's because I never improved, no matter how hard I tried. I started learning calligraphy from a few years ago. I really got into it, because I could remain sitting without using too much energy, and I found that the more I drank, the better I wrote. But these days, I get tired preparing the ink and have therefore not done it for a while. There is one thing that I am able to enjoy without moving my body at all, namely, listening to music. I found that I really like Bach's Partita No. 6, and I've recently taken to listening to this as I go to sleep. I should have limited



myself to only listening, but I became interested in the continuous changing of the chords. I started on harmonic analysis, but gave up after one page. I have now reached a hopeless situation where

Quartet with the family (with me at the far right)

Student's life A Diary of Student

"HANAK®"

No.1



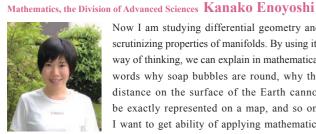
### Monday, Mar. x, 2014

I'm soooo happy to have received a wonderful piece of news! I applied for the Leading Program in Ochanomizu University the other day, and I received a letter saying that the program had accepted me. First of all, I want to say that I really appreciate for the Professor in my lab and my family both of whom encouraged me to enter in a Ph.D. course. Without their assistance. I couldn't live a full life in the current research work.

Project Based Team Study (PBTS) is one of the characteristics of the Leading Program. It is a wonderful try to communicatively study with graduate students who do research work in the other fields. Students make some teams, find a problem confronting us, solve it with our different specific knowledge or techniques, and finally report it. I gave a presentation of my proposed theme for PBTS to the examining committee. I wonder what theme the other applicants proposed for PBTS.

Next Monday, I will attend the first guidance meeting of the Leading Program. I'm looking forward to meeting with the other graduate students. I hope to get along well with them! (A)

Messages from the Students



Now I am studying differential geometry and scrutinizing properties of manifolds. By using its way of thinking, we can explain in mathematical words why soap bubbles are round, why the distance on the surface of the Earth cannot be exactly represented on a map, and so on. I want to get ability of applying mathematics to real-world problems by PBTS. And I think

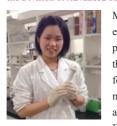
overseas training on this program is a great opportunity to broaden my possibilities.

### Computer Science, the Division of Advanced Sciences Yuyu So



I am interested in how to represent the meaning of sentences written in natural language. Linguistics and natural language processing have connections to mathematics, biology, physics, and many other fields. In this subprogram. I would like to broaden my horizons through the activities with students who have different interest.

### Chemistry & Biochemistry, the Division of Advanced Sciences Nanami Kawaguchi



My major is biochemistry and I make experiments every day about human pancreatic lipase that plays an important role in lipid metabolism. In this program, I want to focus on training myself for 5 years by learning science including out of my field, carrying out PBTS, studying abroad, and so on. I especially want to develop my English skills. It is hard for me even listening and

understanding the lectures in English now, but my goal is to transfer my mind in English. I'm looking forward to studying abroad too.

### Human Environmental Sciences, Tomoka Nagase the Division of Life Sciences



I'm majoring in environmental engineering, and studying the method of water treatment process. In PBTS, I feel fresh and inspiring, because we can learn the topics which I have never touched. It is very exciting to exchange opinions about various topics with other field neonle

### Self-evaluation of whether you are "eating well, playing well, and sleeping well"

I can do nothing unless I am forced into doing something by others, to join them in having fun. We created a choir group called the Makiba Men's Choir with the fathers from the elementary school. In April, we recorded eight songs at a studio. I hadn't been going to the practice gatherings, but I was forced into participating in the recording. Of course, I managed to get through the recording by lip-synching, but I still had a lot of fun. Another thing I am doing is a family performance.

Every October, we have a violin performance. I've been appearing in this for more than 20 years, but from a few years ago, I became unable to perform. Instead, my family decided to do a voice and instruments quartet. This has continued for the past few years. I arrange the music for our quartet. Last year, we performed

"Hitorigotobana" by LUHICA. This year, we will play the song from the movie Frozen. The family decides on the music and I have no say in it. Last year, I finished arranging the music a week before the performance. The family came together on the day before the performance to muddle through a short practice run. I'll have to be prepared for what the performance of this year will bring. In the end, although I am not able to have fun on my own, I suppose I can evaluate myself as "playing well" at a decent level, thanks to being forced into things by my family and friends.

I believe that "eating well, playing well, and sleeping well" are three hidden elements that are necessary for innovation. Therefore, I wish to say that I am doing excellently with regard to playing well. But to be able to say this, I suppose I need the help of others for the foreseeable future "



Self-written calligraphy



### Friday, Apr. x, 2014

I feel like my world has expanded since I started this leading
program in April. The weekly meeting for the program is like the
spice of my university life because it stimulates my interest
in science. In the guidance classes, each professor informed us
about quantum computers, computer science, theory of biological
evolution and Big Bang Theory. Their speeches made me very
excited imagining the beginning of the Universe, the origin of
creatures, and the history of evolution.
Also I felt great deal of respect for pioneer scientists when I heard
about the history of science. In addition, I thought that scientists
today have a great responsibility for our society.
The PBTS program will start from the next term. While I am a
little nervous, I am looking forward to it as well. I believe that by
taking small steps at a time, I will be able to succeed in the PBTS
program.
(Y))

# Information

### Event information

# October 2014 term "Minor Course of Science and Technology for Global Leaders" Information session for prospective students

Date & Time: July 9, 2014 12:20 p.m. - 1:10 p.m.

Location: Room 201, Inter-Faculty Building 2, Ochanomizu University

Eligibility: Persons who will be or wish to be first-year students of the Master's Program at Ochanomizu University as of October 2014.

Students who will be proceeding to the Doctoral Program at Ochanomizu University in the future.

Note: Students participating in this program are required to proceed to the Doctoral Program.

# Information session on the Summer Program in English for Overseas Students

August 2, 2014 Summer Program in English First day from 1:20 p.m.

Note: Details will be available on the website at a later date.

### Report of activities

March 3, 2014	Kickoff Symposium
March 14, 2014	PBTS Pre-Meeting
March 18, 2014	"Migakazuba" Pre-Kickoff (student-planned activities)
March 31, 2014	Introduction on Haptic Device
April 11, 2014	Start of PBTS Meetings
June 4, 2014	Essential Computer Science for Global Leaders I
	Lecture by Md. Khayrul Bashar
June 5, 2014	Essential History for Global Leaders
	Lecture by Midori Nishiura
June 20, 2014	Begin Laboratory Rotation

### Scheduled activities

July 9, 2014	Information session for prospective students
August 2, 2014	Information session on the Summer Program in English
	for Overseas Students
Early September 2014	Selection examination for October term students
November 15, 2014	Jointly hosted event with the NPO J-Win

### Learn more about us



Brochure written in English



Program for the Leading Graduate Schools website has been renewed! http://www-w.cf.ocha.ac.jp/leading/en/

### **Editor's notes**

The inaugural issue features an introduction to the program and a report on our activities. The title of "Bouquet" was decided by the staff, faculty, and students, all together. It is derived from the logo for this program. We hope that the students will grow as individuals and flower to full bloom through this program.



### About the logo

The bouquet of flowers in the shape of a circular cone represents the growth of each and every student that is admitted to this school. The pink flower in the center represents the major courses. Traditional education at graduate schools were designed to bring growth to these major studies. However, in this program, we placed the flowers representing physics, mathematics, and computer science, which provide foundational strength, around the central flower representing the major studies. Surrounding these are smaller flowers. which show the qualities that are required in a global leader, such as having a broad perspective and being a good communicator. Building a bouquet of flowers like this is the goal of the educational system of this program.

### **Ochanomizu University**

Fostering long-term creativity and innovation with science and technology disciplines based on Ochanomizu spirit "Migakazuba" in the next generation of global leaders

### Bouquet Vol.1

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