

KU Today

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Special Issue Faculty of Science

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KUToday is a biannual publication to present information about Kagoshima University to a wider international audience. Each edition will feature one faculty for prospective overseas students as well as other topics such as educational programmes, research and alumni information. Some articles are translations from the Japanese-language publication, Kadai Journal, upon which KUToday is loosely based. Any comments or suggestions about KUToday will be warmly received.

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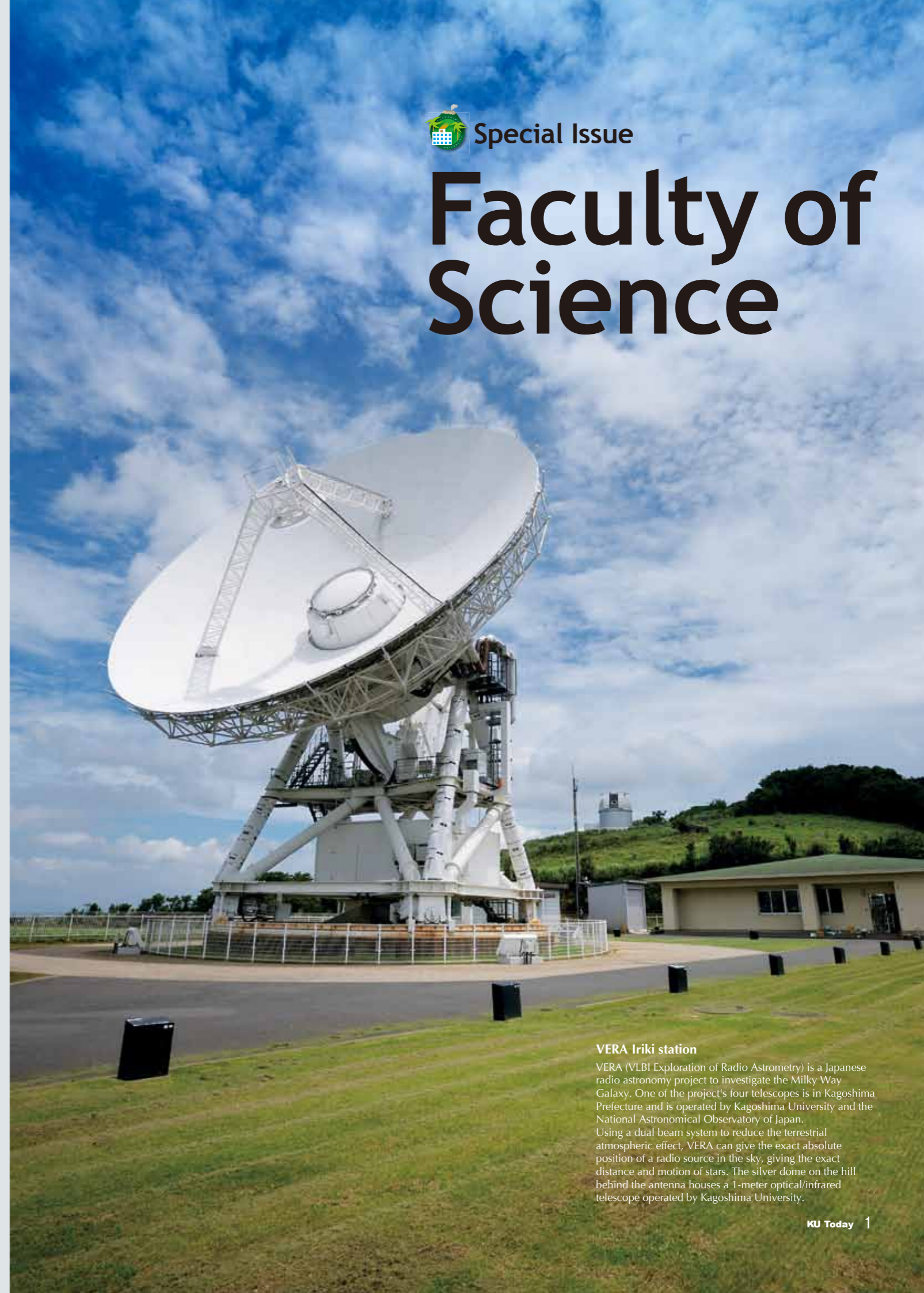
A Note on Names
Following convention East Asian names appearing in KU Today are written family name followed by given name.

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 Special Issue

Faculty of Science



VERA Iriki station

VERA (VLBI Exploration of Radio Astrometry) is a Japanese radio astronomy project to investigate the Milky Way Galaxy. One of the project's four telescopes is in Kagoshima Prefecture and is operated by Kagoshima University and the National Astronomical Observatory of Japan. Using a dual beam system to reduce the terrestrial atmospheric effect, VERA can give the exact absolute position of a radio source in the sky, giving the exact distance and motion of stars. The silver dome on the hill behind the antenna houses a 1-meter optical/infrared telescope operated by Kagoshima University.



Special Issue

Faculty of Science

<http://www.sci.kagoshima-u.ac.jp/ehsrc/index.html>

(edited by Taneichi Nobuhiro)



Welcome to the Faculty of Science

Tracing its origins back to 1901, the Faculty of Science is at the forefront of scientific research and education in the southern Kyushu region. To date over 6,000 have graduated including those with master's and doctorate degrees. The number of students from south-east

Asia has been increasing with some staying on as faculty members after completing their studies.

The faculty is one of the leading institutions in Japan for research into astronomy as well as earthquakes and volcanoes, supported by facilities such as the 20-metre radio telescope, which is run together with the National Astronomical Observatory of Japan, and the Nansei-Toku Observatory for Earthquakes and Volcanoes. Research into ecosystems from sub-tropical to tropical is another of our specialities. We have a long history of collaborative research in the field with institutions in Indonesia and an international

network for the protection of diversity of bio-resources in tropical regions of Asia has been established. In addition we are forerunners in biological science research using the next-generation DNA sequencers, in computer-aided research of mathematical science, and in theoretical physics.

The main aim of science is to solve the mysteries of nature and its fruits have led to practical applications in electronics, nanotechnology, biotechnology, and so on. However, more scientific effort will be needed in order for these technologies to develop in harmony with our environment.

Scientific research is an international endeavour performed over a cross-border network and so the Faculty of Science is happy to welcome young researchers and students from all over the world making use of Kagoshima University's friendly and international atmosphere.

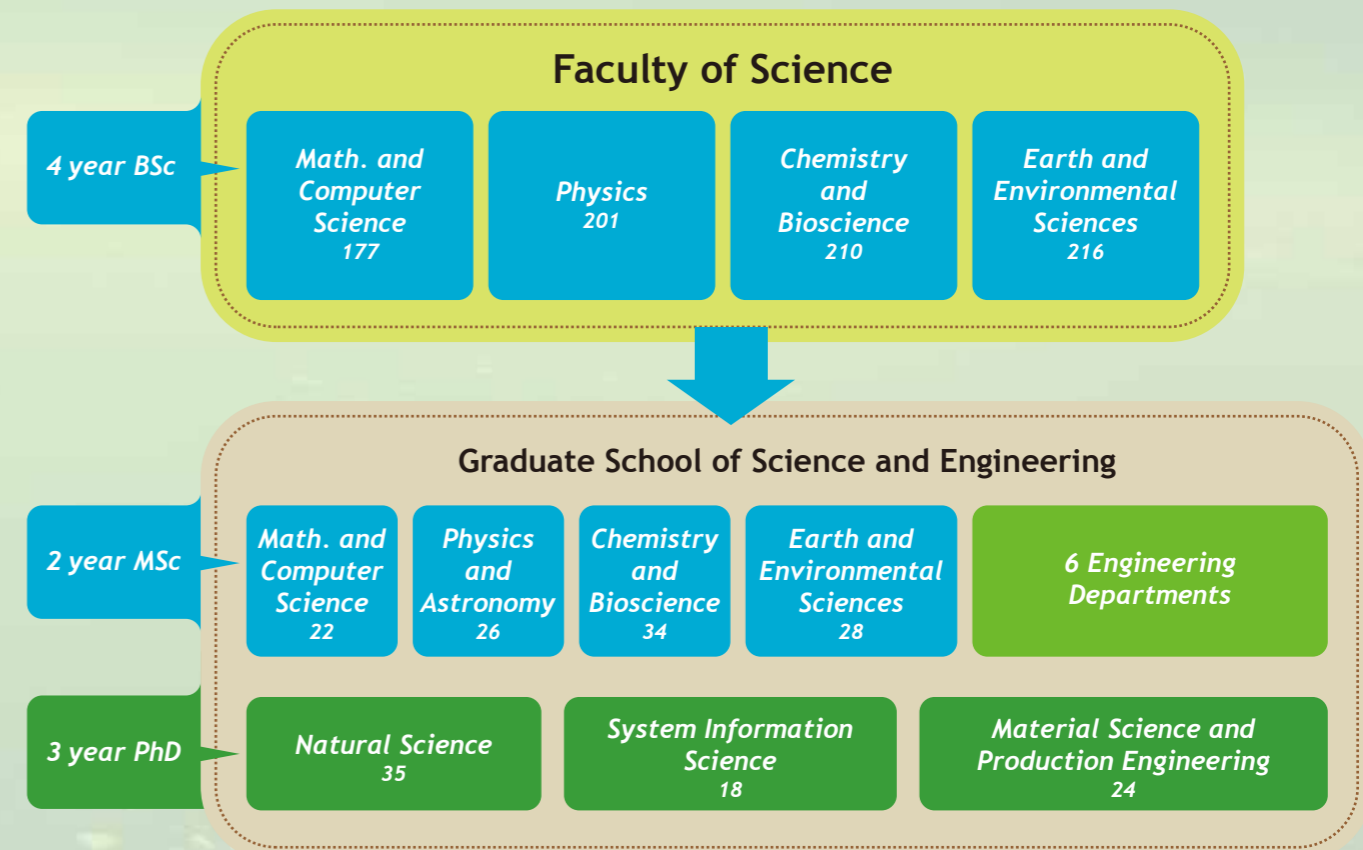
宮嶋 公夫
Dean
Miyajima Kimio

Study areas

Department	Sub-Divisions
Mathematics and Computer Science	Pure Mathematics, Applied Mathematics, Computer Science
Physics	Theoretical Physics of Solid and Complex Systems, Solid State Physics, Space Science
Chemistry and Bioscience	Molecular Photonics and Colloid Science, Organic and Biological Chemistry, Molecular Biology
Earth and Environmental Science	Geological Science, Arc Volcanology and Seismology, Environmental Analysis, Biodiversity

* For postgraduate studies, we have the Graduate School of Science and Engineering, which offers both MSc and PhD courses and is run in conjunction with the Faculty of Engineering.

Numbers of Students for BSc, MSc, and PhD Courses (as of 1st May 2011)



Number of Overseas Students in Faculty of Science and in Graduate School of Science & Engineering (Science Divisions)

	Countries	Undergraduate	Graduate
Asia	Bangladesh		1
	China	2	2
	India	1	
	Indonesia		1
	Korea	2	
	Malaysia		2
	Myanmar		2
	Taiwan		1
	Thailand		1
Americas	Guatemala	1	
Africa	Nigeria		1
Total		6	11




 Mathematics and Computer Science


Yokura Shoji

Professor, Pure Mathematics

My main research area is in the intersection of algebraic topology, algebraic geometry and category theory, in particular focusing on singular spaces such as singular algebraic varieties or stratified spaces. Examples of singular spaces are a figure-eight with the crossing point being a singular point, and two planes crossing along a line, which is the set of all singular points, etc. Every February since the year 2006 we have organized a four-day workshop called the "Algebra-Analysis-Geometry Seminar" inviting about 20 speakers, including some foreign mathematicians as well. As the title of the seminar suggests, topics of the talks are varied, covering research in algebra, analysis, geometry and other related areas. Our department is a member of the International Research Network "France-Japan-Vietnam Network in Singularity Theory".

Kim Dosung

BSc course in Math.

I am visiting Kagoshima University as a senior undergraduate on an exchange program with Kangwon National University, Republic of Korea. My major is pure mathematics, and I mainly study algebra, in particular, Galois Theory under the supervision of Professor Maruno. In their final year, math majors choose an advanced topic and study it in depth in their tutorial classes. This is the traditional and standard method in Japan. My time in Kagoshima started smoothly especially since Kagoshima University has many support programs for international students, e.g., airport pick-up service, student tutors, Japanese language programs, housing etc. Kagoshima is a small and a little bit old-fashioned city, but it's relaxing and I like it.



Aoki Satoshi

Associate Professor, Computer Science

My research area is a relatively new field in statistics, named computational algebraic statistics, which is attractive and rapidly developing. In this field, statistical models are characterized as a subset of the solutions of polynomial equations and are analyzed by algebraic tools. This new viewpoint is relevant to the entire theory of statistical modeling, and there is an essential difference to various algebraic methods used in statistics in the past, such as the theory of finite fields in the design of experiments, transformation groups and Haar measures in statistical decision theory, representations of finite groups in discrete data analysis, and so on. These applications of algebra are restricted to some specific fields of statistics. Specifically, I have been interested in Markov chain Monte Carlo methods for analyzing contingency tables since 2002. A contingency table is a table where observed frequencies are cross-classified by several characteristics. One of the aims of applied statistics is to investigate how well statistical models for data summarized in contingency tables fit. In classical statistical literature, various asymptotic theories such as approximation to the chi-squared distribution are used for this aim. However, many works have shown that large-sample approximations can be very poor for actual data analyses. Moreover, sometimes it is also infeasible to derive the exact distributions of statistics. In these situations, computational approaches such as Markov chain Monte Carlo methods are valuable tools. The key item in the Markov chain Monte Carlo methods is a Markov basis, which enables the construction of a connected Markov chain over a given sampling space. In the framework of computational algebraic statistics, the Markov basis can be computed as a Groebner basis of a toric ideal of polynomial rings. I have published several papers concerning the structure of the Markov basis for various models and efficient algorithms to compute Markov bases and so on.

Physics

Physics Division

The physics division researches the electronic structure and electronic and magnetic attributes of superconductors, magnetic materials and semiconductors using both experiments and theory. We are investigating the behaviour of complex systems in the natural world using theory and computers.

The division itself is made up of two courses, theoretical physics and solid state physics and both work in tandem on education and research. As well as promoting joint research with other academic institutions in Japan and overseas, we also have tie-ups with industry.

Keywords in our course education and research are
 Theoretical physics course: physical theory, solid surface physics, science of complex systems, nonlinear science
 Solid state physics course: low-temperature physics, magnetism, dielectrics, low-temperature condensed matter physics

Our facilities are fully equipped including apparatus to produce -269°C liquid helium and a superconducting magnet.



Lee Minju

BSc course in astronomy

The biggest advantage of doing the undergraduate course in the physics department is that the teaching staff are always on hand. They are available to help you whether you are having difficulties with your studies or whether you need to discuss something which is worrying you. From the third year, the course breaks into either physics or astronomy. Each course has a lot of activities and so it is possible to have many experiences to make your time at university fulfilling.



Astronomy Division

The astronomy division has 9 professors (including associated and assistant professors) and a few post-doctorate researchers (as of 2011). Many undergraduate and graduate students study astronomy and space science. Much research work is done mainly on radio astronomy and galactic astronomy. Major topics are related to star formation, late-type stars, galactic structure and kinematics, active galactic nuclei (AGN), and the property of interstellar matter (ISM).

We operate one optical/infrared telescope and two radio telescopes. We are developing an observation system and instruments for radio and infrared astronomy. Together with the National Astronomical Observatory of Japan (NAOJ) we investigate the structure and kinematics of the Milky Way Galaxy (MWG) with VERA, which is a unique facility to measure the distance and motion of many radio sources in MWG. Theoretical research on relativistic astrophysics and computer simulation on ISM is also carried out. Research on Earth's upper atmosphere including the development of a prototype satellite is another activity.

A Cooperative Graduate School with NAOJ and JAXA (Japan Aerospace eXploration Agency) contributes to our research and education.

James Chibueze

PhD course in astronomy

The two areas I am especially impressed with the Graduate School of Science and Engineering are in the supportive role of the faculty members and the collaborative efforts with industries. Baby birds strongly need the patient support of the mother bird in order to learn how to fly. In a like manner, the members of the academic staff prove very supportive in assisting the students to fly high in their research endeavours. Secondly, unused knowledge does not translate into wisdom, just as unapplied science would not give rise to technology. Thus, I am also impressed with the collaborative effort of the various science research groups with relevant industries where their new-found body of knowledge could become useful.



Chemistry and Bioscience

Chemistry and Bioscience has 16 full time members of staff doing research in bio-dynamics, biochemistry, organic chemistry and molecular photonics and colloid science, and aims to produce graduates who have balanced skills in both observation and technique. Here, we introduce two laboratories.

Uchiumi Toshiki

Professor, Bio-dynamics

and Kuchō Ken-ichi

Associate Professor, Bio-dynamics

We are aiming to contribute to solving food, energy and environment problems, by research centred on symbiotic nitrogen fixation in plants and bacteria. In particular we are interested in members of the leguminous family which suffer invasion of the root nodule bacteria and the process which causes nitrogen fixation activity to occur. We are also involved in establishing the transformation system for the actinomycete *Frankia* which enables nitrogen fixation in trees such as the she-oaks.

So far we have accommodated students and researchers from countries including Thailand, Philippines, Indonesia, Egypt, Senegal, France, Spain, Hungary and Bulgaria. Below is a list of the notable joint research that we have undertaken.

- Root nodule bacteria associated with endemic leguminous plants in Southeast Asia (with overseas students from Senegal and all over Asia)
- Plant effectors of bacterial differentiation in symbiosis (France & Hungary)
- Molecular-bases of symbiosis between the nitrogen fixing bacterium *Frankia alni* and its hosts (France)
- Nitrogen metabolism and plant hemoglobin in the symbiotic root nodules (Spain)



Kurawaki Jun-ichi

Professor, Molecular Chemistry

For mankind, the ideal energy source is solar power and my research is about trying to construct a highly-efficient system to turn light energy into chemical energy, store it and use it effectively.

Specifically this involves highly-efficient collectors, electron transfer, charge separation and electronic relay systems all using organometal complexes, as well as the control of photochemical reactions, redox systems using water molecules, photoelectric conversion using nanotechnology and unlocking the mechanism of photosynthesis.

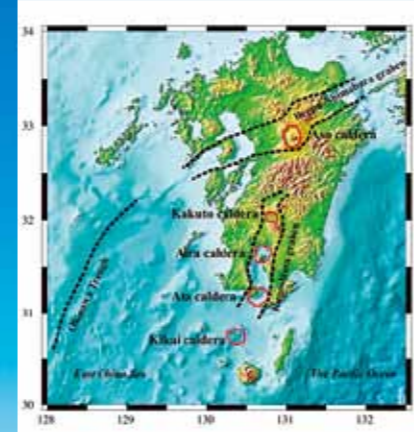


So far we have accommodated students and researchers from countries including Myanmar and Cameroon. Below is a list of the notable joint research activities that we have undertaken.

- Spectroscopic studies on the construction and photochemistry for artificial photosynthetic models.
- Plasmon-induced electron transfer of gold nanorod-dye composite systems produced by laser ablation.

In the laboratory we organise research seminar to look at papers and research results, which is good language practice for Japanese students. We also have *hanami* and other parties to build a good relationship with all the students.

Earth and Environmental Sciences



The southern Kyushu and Nansei Islands region where Kagoshima Prefecture is located has a wet and warm climate and is

blessed with a variety of environments that are a result of different natural phenomena. The department of earth and environmental sciences is divided into four research groups: geological science, arc volcanology and seismology, which is mentioned in depth below, environmental analysis and biodiversity science. Our education and research on the earth and the environment reach beyond geology, chemistry and biology.

The Filipino plate subducts under Kyushu below the Pacific along the east of the island. On the western side runs the Okinawa Trough, where the plates are thought to be pulling apart creating one of Japan's biggest rift basins. For this reason the southern Kyushu region experiences a lot of crustal dynamics from volcanoes and earthquakes. In order to shed more light upon this, the arc volcanology and seismology research group has teamed up with the university's Nansei-Tōko Observatory for Earthquakes and Volcanology to conduct research and observations through a geophysical approach based mainly on seismology, physical volcanology and crustal deformation. As well as collecting data from the land-based observation network throughout southern Kyushu and the Nansei Islands, we also use ocean-bottom seismographs. This data is then used in research into seismic activity and crustal structure. The most prominent feature of the southern Kyushu region is the five giant calderas (Aso, Kakutō, Aira, Ata and Kikai) all located within 260km of one

another. The existence of these calderas is evidence of huge eruptions that would surpass any volcanic activity that we see today. In particular, the city of Kagoshima faces Mt. Sakurajima which as part of the Aira caldera is still active to this day. Volcanic activity usually refers to the amount of magma being brought up from deep underground. Therefore we need to determine the movement of magma to understand volcanic activity. To do this, we have teamed up with other universities to conduct ocean-bottom seismograph observations directly on top of the caldera. From 2011 we have started working on ground-breaking research running the accurately controlled routinely operated signal system (ACROSS) to send out a weak signal to understand changes in subterranean magma movement. This research will hopefully provide new information about the Aira caldera and the volcano of Mt. Sakurajima by picking up changes in magma movement that passive seismic and crustal observations used so far have had difficulty in detecting as well as investigate the possibilities of future active volcanic observation methods.



Research groups and areas

Earth Science Course	Geological Sciences	Mineralogy, Paleontology, Stratigraphy, Quaternary Geology, Structural Geology, Sedimentology
	Arc Volcanology and Seismology	Volcanology, Eophysics, Seismology, Geodesy
Environmental Science Course	Environmental Analysis	Oceanography, Analytical Chemistry, Environmental Chemistry
	Biodiversity Science	Ecology, Taxonomy, Environmental Biology, Biogeography, Phylogeny



輝

Kathy Thi Aung

PhD Student of System Information Science, Graduate School of Science and Engineering



LIFE IN KAGOSHIMA

Hello everybody. I'm Kathy from Myanmar. Japanese technology had always fascinated me, as it has done for everybody all around the world, and it was my dream to study in Japan for my graduate studies from my childhood.

Now, I'm living my fulfilling campus life in Kagoshima. For me, Kagoshima University is not merely a school, it is also a home where I belong. The teachers always give finely textured and detailed instructions. As there are many students from various countries studying together in Japanese class, I've learned that there are many viewpoints and different ways of thinking to comprehend a single matter. Not only the classes, there are programs such as excursion trips, cultural exchanges, a lot of contests, tournaments and country talks, etc.

Currently, I'm pursuing a doctoral course in computer science, specializing on reinforcement learning for intelligent robots in Professor Takayasu Fuchida's Laboratory. In my lab, there are three major areas of research: Reinforcement Learning (R), Networking (N) and Graphics (G). We're constantly encouraged to publish papers and participate in domestic and international conferences. I went to my first international conference when I was on the master's program. Participation in an international conference can be very expensive. There are lots of cases in other countries where students usually do not get the chance to participate in these because of the high cost. The university always takes the full responsibility of providing the student with the monetary support for the participation therefore we're able to submit our papers to conferences without having to worry about the financial burden.

Over the past four years, Kagoshima has become my home. Everything is a fascinating experience and it really makes me feel grateful because the people are extremely courteous, very friendly, very welcoming and very warm, especially the people of Kagoshima are extremely kind. I'm sometimes surprised how patient Japanese people are with me when I go to an office or a shop, as someone who has quite minimal

Japanese skills.

And there are so many places to see, discover and enjoy. I have such a great time here, excited about everything, visiting new places, meeting different people, seeing other countries cultures to their singing, their dancing and their traditional artifacts. I've become good friends with my tutor, as well as Japanese students and international students. Sometimes we have parties at the international residence hall and Japanese students' dorms on weekends. It's always fun making new friends and enjoying the cultural heritage of the area, which are my favorites. Everybody enjoys the time talking, eating and drinking. This atmosphere creates a good opportunity to get to know many people. Drinking parties are held several times a year to celebrate many occasions. Many of the lab members together with the supervisor professor participate in these and enjoy a loud fun-filled night.

Although, as we all know, a massive quake and tsunami hit Miyagi prefecture on March 11th with a magnitude of 8.9. It was like a movie, something like a disaster film. Since never having experienced an earthquake like this, my other international friends and I were so astonished and panicked. Most people are scared by the effects of radiation. On the other hand, there were lots of unsettling news and visual images made our family nervous but people in our place live here normally. I told my family correctly about Japanese government correspondence and other reality, and then it was reliable for them. Furthermore, I would like to say to all of my friends anywhere in the world that Japan is a safe place, and Japan has always lived in harmony with nature.

Finally I would like to send out this message, that "my life in Japan is a unique experience." I'll never forget a lot of things, like kindness of the teachers, cheerfulness of my friends, the valuable and countless experience that make me to increase my ability, and learn more about Japan through my studies and will always be grateful for the time. I believe a period of stay in Kagoshima for advanced study leading to a doctoral degree will allow me to gain scientific knowhow and expertise. Additionally, this great experience and the skills that I have learned from my studies will continue to be invaluable to my future career.



Glass still for observing the process



Japan's only shōchū research and education facility

Shōchū Research Building - Hokushin Distillery

The shōchū research building on Kōrimoto campus was completed in July 2007 for use by the shōchū studies course of the Faculty of Agriculture.

Designed to resemble a true shōchū distillery, the two-storey building was named Hokushin Distillery (Hokushin is the pole star in Japanese) because it is hoped it will be able to provide guidance in the field of shōchū distilling.

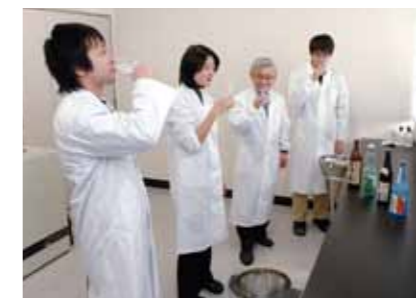
The shōchū studies course which was started in April 2008 is sponsored by Kagoshima Prefectural Government, Kagoshima Prefecture shōchū Makers Association as well as all the shōchū distilleries and associated businesses throughout the prefecture. This highly specialised building, which was funded by the sponsorship, allows for the laboratory work and experiments that could not be done in existing facilities as well as giving students an insight into the fundamentals of distilling shōchū.

On the ground floor there is a the room for breeding the kōji mold that is necessary for making shōchū, trays for hand producing kōji, a room for fermenting the moromi mash, a glass still where the process can be observed as well as the prototype of a new kind of still. Equipment for analysing the kōji, moromi and shōchū, and for mapping the functionality and taste

components, as well as a tasting room can be found upstairs.

Hokushin Distillery is used mainly by the students of the shōchū studies course. Apart from them, it has also been used for research by postgraduates and local shōchū makers and laboratory work by members of Kagoshima Renaissance Academy. Local high school pupils have also visited the facility to try their hand at making shochu.

From 2011, the shōchū studies course expanded to become the shōchū and Fermentation Research and Education Centre. Based around Hokushin Distillery, it will be a new research and education facility encompassing not only shōchū but also other fermented foodstuffs as well as the culture surrounding shōchū. It is hoped the facility will further improve the connections between the university and the local community.



Tasting the shōchū



Students in the distillery



A Political Science View of the Tokyo War Crimes Tribunal



The Tokyo War Crimes Tribunal remains a controversial topic to this day. Professor Higurashi Yoshinobu (Faculty of Law, Economics and Humanities) from his analysis of original sources says that the tribunal can be measured as a forum for international politics.

2008 Suntory Prize award ceremony

The tribunal (officially the International Military Tribunal for the Far East) was convened as war crime trials by the Allies in May 1946. 28 pre-war leaders of Japan stood accused as Class A war criminals on the crime of conspiracy to start a war of invasion, and the 25 still alive at the verdict were on 12th November 1948 all found guilty with 7 given the death sentence.

Suntory Prize

In January 2008, 60 years after the end of the tribunal, Professor Higurashi published *Tōkyō Saiban*. The book which brought together Higurashi's research into the tribunal for the ordinary reader was awarded the Suntory Prize for Social Sciences and Humanities (History and Civilisation category) for its excellent literary endeavour. The awards committee praised the book as

"currently being the best and easiest to understand work on the Tokyo War Crimes Tribunal to date. It is not only comprehensive in its perspective, it also sheds light on new aspects of the trials."

Professor Higurashi's research stems from his interest in the mixing of law and politics concerning the tribunal in particular from May 1946 to November 1948 when GHQ occupied Japan. He says "the trials have from the onset been taken either as judgment of civilization or victor's justice. Even today as a fishy political topic the debate lapses into ideology and emotions. However the basis for the debates is often based on perceived truths and misconceptions. Therefore it is very difficult to have a level-headed debate."

Political Science Viewpoint

Higurashi has studied the war crime trials from his

academic speciality, political science. His work has earned critical acclaim overseas. "Politics is the phenomena surrounding power and the governing of people by people. Political science is the study of things centered on power. I thought that if I was to look at the Tokyo Tribunal from a political science viewpoint, like looking at a game with many players, I could explain them clearly and objectively. For that I needed to search out and analyse the truth from original sources."

Compared to overseas, the amount of original documents from the occupation period is small. While continuing research in Japan, he also visited public record offices in the US, UK and Australia and read extensively on the subject. As a result he made some new discoveries. For example concerning the ex post facto law "crimes against peace" which makes a war of aggression a crime under international law, the monolithic panel of judges actually had cracks in it. Also, the idea that the dissenting opinion of Justice Pal, who often tends to be acclaimed in Japan, was actually the opinion of the Indian Government was persistent, but he fell out of favour with the Indian Government for not agreeing with the majority of the judges, so that report actually had nothing to do with the government. In the sentencing procedure for the Class A crimes, the crimes against peace, the maximum sentence should have been life imprisonment but it became clear that these were raised to the death sentence if there was responsibility for acts of extreme cruelty.

Tokyo Tribunal as forum for International Politics

Based on the new findings from analysis of original documents, Professor Higurashi believes that the Tokyo Tribunal was more of a forum for International

Law than a trial in itself. He says, for example, we tend to believe that the UN is a forum for achieving international justice however in actual fact in the UN each country's interest is at conflict so they have to regulate. The Tokyo Tribunal was the same. The United States wanted Japan tried as the planner and the initiator of a war of aggression, but the countries of the British Commonwealth, China, Netherlands, France, Philippines clung to bringing Japan to justice for the acts of cruelty. Where each countries individual interests are combined complexly, the process of policy decision is international politics.

Furthermore the tribunal had the advantage for the allies of being a way of detoxifying Japan and for Japan a way to get rid of the militarists and strengthen their stand against the US.

Professor Higurashi thinks realistically that the tribunal had merits for both sides from the point of view of security. The arguments between the positive 'judgment of civilization' and the negative 'victor's justice' have continued, but both sides have included international politics. If you look at it purely as a judicial trial you will find many faults and questions, but it can also be seen as the price Japan had to pay for starting the war.

Currently Professor Higurashi is researching Japan's post-war diplomacy and the freeing of the war criminals. "War criminals today are treated as the evilest of the evil, but when they were released in the 1950s nobody complained and they were accepted. By looking at why the war criminals were released, he wants to investigate Japan in its changeover from the end of the Occupation to the beginning of its period of high growth. Japan's war history changes as each new document comes to light, so I want to be able to present my research results easily so the general public can understand."



Dr. Higurashi Yoshinobu, Professor of Japanese political history and foreign policy in the Faculty of Law, Economics and the Humanities at Kagoshima University

Born in Tokyo in 1962. He received his M.A. in History from Rikkyo University in 1988 and Ph.D. in Political Science from Gakushuin University in 2000. He has been teaching at Kagoshima University since 1993. He is the author of *Tokyo Saiban no Kokusai Kankei* (The Tokyo War Crimes Trial and International Relations: Power and Norm), Tokyo: Bokutakusha, 2002. His most recent books are *Tokyo Saiban* (The Tokyo War Crimes Trial), Tokyo: Kodansha, 2008 and *Tokyo Saiban wo Tadashiku Yomu* (Correctly Reading the Tokyo War Crimes Trial, co-authored with Dr. Kei Ushimura), Tokyo: Bungei-shunju, 2008. Other works include his translation of Arnold C. Brackman's *The Other Nuremberg into Japanese* (Tokyo Saiban, Tokyo: Jiji Press, 1991), and his supervision of John G. Roos's *In a Prison Called Sugamo* (Sugamo Jinmon Chousho), Tokyo: Yomiuri Shimbunsha, 1995.



KU Sadō (Tea Ceremony) Society

Matsuno Kanami,
Society President



Konnichiwa! We are the Kagoshima University Tea Ceremony Society. The tea ceremony is a traditional part of Japanese culture, but you would be surprised how many Japanese don't know very much about its history or how it is done. So, first of all we would like to tell you a little bit about the history of the tea ceremony in Japan.

Tea culture was brought to Japan by Buddhist monks returning from cultural missions to Tang China in the 7th to 10th centuries. Matcha was first drunk during the Song Dynasty in China (960-1279). It was brought to Japan during the Kamakura period (1185-1333). At first it was drunk mainly in Buddhist monasteries or by samurai families, but it soon spread to all echelons of society and tea ceremonies involving tasting games to guess the brand of tea or for appreciating the beauty of the elegant Chinese utensils soon developed.



After that, manners concerning how to serve tea became established and in the Azuchi-Momoyama period (1568-1603) the father of the tea ceremony, Sen-no-Rikyū's ceremony came to be perfected, where through the serene serving of tea, participants could cultivate their spirits as well as appreciate the ceremony's utensils and calligraphy and enjoy conversation with the host.

Sen-no-Rikyū's descendants broke into the three main schools of tea ceremony, Omotesenke, Urasenke and Mushakōjisenke. The Omotesenke school practises a more natural flow in its ceremonies and it is this school that our society follows.

We meet twice a week on in the Japanese-style room in the students' building on Kōrimoto campus, where we practise otemae, this involves washing and warming the teabowl, making the tea and serving the guests and finally washing the teabowl again. This otemae is not simply aimed at having a cup of tea, but rather to enjoy the beauty of the ceremony and utensils used.

Twice a year, once in May and once at the university festival, we hold tea ceremonies (chakai) for the general public and of course for our teachers, which can be very nerve-racking. But it is really nice when people say they enjoyed the ceremonies we hold. All of this may sound a little serious, but we often have foreign students coming and joining us to learn a little about the ceremony.

Recently one of our members brought two overseas students with them to a practice and we had them dress up in yukata and let them try their hand at doing the ceremony. Both of them had a good time and we really enjoyed showing them what to do. Last year we also had an overseas student as a full-time member. She took part in all of our practises and chakai and finally we had a big barbecue for her as a leaving party. Whenever we had parties, she would make Korean food for us. It was really sad to see her go, but we all still keep in touch.

So you can see, the tea ceremony society is not just about learning the ceremony but having a good time and we welcome overseas students to take part – why not come along!



Kagoshima Chinese Student Association

Chin Lin, President 2011



Kagoshima Chinese Student Association works to support Chinese students, graduates and their families who live in Kagoshima. The association bases itself on patriotism, unity, friendship, support and service. The association calls on students to take part in friendship exchanges both cultural and academic, helps strengthen ties with China, acts as a bridge between China and Japan as well as supporting individual and group exchanges between Chinese students in Japan and elsewhere.

In recent years we have started to put more effort into international exchanges while still providing support for Chinese students. We work not only at Kagoshima University but throughout Kagoshima Prefecture. Every year we participate in local events in places such as Kushikino and Ibusuki, we visit elementary schools and have stalls at festivals selling boiled shuijiao dumplings all in an effort to deepen understanding about each other's cultures.

There are many foreign students at Kagoshima University and about half of them are from China. This should mean that international exchange is a mainstay of life for the Chinese students here, but unfortunately it isn't. There are many reasons for this. One of the biggest reasons is that Japanese students are more interested in English-speaking countries. Without a doubt, English has become the lingua franca of the modern world. However with China's recent rapid economic growth, the economic and cultural ties between China and Japan are stronger than ever and more Japanese are starting to learn Chinese. In June our association started free Chinese classes at



Kagoshima University where Chinese students volunteer to teach daily conversation to Japanese students. At first we were worried that the turnout would be poor, but we were pleasantly surprised that so many people decided to come. As we continue with the conversation classes, we also have plans to start cultural and cooking classes too.

Also, to further mutual understanding between Chinese and Japanese young people we co-sponsored a trip to China with Nanjing Institute of Technology. Eight students from Kagoshima University, Kagoshima International University and Kagoshima Prefectural College took part. We visited the centre of China's economy – Shanghai. Even though Shanghai is a thriving city with much to offer such as fashionable shopping areas, its beautiful night views, the famous water townships, the Expo site and museums, the most memorable part of this trip was our three days in Nanjing on a youth exchange. We stayed at the university for three days, ate together with the students in the university cafeteria, went to lectures with them and played sports together. On the third day they showed us around the Ming Xiaoling Mausoleum, a world heritage site in Nanjing. It was three days of broken English and broken Japanese but it was better than anything being able to make friends from other countries. We are organising another trip to China this September.

The people in Kagoshima are really friendly which makes it a nice place to live. I love Kagoshima. Even if Sakurajima has been a bit restless of late, I still love it. And of course, I love Japan. In an effort to help after the Tohoku earthquake happened on March 11th, we decided to collect money in Kagoshima city centre. In just 4 hours we were able to collect ¥288,000 which we gave to the Red Cross. I realise that it is not much but I hope that it will convey the feelings of the Chinese students in Japan. In this way, I hope that Kagoshima Chinese Student Association will continue as a bridge of friendship between our two countries.



The international training programme

Suzuki Eizi, Professor, Graduate School of Science and Engineering

In 2007 the Japan Society for the Promotion of Science (JSPS) established its International Training Programme to send postgraduate students and young researchers overseas to gain experience. This ambitious five-year programme with an annual budget of ¥20 million aims at giving researchers independence in their research and so where they have to spend at least two months abroad, their academic supervisors are only allowed to visit them for up to a fortnight. Kagoshima University entered the first round of applications, and of the 61 that were placed, was among the 10 that were chosen, enabling us to start in November 2007.



Our programme is on the protection of diversity of bio-resources in tropical regions of Asia and is based on research that has already been done at the university. A dozen or so academics from three of our graduate schools (Science and Engineering, Agriculture and Fisheries) with the help of the international cooperation division and the individual faculty offices are involved in supervising the students as well as running the programme. As of 2010, 38 postgraduate students and 32 teaching staff have so far benefited from the programme and been sent abroad. What is more, one special feature of the programme is that so far 12 members of the university's administrative staff have also been able to go overseas with the objective of broadening the international perspective of the university as a whole.

This programme quite simply spans the academic and administrative staff and different faculties in promoting internationalisation throughout the university. The students do research in their individual fields either in foreign research institutes or tropical forests. Spending most of the two months away from their Japanese supervisors and then finally having to give a presentation of their research results in English is quite tough. However, overcoming the language and cultural barriers, the



students come back to Kagoshima more grown-up. For them, it is an experience not to be forgotten. (Photos ① & ②)

The institutions where the students are dispatched to are those which have a MOU with Kagoshima University and have long histories of research and student exchange. In the beginning the training programme sent researchers to the Research Centre for Biology at the Indonesian Institute of Sciences (LIPI), Andalas University in Indonesia, University Malaysia Sabah, and University Malaysia Terengganu, from then as other MOUs were drawn up more were added including Bogor Agricultural Institute, Bandung Institute of Technology, both in Indonesia, and Kasetsart University and Suranaree University of Technology, both in Thailand.

The programme has enabled us not only to send students overseas but also carry out joint events. Every year a two-day workshop is held that has attracted over 100 participants each time with Andalas University in 2008, Research Centre of Biology at the Indonesian Centre for Sciences (LIPI) in 2009 and Bogor Agricultural Institute in 2010. In 2011 it will be held with Bandung Institute of Technology. The workshops are extremely useful since the students not only have the opportunity to increase their presentation skills in English, they can also meet with local researchers. In particular the 2009 workshop with LIPI which was jointly held with the Indonesian Ecology Society had a great effect in reinvigorating the somewhat stagnating society. That workshop also led to receiving a JSPS grant for Flexible International Exchange with which

Training Programme Partners



another workshop could be held the following year in Bali on capacity building for the establishment of an Indonesian network in ecological science. At the Bali workshop, which ran for four days, it was discussed how much research into ecological science could be developed. (Photo ③)

The programme is for sending people abroad, so that the university applied for other JSPS grants to have researchers from our partner institutions overseas come to Kagoshima. The first time 11 researchers spent 30 days in Kagoshima in July-August 2009 on a training programme to protect the diversity of bio-resources in Kagoshima. The workshop was able to raise the level of the young biodiversity researchers in Kagoshima's rich countryside which is comparable to anything in the tropics, including a visit to the World Natural Heritage Site of Yakushima. (Photo ④) The second time in 2010, 12 researchers came for a 40-day period and

they were placed in laboratories relevant to their own field so that they could expand their research. Through the workshops and everyday laboratory work with those invited to Kagoshima, this kind of exchange proved to a great stimulus for our own university's researchers as well. (Photo ⑤)

These first two times have been so well received that we are hoping for a third time. In addition, we have been able to obtain a special grant to do with the ITP from the Japan Student Services Organisation (JASSO) with which we have been able to accept five foreign students. In this way, the programme itself is growing year on year. This summer the next batch of postgraduates will be sent abroad to gain some very valuable experience. Next year will be the final year of the programme, but we hope that these five years worth experience will lead to the further development of Kagoshima University's research and education activities.

International Foot and Mouth Symposium

The International Symposium on the Protection of Foot and Mouth Disease (FMD) in Northeast Asia was held by Kagoshima University on 18 March 2011 co-hosted by the Japan Society for the Promotion of Science (JSPS), the Graduate School of Agriculture Kyushu University, Faculty of Agriculture Saga University, Faculty of Agriculture University of the Ryukyus, and sponsored by Kagoshima Prefectural Government, JA Group Kagoshima and a local newspaper company. The symposium was organized in response to the FMD outbreak in Northeast Asia, which caused enormous socio-economic impact on livestock and related sectors, especially based on the recognition that protection of such trans-boundary animal diseases might not be effectively conducted without appropriate international cooperation among the concerned countries. Over 170 people participated from academic institutions in Japan, Korea and Taiwan, the Secretariat of Association of Southeast Asian Nations (ASEAN), prefectural government staff, and those from related industries and general public.

Before the symposium, the expert consultation on establishing a Northeast Asian academic network on trans-boundary animal diseases (TAD) had been held on 17 March 2011 in Kagoshima.

Kagoshima University established its Transboundary Animal Diseases Research Center in April 2011 to provide up-to-date information and technology regarding TAD to the local government and livestock farmers and to contribute to protection from the menace of TAD.



Symposium on the South Korean archipelago and Japan's southwest islands held

On 19 April 2011, the Graduate School of Humanities and Social Sciences and the Research Centre for the Pacific Islands held an international symposium titled 'Korean Archipelago and Japanese Southwest Islands in the Pacific Islands Area' under the MOU with the Institute for Marine and Island Cultures of Mokpo National University in Korea. The event was attended by about 30 participants. Nine researchers from Mokpo and eight from KU made presentations which would be the first step towards the establishment of the East Asia Islands Network.

Following the opening address by Professor Ishikawa Hideaki, Dean of the Faculty of Law, Economics and Humanities and Graduate School of Humanities and Social Sciences, key-note lectures by Professor Kang Bong-Yong, Director of Institute for Marine and Island Cultures, Mokpo National University titled 'The past and future of the Institute for Marine and Island Cultures, Mokpo National University', Professor Noda Shin-ichi, Director of the Research Center for the Pacific Islands titled 'Outline of Kagoshima University Research Center

for the Pacific Islands' and Professor Makoto Hagino, vice-president of Kagoshima University titled 'Higher Education in the Islands Area – Innovation in Kagoshima University –' were made. Then, eight participants from Korea and six researchers of Kagoshima University joined together in a panel discussion.

After the general discussion, Professor Itō Hiroaki, vice-dean of the Graduate School of Humanities and Social Sciences declared the establishment of East Asia Islands Network and the symposium was closed successfully.



Kagoshima International Relief Program launched

For the purpose of a long-term framework to support the victims of North Eastern Japan Earthquake and Tsunami disaster of 11 March 2011, Kagoshima International Relief Program (KIRP) was established in April.

KIRP was initiated by the strong will of our international students, mainly Kagoshima University Foreign Student Association (KUFSA) members who wished to contribute to the recovery of the affected community and currently Japanese students, university staff, and citizen's group have joined the program.

For one of its charity events, KUFSA opened a Satsuma-age fried fish cake cooking class and held a party on 10 June 2011 at the Fisheries campus. Participants made the local speciality out of fish paste and root vegetables such as sweet potatoes and carrots under the direction of Kimura Ikuo, professor of biochemistry and technology of marine food and resources (Fisheries). Afterwards the class served the Satsuma-age to other KUFSA members, Japanese students and university staff providing an enjoyable exchange opportunity. The money raised was given to KIRP.



Fisheries academic made professor emeritus of Dalian Ocean University.

Professor Koshio Shunsuke (Fisheries) was made a professor emeritus of Dalian Ocean University in China for his contribution to the link between the two institutions, which signed an MOU in 2003 and run student and credit exchanges every year.

Professor Koshio has acted as contact person for the

KU researchers receive applied statistics award

The best paper award of the Japanese Society of Applied Statistics has been given for the article Mixed Geographically Weighted Regression-Kriging Model for Small Area Estimation by former PhD student Sarpono Dimulyo and Professor Aoki Satoshi (Graduate School of Science and Engineering). The best paper award is given to the one outstanding paper that was published in the society's Japanese Journal of Applied Statistics over the previous two years.

When the poverty index of an area is estimated, it is done using geographical and cultural variables, a geographically-weighted regression model is the principal method, however a drawback is that when variables for an area cannot be monitored, an estimate cannot be given. The award-winning paper suggests using a Kriging model and presents how it was used to classify poverty indexes for all the villages in Java, Indonesia.

North American Centre registered



Kagoshima University North American Centre, located in California's Silicon Valley, was officially registered in the state of California on 1st April 2011. The current Santa Clara based centre started life as the Silicon

Valley Office of the university's Venture Business Laboratory in December 2004, before taking on its current role as representative of the whole university in 2008.

The centre runs a short-visit programme, a summer internship programme as well as organising the US-Japan Future Forum and the International Science and Technology Forum every year. It is also a major contributor to the Japanese University Network in the Bay Area (JUNBA). From last year the centre has also started offering two classes Introduction of International Professionals and Introduction of International Innovations using the internet.

WORLD HERITAGE SITES AND KAGOSHIMA

世界遺産と鹿児島

Onodera Hiroshi
Deputy President for Environmental Projects



EXPLORING
KAGOSHIMA

It is now 18 years since the island of Yakushima became Japan's first world heritage site. The effect this has had is quite surprising. In recent years the number of people climbing in the mountains there to see the Jōmonsugi cedar tree have soared and the damage to the environment from toilets and trampling on tree roots has become a huge problem. Until 1993, Yakushima was not a very well known island with roughly 100,000 visitors per year. Today that figure has quadrupled.

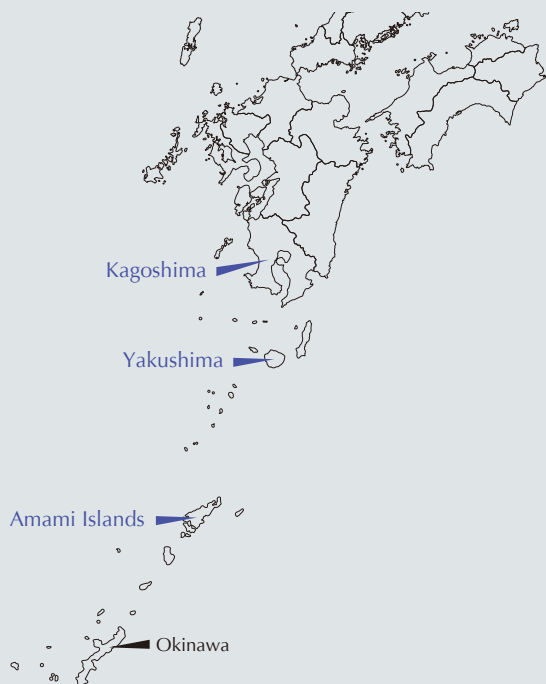
Yakushima was formed from granite rock that rose up out of the ocean floor. Since the rock is covered in only a shallow layer of top soil and annual precipitation is the highest in Japan at 4,000mm, the trees grow slowly with very tight rings in their trunks allowing them to live to great ages. The greatest one, the Jōmonsugi cedar, is said to be over 7,200 years old. Besides Jōmonsugi, Yakushima is famed however for having many other cedars over 1,000 years as well as many large hemlocks and stewartia.

Three years ago we embarked on a project called Kagoshima Environment Studies. This is an inter-faculty project aimed at tackling diverse environmental problems, ranging from global warming to conservation. With Yakushima already



Amami rabbit, a living fossil found only in the Amami Islands

registered and the Amami Islands being put forward as a future world natural heritage site both close at hand, we are in the perfect place for this kind of research. The main characteristic of Kagoshima's natural environment is that it straddles two climate zones, temperate and sub-tropical. And if the Amami Islands are accepted, Kagoshima would be the only place in Japan with two natural heritage sites. If a new regional model for people to live with nature can be found in either Yakushima or Amami, it will surely be a wonderful thing.



* Front Cover



Campus in November

Photograph by Oda Kentarō,
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Communication Centre

A sunny autumn day in the avenue of
ginkgo trees that runs across
Kōrimoto campus.