かごしま探訪

EXPLORING KAGOSHIMA

# Fruit Cultivation in Kagoshima

## 鹿児島の果樹

*Tominaga Shigeto, Professor*
*Horticultural Science Course, Department of Agricultural Sciences and Natural Resources, Faculty of Agriculture*

Kagoshima Prefecture extends approximately 600km from the cities of Isa and Izumi on the border of Kumamoto Prefecture to the island of Yoron, only 23km away from Okinawa Prefecture. Within this area there are over 200 islands, 28 of them inhabited, and due to the large distance from north to south, there are many climatic differences from place to place, especially regarding average temperature. Although the average temperature difference in summer between Isa in the north and Yoron in the south is negligible, it can be much larger in autumn/winter season, with 5ºC in the north and 15ºC in the islands.

With these different climates, the fruit that can be cultivated range from deciduous types such as nashi pears and grapes, to subtropical ones such as mangoes and passionfruit. In 2013, fruit orchards extended over 4000 ha, with citrus fruits such as satsuma oranges, amanatsu, ponkan and tankan making up 75 percent of this, mainly on the coastal areas and islands where there is less threat from the cold. Among this citrus cultivation, satsuma oranges and amanatsu are focused in Izumi, ponkan in the south of the Satsuma peninsula, Ōsumi peninsula and the Kumage island areas and the subtropical tankan in the Kumage and Amami-Ōshima island regions. On the opposite end, cultivation of deciduous trees such as ume, grapes, nashi pears and persimmons, which require cooler temperatures in winter, is centred in the inland regions of the prefecture like Satsumasendai. The one exception is the karari plum, which prefers the warmer climate of Amami-Ōshima.

Among the citrus fruits, the Satsumashū ponkan and a variety of the dekopon that was discovered in Akune are both promising with their cultivation spreading in the Izumi and Hioki areas. Further growth in cultivation of tankan on Yakushima and in the Amami Islands can also be expected. Loquat cultivation, centred on Sakurajima, continues to spread throughout the Kagoshima, Ibusuki and Ōsumi peninsula areas as well. Sakurajima also has its own specialty fruit known as the Sakurajima komikan, a variety of cherry orange. While the cultivation of mangoes and passionfruit continues to flourish in the subtropical climate of Amami-Ōshima and surrounding islands.

**Tominaga Shigeto**

Born in Kagoshima Prefecture in 1949. MSc in Agriculture from Kagoshima University in 1975. PhD in Agriculture. Specialises in pomology. Contributor to *The Islands of Kagoshima, Culture, Society, Industry and Nature*, published in English by Kagoshima University Research Centre for the Pacific Islands.

＊Front Cover

Students and the ambiguous Rubin's vase, developed by the Danish psychologist E. J. Rubin, which seems like a vase or faces looking at each other. The photos of the students are also arranged in a symmetrical pattern.



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# KU Today

KAGOSHIMA UNIVERSITY NEWSLETTER

学部紹介特集

Welcome to the

# PROFESSIONAL GRADUATE SCHOOL OF CLINICAL PSYCHOLOGY

Spring 2016

KAGOSHIMA UNIVERSITY

KU Today
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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.

PDF files on KUToday can be downloaded from http://kokusai.kuas.kagoshima-u.ac.jp/kucip/

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

Spring
2016

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Special Issue


Welcome to the

# PROFESSIONAL GRADUATE SCHOOL OF CLINICAL PSYCHOLOGY

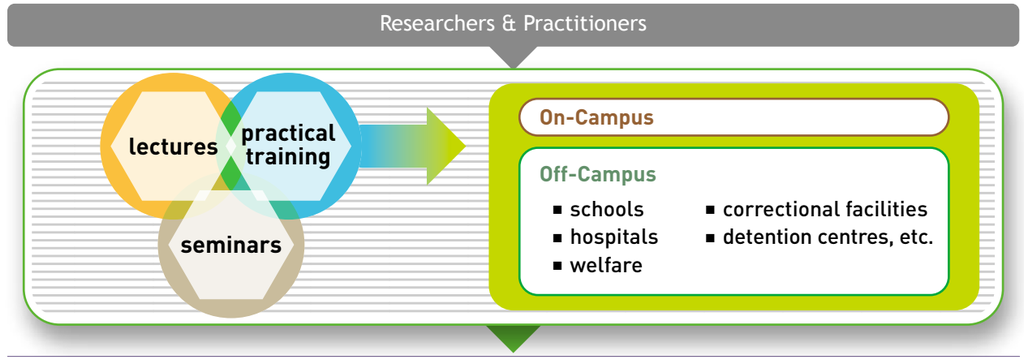
**NAKAHARA Mutsumi, Dean**

The Professional Graduate School of Clinical Psychology was established in April 2007 as an independent graduate course offering a professional degree programme that specialises in training clinical psychologists, the first ever for a Japanese national university. We provide advanced professional education based on a curriculum of lectures, seminars and practical training to foster clinical psychologists who can contribute to people's mental well-being.

Fifteen students are enrolled per grade. They take a two-year course and obtain an MA in Clinical Psychology, which is a professional degree. In line with our policy of accepting students from diverse backgrounds, our graduate course enrolls non-psychology students as well. We place emphasis on clinical psychology training, and spend three times more hours on training than other graduate schools designated as Class 1. All of our nine faculty members are certified clinical psychologists, and four are clinical practitioners.

As of 2015, on completing the course, 98% of the students have passed the test conducted by the Foundation of the Japanese Certification Board for Clinical Psychologists. Every one of our students finds employment in Japan. About 30% of our students become psychologists hired by local municipal governments. It is a tough programme, but it is worth it in the end.

On-campus clinical psychology training takes place inside the annexed clinical psychology counselling room. Students are placed in charge of clinical cases, and receive individual instruction each time by members of the faculty. Off-campus training takes place at four locations over a two-year period, covering the medical, educational and welfare areas. As training in the judicial and correctional areas, students visit family courts and prisons. Instructions are given by clinical practitioners. In 2010, we began a community-based programme to deliver psychological support.




**Goals of the Programme**

To produce...

- Graduates who can give reliable psychological support to individuals
- Graduates who can work in a variety of organisations such as schools and other facilities
- Graduates who can use their knowledge of local culture and history when providing psychological support
- Graduates who can deliver the appropriate psychological support after natural disasters or accidents

## Practical Training On-Campus

### THE CLINICAL PSYCHOLOGY COUNSELLING ROOM

A counselling room is housed inside the school as an on-campus training facility. It is open to the local community, and we accept about 1,500 cases per year. This is our eleventh year. People come to the room to discuss a variety of problems that their children have (not attending school, developmental disorders, and delinquency), to talk about interpersonal relationships at the workplace, and about their own personalities. Many of the cases have been referred to us from relevant institutions, so we endeavour to contribute to society as a counselling organisation rooted in the local community. Our staff is comprised of the director, a senior staff member, an assistant senior staff member, clinical instruction counselling staff (our graduate school's full-time teachers), clinical counselling staff, trainee counselling staff, and clerical staff. Graduate school students are also involved in broad-ranging operations as counsellors-in-training, from business management to consultations. An educational setup is in place for training and fostering clinical psychology specialists who contribute to enhancing people's mental health.

## Practical Training Off-Campus

### EDUCATIONAL AREAS

In educational areas, practical training for preparing students to work as school counsellors is provided. Students are taught practice-based knowledge of school counselling by being placed in middle/high schools for a certain period of time, where they see how trained school counsellors actually work.
The programme includes attendance in sitations such as counselling sessions for children with school absenteeism and/or in concern of bullying, counselling sessions with parents, and consultation sessions with teachers. Students are also given the opportunity to actually plan a syllabus and give lessons on stress-management education to children for their mental health.
In schools recently, in addition to bullying and school absenteeism, acute psychological care at scenes of disasters or traumatic events is becoming a modern issue, and thus practical training in educational areas have been recognized as worthwhile soon after the students start their careers in school counselling.

### MEDICAL TRAINING

As of 2015, practical medical training for graduate students has occurred in a total of six facilities including Kagoshima University Medical and Dental Hospital, Aira Hospital as well as four private institutions. The training programme includes allowing students to sit in on actual medical examinations by doctors and clinical psychologists, the daily workings within a hospital and many other activities covering a range of medical treatments. Through this practical training, graduate students gain valuable firsthand experiences that serve to further their education.

### WELFARE AREA

Our graduate students undergo practical training in the welfare field at child guidance centres, support centres for people with developmental disorders, foster homes, and a short-term therapeutic institution for emotionally-disturbed children. Through working as trainees at these facilities and interacting with the children, the students gain an understanding of the psychological characteristics of children who require welfare assistance, and learn how to respond to them as a psychology professional. In undergoing practical training in the welfare field, our students learn what life guidance supporters, childcare providers, and rehabilitation staff do, through receiving lectures and seeing them in action, and study the important keys in collaborating with people of other occupations.
Through these extensive practical training programmes, the students study what psychological support in the welfare sector is all about, and learn that approaching not only their hearts but also their daily living is most important.

### JUDICIAL AND CORRECTIONAL AREAS

In the judicial and correctional areas, we practice psychology that chiefly targets delinquent boys and people who have committed crimes. From the standpoint of clinical psychology, we examine the type of approaches and support provided after acts of delinquency and crime that have become a serious social problem. Many specialists work actively in this area. Students taking this course will examine in great depth the jobs of experts who work at the frontline of juvenile cases, confront the youngsters head-on, and dissuade them from re-offending. One example is family court probation officers. They receive orders from family court judges to handle juvenile cases. Students learn the actual process through lectures and tours of a family court. Another example is judicial technology officers at juvenile detention centres. These experts classify youngsters who were sent to such homes on decisions by the family court judge. The students learn the entire process through visits and lectures.

# COMMUNITY SUPPORT PROJECT

In 2010, we began a community support project where the teachers and students visit various regions and deliver community support centred on clinical psychology. We have visited places all over Kagoshima Prefecture to hold lectures, training, and case study sessions targeting over 3,000 people. Clinical psychological support that meets local needs has been praised by the area's participants, and is attracting attention as a unique clinical teaching method for graduate school students.

## Project activities 1 Supporting children with developmental disorders and their guardians

In Isa and Kirishima, which are our activity's model areas, we provide support to children with developmental disorders and their guardians. Specifically, we provide training on infant medical check-ups carried out by municipalities, and help with pre-school health examinations. The students not only take part in training programmes held by the teachers, but also get involved with the target children, perform developmental tests, and summarise their findings. This sort of practical learning programme is a valuable opportunity for them to learn about the actual psychological support needed at the sites and to increase their motivation to continue learning.

**Community Support Project**

**Psychological Problems**

- Need for expertise of clinical psychology
- Need for understanding of community and local culture
- Need for group support

**Foundation of Professional Graduate School and Clinical Psychology Counselling Room**

Accepting clients to the on-campus counselling room for mental care.

**Community Support Project**

**Establishment of the Community Support Division in Counselling**

**Development of an Education Program for Practitioners**

On-site community support activities

For example...

- Lecture, training, and counselling for psychological support
- Partnership and cooperation with governments and local experts
- Emergency psychological support after natural disasters

## Project activities 2 Kagoshima University COC Project : Education through local assistance programmes

Deep in the mountains at a small junior high school, a new programme took place involving clinical psychology students and junior high school students discussing the different needs of each class year. The programme involved different themes for each year, with the topics being 'thinking about the needs of those around you' for the first years, 'becoming an adult' for the second years and 'facing your fears' for third years. Within each of these groups two graduate students, regardless of their year or major, joined the students to think about these topics. The programme was a great success with both the junior high school students and teachers stating that they wish for it to continue. The graduate students also spoke of the great satisfaction they felt by being a part of this programme and how it gave them valuable real world education and insight into local assistance programmes.

* This project is conducted as the university's Centre of Community (COC) project, not by the Professional Graduate School of Clinical Psychology.



# RESEARCH

## Dr. Yamanaka Hiroshi, Professor

I specialize in clinical and sports psychology. I study mutual interactions between mental attitudes and experiencing from the perspectives of clinical dohsa method and imagery therapy, and apply the results when conducting counselling at psychiatry and somatic medicine departments. I also practice stress management education in the industrial sector and with athletes.

As a part of the Japanese Olympic Committee sport counselling team I was in charge of the mental care and image training for the members of the Japanese baseball team at the Asian Olympic qualifiers in Seoul 1999. Due to my efforts at that time I was rewarded by being selected as the first ever clinical phycologist attached to the team as it made it all the way to the semifinals of the Sydney Olympic Games in 2000.

Based on clinical experience such as this, I produced the original idea of 'pair relaxation' as part of a stress management and prevention programme for use with children. This programme spread rapidly through education circles and was even used to help children who were affected by the 2011 Tōhoku earthquake and tsunami. I have also played an active part in contributing to society through new research and practical education for stress management in the fields of education and industry. Along with others such as Professor Matsumoto Shigeru, I played a part in the creation of the Japanese Society for Stress Management, serving as its first chairman in 2002.

## Dr. Matsuura Takanobu, Associate Professor

I specialise in Morita therapy, a method of psychotherapy that was developed in Japan in 1919 by psychiatrist, Morita Masatake. An important characteristic of this psychotherapy is that it does not disavow negative emotions such as anxiety, and emphasizes that it is important to "accept reality as it is." This idea is said to have things in common with Asian and Zen thinking. In recent years, a similar form of therapy known as Cognitive Behavioral Therapy has been adopted overseas and it can definitely be said that in both Japan and the rest of the world that what's old is new again in the area of psychotherapy

In my clinical seminar, to offer opportunities for the graduate students to get to know the practicality in Morita therapy, I hold an expanded seminar each year, also inviting students not already enrolled in my course. Morita's idea that people need not eliminate negative feelings really resonates with the students and these seminars become a place of active discussion and debate.

## Dr. Inatani Fumie, Professor

With the advent of a super-aged society, and with the aim of training of psychology professionals working in the elderly welfare area, I specialise in clinical psychology and lifespan developmental psychology, practicing with elderly people diagnosed with dementia, and family caregivers, applying the Validation Method. The Validation Method was developed in 1963 by Naomi Feil. It is a method for communication with elderly people with dementia and has also been used worldwide as psychotherapy. I have been studying with Naomi Feil from 2002, and became the first qualified teacher of Validation in Japan, performing dementia care training for medical and nursing staff in municipalities and welfare facilities around the country. I am also working to develop stress support, and empathy techniques that target the long-term care and nursing profession.

My experience of studying abroad and work abroad started long ago in the late 1980s. After working as a native Japanese language teacher and nursing staff in Stockholm, I studied at Linköping University in Sweden from 1994 to 1995. The elderly in Sweden do not often live together with their children like in Japan. Whether they like it or not, many senior citizens are forced to continue live independently, striving to keep their roles in society. However, the question arises how we can continue to develop our identities throughout our lives, even if you are old and experiencing functional decline.

Day care facility in Stockholm, Sweden, 2002.

with Naomi Feil in Paris, 2014

Based on that experience, and after returning to Japan in 1995, I started to study the psychological well-being of Japan's elderly in Okinawa where was known for the world's leading longevity. My research in Okinawa won the First Poster Prize at the 1st International Conference of Quality of Life & Psychology International Society in Greece. Based on the life developmental theory of Erik Erikson, a pioneer of the field, the research revealed that psychosocial factors contribute to the psychological well-being of old age. People that continue to develop throughout life, even if there is a drop in physical function due to sickness or aging, can still find meaning of life. Their relationship to a "vital involvement" with grandchildren or with the younger generation is indispensable for their psychological well-being. These findings are applied at one of our community support projects with our postgraduate students, who are led to the clinical practice of listening to life stories of the elderly in the region, and helping them create an album of their own life.

## Dr. Takahashi Kayo, Lecturer

My laboratory conducts research on assistance techniques for promoting children's physical and mental development. I focus on ways to interact effectively with children in a variety of circumstances, such as those with developmental disorders and those who are unable to live with their families. Specifically, I am engaged in research that centres on non-verbal approaches, such as play therapy, drama techniques and picture-drawing therapy. In 2015, I conducted an investigation and laboratory research by having children take the 'tree drawing test' which is used a method of analysing an individual's personality and underlying emotional history. As a part of my clinical practices, I am also interested in other areas such as assessment of babies with development problems and support for adolescents going through identity change during puberty. Recently, I have also begun basic research on the use of psychologists in international cooperation activities.

student voice

## Things I learned through the "Mental Partner" activities

**Kōzuma Ayano, MA student**

I am working hard every day to become a clinical psychologist. Kagoshima University Graduate School encourages students to carry out clinical activities outside the campus to practice things learned at school. An example of practical training that helped me grow especially strongly was the "Mental Partner" volunteer guidance programme held by Kagoshima City Council, which targets middle school students. There are all sorts of encounters at the school which help us grow.

## Learning and growth at the graduate school

**Sakuma Takumi, MA student**

I am interested in psychoanalysis and palliative care. I chose to attend Kagoshima University Graduate School on learning of a teacher there who specialised in both these fields. Although we can study all sorts of academic disciplines, our school uniquely offers courses on the clinical dohsa method and Morita therapy, both psychotherapy techniques originating in Japan. Through my daily clinical practice, I learn a lot from the clients. The experience is tough at times, but it is an opportunity to look back on my ways and re-examine myself.

## Through my volunteer activities at a family court

**Kamimura Aina, MA student**

I have participated in an activity offered at a family court, which is conducting joint learning with boys who are awaiting judgment. This activity is meaningful in that it offers an opportunity for the boys to consider their own future as well as the occupations they might have, by meeting graduate students like us. In meeting these boys, we sometimes doubt if we are of any use to them at all. However, by becoming a model for them, I hope that that their world will gradually expand.

輝く留学生

# Learning beyond the borders

**Chimène Nze Nkogue**, PhD student
Department of Pathological and Preventive Veterinary Science (Laboratory of Animal Hygiene),
United Graduate School of Veterinary Science

My adventure in Japan starts in 2009, when I got the opportunity to attend a JICA training programme in Nagoya for two months. Before that trip, I already had some experience of travelling abroad but with Japan, it was totally different from the places I had been before. Starting with the language barrier, the customs, etc. many things were totally new and I had to adapt; which I did quite promptly. In 2011, I was in Kagoshima University as a JICA trainee and I decided to come back for my PhD if I had the chance. In April 2013, finally I was back to Kagoshima University as a Japanese government (MEXT) scholarship student. I am currently enrolled as a 3rd grade PhD student, in the United Graduate School of Veterinary Science, Department of Pathological and Preventive Veterinary Science, Laboratory of Animal Hygiene. My interests and research work focus on viral disease assessment in the wild gorillas of Gabon, my country of origin. Indeed, zoonotic disease transmission remains a worldwide issue and especially in Africa, monitoring wild animal populations (especially primates) appears as one of the possible preventive measures.

During my stay in Kagoshima, I have improved a lot in my field, including molecular biology and animal care, but also in my own personality. Learning about Japanese culture and experiencing it in daily life was quite amazing and unique. Interacting with Japanese people in the university and during extracurricular activities has strengthened my character in so many ways. I feel proud to have gained such experience with people mixing qualities such as a hard-working spirit with a high level of respect and humbleness.

I enjoyed staying in Kagoshima as the weather was quite comfortable (not a very cold winter) and people very warm and welcoming including my fellow African students who remain a family. The recreational activities held by the university International Office and the foreign students' community in the university (KUFSA): excursions, country talks, welcome and farewell parties contribute to helping foreign students to feel at home. Getting some initiation to Japanese arts such as *origami*, or *ikebana* was interesting as well. Discovering the beautiful scenery around Kagoshima Prefecture remains among my best experiences. The sand bath in Ibusuki, the mountain Kaimon-dake, Yakushima with its world heritage forest inhabited by deer and Japanese macaques, *yakuzaru*. And finally there was no best therapy to relieve a busy week than an *onsen*.

I would like to express my deepest gratitude to the professors and the staff in my laboratory, especially my supervisor and academic advisor Dr. Kohara Kyōko, and Dr. Fujita Shiho (Behavioral Physiology and Ecology). My sincere appreciation is extended to Dr. Masayuki Horie (TAD centre) for his invaluable support and advices on my research work.

I am grateful to Kagoshima City for its child daycare system available at a reasonable cost and very helpful for students with children as in my case. The book tokens and IC cards offered to international students every year by the city were also a great support.

I will recommend Kagoshima and Japan for all the experiences above mentioned but mostly for safety and security reasons. Finally, I will end up with my favorite Japanese concept which is *honne* and *tatemae* and my favorite books: *Hagakure: The Book of the Samurai* by Yamamoto Tsunetomo and *Bushidō, the Soul of Japan* by Nitobe Inazō.





鹿大見てある紀

# Kagoshima University History Exhibition Hall

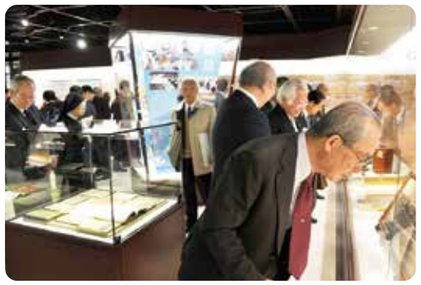
The History Exhibition Hall is a room showcasing historic materials and charting the chronological history of Kagoshima University. This exhibition was created to promote the university's spirit of enterprise while allowing present students to learn about and reflect on their university's history. Through this better understanding of their surroundings, we hope students will form a deeper bond with their university that will encourage their learning process.

This exhibition room was officially opened on the ground floor of the central library in November 2009 as part of the celebrations of the 60th anniversary of university's establishment.

The university's origins can be traced back to the Zōshikan School, which was established in 1773 by the 25th Lord Shimadzu and run by the feudal domain. Visitors to the exhibition hall can follow these 242 years of history running from the historic Zōshikan School to the university's present modern state.

Visitors to the exhibition hall can view historic items from the Seventh Higher School, the predecessor of today's humanities and science faculties, as well as from Kagoshima School of Agriculture and Forestry, today's Faculty of Agriculture. These items include such things as old newsletters from the Seventh Higher School or the notebook of the School of Agriculture and Forestry's first principal, Tamari Kizō, and serve to give us a tangible insight into the spirit of enterprise that has shaped Kagoshima University to this today. The exhibition also contains a panel outlining the university's current and future projects, showing just how far the institution continues to grow.

The History Exhibition Hall is not only for students and teachers but also open for the public to come and have a look. If you are ever in the neighborhood please stop by.



**Kagoshima University History Exhibition Hall**
E-mail: ssoum@kuas.kagoshima-u.ac.jp
Open: 8:30 – 21:30 Entry Free

探検 知の 鹿大

# Research & Development of Samurai Reinforced Hybrid Composite Timber

Shioya Shinichi, a professor in the Faculty of Engineering and a specialist on reinforced concrete structure has developed Samurai hybrid composite timber using local cedar and deformed steel bars that is even stronger than reinforced concrete members and extremely useful in large-scale building projects.

Cedar is one of the most familiar trees in Japan. However, with its high price and competition from overseas timber, it sees surprisingly little use in domestic construction. Professor Shioya Shinichi from the Faculty of Engineering has taken local cedar and has reinforced it with steel bar in order to create the composite timber, which he has named Samurai. In July 2014, Samurai was successfully used in the construction of a new factory building at Yamasa Mokuzai Co. Ltd, a manufacturing corporation for building timber, attracting countrywide attention. While Prof. Shioya has been developing Samurai, similar research has been taking place in Germany; however this overseas research is far from the practical application stage. Therefore it can be said that the new Yamasa factory being constructed using reinforced composite timber is a world-first.

## Strengthening domestic cedar's weak point using reinforcement steel bar

As a specialist in the field of reinforced concrete structure, Professor Shioya has been commissioned to assist in the construction of many building projects outside of the university. In 2005, he became interested in timber structure. This interest would lead to the birth of Samurai. Prof. Shioya initially viewed timber as being too soft, lacking the stiffness needed for large construction projects, which is why he came up with the idea of taking the same methods used in reinforced concrete and applying them to timber. "I had the idea of replacing timberen fibres with steel bar. Owing to this being my speciality, I understood the theory of how to insert the reinforcing bars adequately and deal with any problems that arose during the process. The promising results I obtained after several trial experiments made me think that my idea was definitely achievable," Professor Shioya stated.

In today's modern world, new knowledge, techniques and products are all indispensable in construction. However there has been little in the way of innovation with timber and its use often fails to meet revised building standards acts. Professor Shioya formed a team of structural designers and put forth their idea to the Building Centre of Japan, which, under the Minister of Land, Infrastructure, Transport and Tourism, evaluates and approves various innovative building technologies in order to facilitate their usage in a variety of applications. Professor Shioya's long history and vast experience with methods of construction can definitely be seen as the main reason why Samurai was developed in such a short period of time. "Results came from repeated experimentation and design planning. There were a lot of sleepless nights and it took its toll, however through constant hard work and solidarity between researchers and students we somehow managed to produce a finished product" said the professor.

The steel bar in Samurai only makes up about 3% of the total product; however it is six times stronger than reinforced concrete. Normally in building construction columns and joists are needed for proper support. However Samurai uses a 'carbon fibre reinforced plastic sleeve' to bond the inner steel bars to each other at the joint, eliminating the need for extra support structures and allowing it to perform better than even reinforced concrete. Samurai's other strength lies in its ability to be manufactured easily and at a low cost. "The steel bar can be inserted as a part of the normal glulam timber at manufacturing line. Our trials used materials you can get at any home centre and we invented a way of making large amounts of the carbon fibre reinforced plastic sleeves cheaply using readily available items. The importance we placed on process innovation is the reason this project was completed in the relatively short time of 5-6 years".

Grooves are added to timber lamellas and then set the steel bars into the timber using an epoxy resin. The rest of the manufacturing process is the same as when producing normal glulam timber.

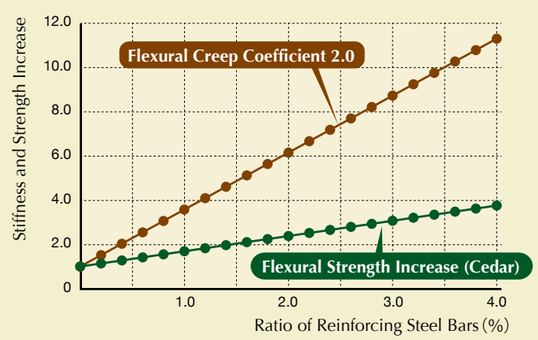
The carbon fibre reinforced plastic sleeve (black inner part) which is used to bond the inner steel bars to one another. The sleeve and the epoxy resin ensure a sturdy bond. The sleeve is incredibly strong, if a pulling force is applied to both sides of the joint, the uncovered steel bar will break long before the sleeve will.


New building at Yamasa Mokuzai Co. built using Samurai. It was successfully built using normally weak Kagoshima cedar that had been strengthened using Prof. Shioya's innovation.

## Using Japanese cedar, Samurai will reduce Japan's environmental burden

Samurai is also a building material that is kind to nature. The manufacturing process for construction timber puts out far less $CO_2$ emission than that of reinforced concrete buildings and steel buildings. With this product, we can also expect a rise in the demand for local cedar for it to be strengthened and used in large construction projects. Recently the government has been trying to promote the use of timber in construction and no doubt Samurai will be at the centre of this initiative. In fact, Professor Shioya is already the vice-president of a research society that promotes and plans to build skyscrapers using timber construction materials such as Samurai. He stated "I wish for buildings to reflect the timber. It has a beauty and warmth that cold metal does not". The day when large-scale buildings are built using materials developed in Kagoshima University is not far off.

**Flexural stiffeness/strength increase with increasing the volume of steel bars in Samurai**




## Shioya Shinichi

**Architecture, Graduate School of Science and Engineering**

Shioya Shinichi – Born 1959 in Kagoshima Prefecture. MSc from Department of Architecture & Architectural Engineering, Kagoshima University, 1984. PhD in Engineering, Nagasaki University, 1994. Worked as an assistant at Kyushu Institute of Design (Presently Kyushu University School of Design) and a researcher at the University of Texas before taking an assistant post at Kagoshima University in 1995. Became professor in 2009. Specialist in reinforced concrete, timber construction and seismic design for building. Member of the Architectural Institute of Japan and the Japan Concrete Institute. Recipient of the Architectural Institute of Japan Encouragement Prize in 1997. He is a first class architect, designer and an authority in seismic analysis.

Professor Shioya and students at Westminster Abbey

課外活動

# Kagoshima University Festival

**Tetsuka Keita, Chair, Kagoshima University Festival Executive Committe**
**BSc student, Faculty of Engineering**

Among all the events at Kagoshima University during the year the one that we students look forward to most is the university festival in November. Last year, I served as the executive committee chairperson for the festival.

Our festival has a 50 year history and is one of the biggest, most successfully and culturally rich university festivals within Japan. It is also a chance for the public to visit the university and the yearly attendance is said to be around 30,000 people. All age groups from the elderly to the youngest children come to enjoy the festivities and it has become an important part of Kagoshima's autumn calendar.

The festival takes place over 5 days with a *mikoshi* parade on the first day to open the festivities. Originally, a *mikoshi* is a portable shrine which gets paraded through the streets during a Shinto festival and is an important part of Japanese culture. Our version has students from all the different university clubs carrying up to 80 different *mikoshi* that they have made themselves through the streets of Kagoshima and is a spectacle I believe to be worthy of nation attention. These *mikoshi* are built to reflect the type of activity the club is involved in and are often very humorous, also the students carrying them dress up in colourful costumes shouting out *wasshoi* as they go.

Over the following three days, the campus is alive with people and energy. There are many stalls with students offering a range of different foods and handicrafts, dance and musical performances, art and scholastic exhibitions and a range of other activities going on throughout the day. It is a very culturally-rich event with over 30 exhibitions ranging from traditional Japanese art, photography shows, tea ceremonies, calligraphy, flower arranging and shōgi, to science-based activities such as biology displays, a planetarium and even horse riding. It is a time for students to show off a years' worth of hard work and it leaves us with a real sense of accomplishment.

Probably the most popular part of the festival is all the different food and drink stalls. There are usually over 120 different ones with a huge range of different products, from basic Japanese fast food such as takoyaki and okonomiyaki to sweets such as waffles and churro. The students cry out for you to come and try their products and these stalls become an important place for interaction between students and the public. There are also many food stalls run by foreign students and they have become more and more popular as the years go by.

On the last day of the festival a relay race and a tug of war is held to bring everything to a close.

There is not enough space to introduce everything at the festival but I shall leave you with one last thought. Barring some help from the teachers, the planning, preparation and running of the university festival is done by the students. Of course, it does not always go smoothly and there are plenty of tough times; however the sense of accomplishment and the friendships that are formed throughout makes it all worth it.

I urge all of you to come and join us for the next university festival and experience it for yourself.





国際交流

# North Dakota State University (NDSU) collaborations and partnership with Kagoshima University

**About NDSU:** North Dakota State University (https://www.ndsu.edu/) is distinctive as a student-focused, land-grant, research university, ranked by the Carnegie Commission on Higher Education in the United States of America among the top 108 public and private universities in the country. Main campus: Fargo, North Dakota, USA.

NDSU, through the Global Institute for Food Security and International Agriculture (GIFSIA), has developed an innovative "Global Studies" program of 3 weeks that has been successfully implemented in September 2014 and 2015 for Kagoshima University students. A total of 11 and 15 students participated in this program in 2014 and 2015 respectively.

The objectives of this program for KU students are: 1) To gain cultural and societal understanding of the world through international visits and cultural understanding from a wider global perspective, 2) To enhance the educational perspective of Kagoshima University and be part of the global community, and 3) To understand the world better and contribute to it. Through this program KU students reflected on broad themes such as culture, technology, social aspects, and politics. Other lectures in Global Studies included Earth Systems and Ecology, Evolution of Human Food Systems & Ecology, Global Warming and other Environmental Challanges, and Global Food Security & Global Food Safety Challenges. Overall through Global Studies the students learned how to understand themselves and other cultures. From this understanding they can think about how we can make life better for others and ourselves.

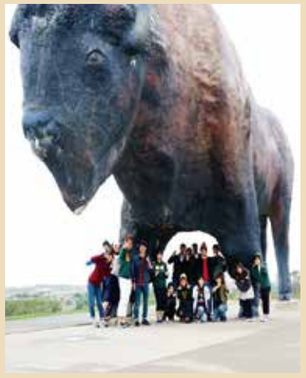
The program so far has been successful with the initial two batches of KU students being positively transformed from the visit. Through this experience their desire for learning and their understanding of the world has improved. This will help them be better students and also be more successful in their careers and have success in serving their communities with a global understanding of challenges and solutions. We look forward to more students coming to NDSU through this program. NDSU has thoroughly enjoyed having these students from KU and they have enriched our community with their desire for learning and deep friendships that have been formed.

In addition we are in discussion to further advance NDSU-KU partnerships through new initiatives where Kagoshima University can send students to North Dakota State University to attend the following programs: 1) One Semester Program for Undergraduates 2) Dual Master Program 3) Sandwich Program for Ph.D. candidates. We look forward to the success of these programs.

KU students building friendships with NDSU students

KU students enjoying an evening out at a local restaurant in Fargo, ND

Morning sunrise in Autumn in North Dakota



KU students at Buffalo Museum in Jamestown, North Dakota

**Comments of KU and NDSU Students:**

**Kari Hoffman-NDSU:** I'm so glad I got to meet two exchange students from Japan. They are only here for three weeks and they leave this Saturday. My friend Sunny and I went out to eat with them at Texas Roadhouse and we had a great time. Sometimes the best experiences are the ones you didn't plan on having.

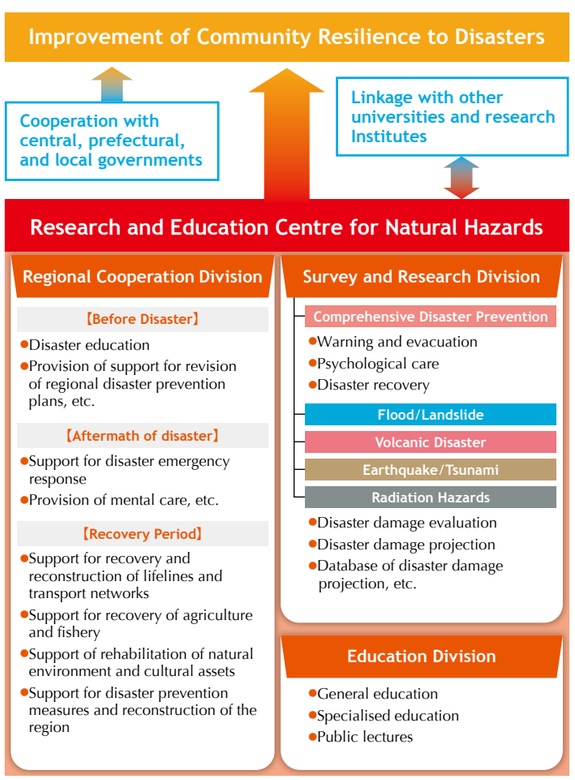
**Amiya Satoko-KU:** I went to NorthDakota to improve my English, however, I learned about not only English skill, but also kindness and different culture. I want to give my kindness to others in JAPAN. I shall never forget these memory. I like ND, comfortable places, I'll come to ND again. Thank you guys.

グローバル GLOBAL 人材育成

# Local Disaster Prevention Initiatives

Activities by the Kagoshima University
Research and Education Centre for Natural Hazards

The severe damage caused by the Great East Japan Earthquake and eruption of Mount Ontake serves as a warning about the need to prepare for natural disasters. Within Kagoshima Prefecture, the volcanoes of Mt. Sakurajima, Mt. Shinmoe-dake and Mt. Shindake on Kuchinoerabu Island have all been very active over the last few years. Southern Kyūshū has also long been an area prone to strong typhoons and heavy rains during the rainy and autumn seasons. The area is also subject to infrequent earthquakes. As a part of the natural world, it is impossible for humans to avoid these disasters and recent urban expansion only increases the risks. In addition to these, the local areas within the prefecture must cooperate to tackle the pressing issue of a disaster and radiation preparation plan for the local nuclear power plant in Sendai.




## Multidimensional Initiatives in Disaster Prevention Research & Education

**Asano Toshiyuki, Director**
**Research and Education Center for Natural Hazards**

In June 2011, the Research and Education Centre for Natural Hazards was established within Kagoshima University in order to establish and reinforce local disaster prevention initiatives. These initiatives aim at the prevention and reduction of the effects of natural disasters in southern Kyūshū and the southwestern island regions through disaster prediction, factual investigation, emergency relief plans and reconstruction efforts. For the sake of the betterment of society through disaster prevention initiatives, the centre is divided into three branches, the regional cooperation division, the survery and research division and finally the education division, as described below. Starting with heads of each division, the centre has approximately 60 staff normally based in departments throughout the university. All members work within the investigation and research division, specialising in one area of disaster prevention. They then also voluntarily participate in the remaining education and local cooperation divisions.

■ The survery and research division promotes disaster research throughout southern Kyūshū and the southwestern island regions, with the results being used by the other two divisions to improve and strengthen prevention procedures. The division also carries out regular disaster prevention seminars for students and outside specialists to share information and better plan for different scenarios.

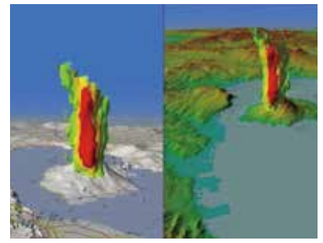
■ The regional cooperation division supports the local community by using the survery and research division's work for problem solving and to create disaster prevention manuals, damage predictions in regards to a major volcanic eruption from Mt. Sakurajima and other surrounding volcanoes and work with the education division to hold information sessions for the local populace. Recently the division has been constructing a local disaster prevention initiatives database using information documented from natural disasters.

■ The education division carries the important task of educating people about the various different characteristics of each type of disaster and how to respond to them adequately. It offers a newly established general education course teaching students about disaster prevention, and this past spring 20 graduates of this course became part of the local disaster prevention group. This, along with various other activities, fosters increased public knowledge about disaster prevention and contributes to the improvement of the university and the local area.

## Volcanic Ash Cloud Predictions

**Maki Masayuki, Professor (Meteorology)**

My area of research is short torrential rain downpours and volcanic eruptions. In regards to these short downpours we, in cooperation with a local weather company, are able to give up to 10 minutes warning of impending localised downpours utilising digital signage and mobile phone alerts. Now, with the cooperation of the Ministry of Education, Culture, Sports, Science and Technology (MEXT), we are creating a disaster prevention database. This database contains information gathered by several different faculties and is used to benefit the local community. My recent research involves the use of weather radar to track the predicted movements of volcanic ash clouds. The main thing that sparked my interest in this research was the large eruption in 2000 on the island of Miyakejima and the past eruption of Mount Unzen. It provided the inspiration behind my practical experiments which showed the radar could be used to gather quantitative data about an ash plume, measuring the height, amount of ash and predicted movement.



I believe this research into volcanic ash to be of great importance to local disaster prevention. Large scale eruptions and the resulting huge amounts of ash will have a great effect on not only the human body but also on infrastructure, tourism, agriculture and fisheries, and so adequate action plans must be in place to lessen the impact.

## Radiation Hazards: Urgent Need to Train Nursing Specialists

**Matsunari Yūko, Professor**
**(Medical Department/Radiation Specialist)**

Our current focus is on nuclear and radiation disasters. A year after the nuclear accident in Fukushima in 2011, we sourced several MEXT medical, nursing and pharmacist specialists to conduct a newly-implemented specialised radiation nursing training curriculum. In nursing school, we are taught about radiology and radiation exposure, however this course gives us real firsthand knowledge and skills from practicing nurses.

Graduates of this course have gone on to work in the university hospital, within the Ministry of Environment or helping those affected in Fukushima. It is expected that this area of study will be officially recognised as a new specialised nursing field in 2016.

Like many other places in Japan, Kagoshima also has a nuclear power plant in Satsumasendai. If an accident ever occurs there, our university must be ready to assist with the short and long-term medical care for people with radiation exposure. Therefore there is a great need for both graduates and current students to learn all they can from their teachers about this field.

## Disaster Prevention Education: Dealing with Environmental Change

**Iwafune Masaki, Professor (Geography/Science)**

In our centre, using Kagoshima as a base, we send professors out all over the country to educate people at local schools, seminars and community centres. For example, between 2012 and 2014 as part of the Kagoshima Prefectural Board of Education's disaster education initiative, we held a seminar for the local population to educate about disasters such as earthquakes, tsunamis, volcanic eruptions, floods landslides, as well as proper evacuation methods. These kinds of activities combined with local evacuation drills raise disaster awareness in both the university and the local populace, leading to a safer community.

Recently 20 students received credentials from the Japan Disaster Prevention Organisation recognising them as local disaster prevention leaders. It is my hope that students like these, along with our centre and other local organisations, will work together to finish creating our Kagoshima University disaster prevention network by next year. Raising the disaster awareness of individuals and encouraging local cooperation will lead to more practical initiatives being put into place to continue to improve Kagoshima's overall disaster resilience now and into the future.

## Briefing on the Emergency Disaster Efforts after the Eruption of Mount Shindake on Kuchinoerabu Island

On July 2nd 2015, the Kagoshima University Research and Education Centre for Natural Hazards in cooperation with the Faculty of Agriculture held a briefing on the emergency disaster efforts after the eruption of Mt. Shindake on Kuchinoerabu Island. The opening address was conducted by the Research and Education Centre for Natural Hazards research and investigation department head, Professor Jitōsono Takashi, followed by the presentation of a special report by the centre's head of education division, Professor Iwafune Masaki.

Professor Iwafune himself has firsthand experience in evacuation centre support as his own family home was damaged during the 2011 Great East Japan Earthquake. Even now he continues to watch over those driven from their homes and conducts monthly surveys to monitor any changes. He now uses these experiences to advise both the evacuees and relief workers involved in the Kuchinoerabu eruption. Using examples and images from the Great East Japan Earthquake, the professor gave the audience an insight into the mindset of people affected by disasters and the changes they go through on the road back to normality.

## The Discovery of a 'Water Spout' Maser Jet Emerging from a Brand New Star

On 15th September 2015, a research group from the Faculty of Science headed by Professor Handa Toshihiro announced that after a 15 month observation of the young stellar object S235AB in the Auriga constellation using the National Astronomical Observatory of Japan's VERA radio telescope they had discovered a 'water spout' maser jet consisting of rotating gas moving at high speeds emerging from the surface of the stellar object itself.

The confirmation of the three dimensional movement of the gases and discovery of the rotating jets of matter from a newly-formed star is a world first. This important discovery could open the way to a greater understanding of the growth process of newly-formed stars. The study group now plans to extend their observation of the gas jets using other domestic and even international telescopes. Professor Handa stated that he hopes they can finally solve the mystery behind the slowdown or 'rotation braking' in newly-formed stars, which has long been the subject of conjecture.

Their accomplishments would be published in the Monthly Notices of the Royal Astronomical Society, one of the world's leading research journals in astronomy and astrophysics.

## Medical Students Join Para-Sports Tournament in Peru

From 17th August till 11th September 2015, five students and Professor Matsuda Fumiyo (Health Sciences) along with three students from the International University of Health and Welfare and an accompanying physiotherapist participated in a JICA short-term volunteer programme in Peru helping disabled people through sports. During this programme, the participants spent time at Peru's National Rehabilitation Centre for Persons with Disabilities (INR) in Lima, and worked with disabled people as a part of their sports support activities. Their main role was to act as training course instructors.

As a part of the instructors training course they participated in demonstrations and para-sport matches with INR patients in Peru's national stadium on 2nd and 3rd September. The cooperation between the Japanese volunteers, INR staff and medical interns led to the 2 day programme being a roaring success that even made the local news. Another sports festival was held on following day, and this time patients from three other facilities in Lima also joined. During this day, the students from Japan took the role of support staff for those participating patients. Throughout their stay, the Japanese students also spent a lot of time with students from Federico Villarreal National University and even made presentations about Japanese culture at INR.

Professor Matsuda was quoted as saying that "Along with the fact that Kagoshima will host the 2020 National Para-Sports Tournament, I wish to create a local support system in Kagoshima with students that will benefit patients".

Medical students joined para-sports tournament in Peru

Wheelchair basketball training

## 3 Students from the Graduate School of Science and Engineering Receive the Poster Award at an Overseas Symposium.

On 15th-16th October, 2015 at the NDSU-KU Joint Symposium on Biotechnology, Nanomaterials and Polymers in North Dakota State University, first-year students Harada Akiyuki, Shimotsu Akiko and 2nd year student Tokada Tarō from the Department of Chemistry, Biotechnology, and Chemical Engineering received a symposium poster award for their presentation work. The three were among 37 separate presentations where they conducted a short introductory speech in English followed by a sixty-minute poster session.

Harada Akiyuki with symposium organisers, Professor Sibi and Professor Cook

Tokada Tarō

Shimotsu Akiko

## Academic Exchange Agreements

- June 2015 ——— agreement formed with the University of Sam Ratulangi (Manado, Indonesia)
- July 2015 ——— agreement formed with Dalian Maritime University (Liaoning, China)
- October 2015 — agreement formed with Nanjing University of Technology (Nanjing, China)
- November 2015 – agreement formed with Sriwijaya University (Palembang, Indonesia)