7 things to know about
TOHOKU UNIVERSITY
Graduate School of Medicine
Message from Dean

Noriaki OHUCHI
Dean
Tohoku University Graduate School of Medicine

Tohoku University has embraced the principles of “Research First,” “Open Door,” and “Practical Mind” since its very inception. We have built on these core values through our mission of fostering leaders and practitioners of health and medicine who are equipped with advanced medical knowledge and techniques, and with strong character. These outstanding researchers can operate on the global stage and lead cutting-edge academic and creative research in their mission to contribute to enhancing human health and welfare globally.
Tohoku University School of Medicine has about 140 years history since the founding in 1872 as Miyagi Prefectural Medical Institution. Presently, the Graduate School of Medicine consists of the Courses of Medical Sciences, Disability Science, and Health Sciences, and the School of Medicine (undergraduate) consists of Medical Science and Health Sciences. Graduate education is carried out in partnership with the Institute of Development, Aging and Cancer and the Graduate School of Biomedical Engineering. Also, undergraduate education is carried out in partnership with the Tohoku University Hospital.

The Graduate School of Medicine is designed to educate and train people with a passion for medical science who can identify issues that need to be resolved and propose solutions to them. We work to foster medical specialists and researchers who have the latest specialized knowledge and an understanding of world-class research, as well as the imagination and dynamism to tackle the challenges posed by unknown and unexplored research areas.

The 21st century is the era of biology-based life sciences, but there are still increasing numbers of people around the world suffering from cancers or infectious diseases that are difficult to cure. The development of advanced medical technology and its clinical application is becoming more important, and may in the future eliminate what are now incurable diseases. That is why we need young people with flexible and broad perspectives, a rich sensitivity, and high ethics. I am convinced that you, along with our medical professionals, will find solutions.

The Great East Japan Earthquake of March 11, 2011 severely affected Tohoku University, yet we have done our all to recover from this natural disaster. In particular, your seniors here at the School, along with young researchers, doctors, and medical specialists, have contributed greatly to the recovery process. Our rebuilding efforts have restored our activities in the community to much the same as they were before. This year marks the first on the road to full-scale recovery. Spirited young people with a desire to follow medicine are most welcome.

*Norio Ohuchi*

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Profile

Graduated from Tohoku University School of Medicine in 1978. Worked as a researcher at the US National Cancer Institute in 1984 and then served as head of surgery at Sendai City Hospital before taking up a post as Professor of Surgical Oncology, Department of Surgery, Graduate School of Medicine, Tohoku University. Previous posts include Vice-Director of Tohoku University Hospital and Director of the Cancer Center. Specialist areas: oncology, breast and endocrine surgery, molecular biology, cancer epidemiology, and nano-medical science.
Tohoku University has been committed to the “Research First” principle since its foundation. Tohoku University was able to attract of young and brilliant researchers who had trained around the world to serve on its faculty, calling upon scholars to not only pursue highly productive research but to also put their findings to work in the teaching of their students. Tohoku University also displayed to the world an unswerving commitment to an “Open Door” policy. Tohoku University accepted graduates from technical schools and higher normal schools, and despite opposition from the government at that time, became Japan’s First University to admit women students in 1913.

Tohoku University has nurtured a tradition of “Practical Mind”, in which the results of cutting-edge research are being put to use for the good of society and the improvement of living standards. Evidence of our pioneering practice includes the establishment of local venture businesses which have contributed to regional industry, and our status as the nation’s center for research on family law; the domestic branch of law which is closely associated with our daily lives.
Two Projects for Regeneration

Sendai

IRIDeS
International Research Institute of Disaster Science

3.11 2011
The Great East Japan Earthquake

Tohoku University Graduate School of Medicine has been recovered from the damage by the Great East Japan Earthquake, and are providing support to two medical-related projects—the Tohoku Medical Megabank Organization (ToMMo) and the International Research Institute of Disaster Science (IRIDeS). The current radiation dose at Tohoku University is similar to the natural background radiation dose in Japan, which will not affect your health. Each local authority has an office for consultation. At Tohoku University, experts in radiation daily monitor the conditions, and the results have been published since March 18, 2011.

http://www.bureau.tohoku.ac.jp/zen/monitoring/english.html
Four Reasons to Choose
Tohoku University Graduate School of Medicine

World-class

High quality

Comfortable

Support
Five Students per Professor/Associate Professor

Noriko OSUMI Professor, Head of Core Center for Neuroscience
Medical Sciences

Master’s program: Two years
Doctoral program: Four years

Disability Science

Master’s program: First term two-year program
Doctoral program: Second term three-year program

Health Sciences

Master’s program: First term two-year program
Doctoral program: Second term three-year program
Seven Mentors Guiding You

Kazuhiko IGARASHI
Biochemistry
Professor, Vice Dean, Graduate School of Medicine

Hitoshi OSHITANI
Virology
Professor

Keiko NAKAYAMA
Cell Proliferation
Professor, Vice Dean, Graduate School of Medicine

Medical Sciences
Hi, I am Lena. I’m originally from Bangladesh and came to Japan in 2001. When I first came to Japan, I was an undergraduate Mombusho Scholar. I finished my study of Japanese at the Tokyo University of Foreign Studies in Tokyo after one year, and then enrolled in the undergraduate program of the Tohoku University School of Pharmaceutical Sciences. After completing my undergraduate degree, I went on to earn master’s and PhD degrees in the same school. After receiving my PhD in March 2011, I joined the Graduate School of Medicine as an associate researcher in Professor Keiko Nakayama’s lab.

“I’d like to find the links between the cell cycle and differentiation”
I’m working on the early development in the animals, using the mouse as a model system. In my undergraduate and graduate research, I examined DNA replication and the cell cycle, with a strong interest in cell cycle regulation. I found some very interesting results regarding the regulation of DNA replication events. For my postdoctoral studies, I have been interested in how the cell cycle regulates cell fate determination. Recently, iPS cell research has shown that a cell can have many identities. For example, when life starts as an embryo, the initial cell divides into two, then into four, and then it doubles and eventually becomes an organism. How does just one cell become so many different cells? Basically, the current thinking is that the transcriptional network controls cell fate determination. However, I have found some interesting cues that suggest cell fate can be changed by regulation of the cell cycle. For example, I’m now investigating a phenomenon in which regulation or restriction of some points in the cell cycle of ES cells causes the cells to lose their pluripotency and become a different kind of cell. So, I’m currently interested in finding the links between the cell cycle and differentiation.

“As a woman and as a mother, it’s very important to maintain a balance between family and research”
Actually, when I came to the Tohoku University Graduate School of Medicine, I was highly impressed by the very well-rounded faculty here, which covers a wide variety of fields in disciplines ranging from deep medical biology to clinical research. Also, this graduate school is equipped with the very latest lab instruments, such as the many next-generation sequencers we have. Moreover, there are shared platforms available for use, as well as cytopathological instruments, medical biological instruments, and so forth. So, one strength is the rich array of faculty members and lab equipment, I think. Another very strong point to me is that this graduate school offers on-campus daycare for children. When I was thinking about doing a postgraduate project, I was also thinking of my family life. I was already in my late twenties and wanted to have a family, including a baby, so, having the support necessary for maintaining a family was very important to me. The main factor influencing my choice of this graduate school was of course my research project, but also the availability of daycare also helped me make my decision. Here, I should mention that Professor Nakayama is a very understanding and cooperative person. When I told her that I was going to have a baby, she was very happy and encouraging. She arranged all the paperwork for getting my baby into daycare. After my child was born, Professor Nakayama was very supportive and helped me get back to a regular schedule in my project. I think as a woman and as a mother, it’s very important to maintain a balance between family and research. I love my research very much, but I also love my family. So I think this graduate school’s support for members with children is a very good point.

“Tohoku University, where you can enjoy a satisfying research experience and daily life”
Having been a student and a researcher at Tohoku University, I can say that this is one comfortable place to do high-level research while maintaining a family. It’s also an excellent place to learn about Japanese culture and make Japanese friends. Also, the university has very good research facilities. If you are interested in doing research at a very high level, please come to Tohoku University here in Sendai, where you can enjoy a satisfying research experience and daily life.
I’m Sarina Bao. I’m a first-year student in the master’s program in Health Sciences at the Tohoku University Graduate School of Medicine. I came from Inner Mongolia in the People’s Republic of China. I majored in economics when I was an undergraduate student. Currently, I’m studying the relationship of weight at birth with adult blood pressure and autonomic nerve activity. People whose weight at birth was higher or lower than average seem to have a higher risk of high blood pressure in adulthood. I’m now investigating this possibility in Mongolians in their twenties for my research project. I use non-invasive methods to take electrocardiogram and blood pressure measurements of healthy young people, and analyze the correlation between those parameters and the subjects’ birth weights.

“I bet you won’t regret choosing to study at the Tohoku University Graduate School of Medicine”

The entrance exam I took last year is still fresh in my mind. I took the exam in Japanese, but it is also offered in English. I studied quite hard because I was really anxious to enter the graduate school, so I was very happy to pass the exam. Dreams come true if you work toward them. As I said earlier, our graduate school accepts foreign students and people from different disciplines. Furthermore, it has all sorts of experimental facilities, and provides access to the latest research literature via the medical library and the Internet. You will experience some difficulties living in another country, but I bet you won’t regret choosing to study at the Tohoku University Graduate School of Medicine.

“The Graduate School of Medicine accepts foreign students and non-medicine majors”

I’ve been interested in medicine since my childhood. My father gave me a lot of books because he is a Chinese language teacher and regards education as important. So, I’ve always been reading books about medicine. I had thought about becoming a doctor but various things made me decide to major in economics instead. When I got an opportunity to come to Japan, I first considered entering a medical school, but since I felt it would be too hard to shift from economics to medicine, I decided to enter the Tohoku University School of Engineering as a research student. After a while, I learned that the Graduate School of Medicine accepts foreign students and non-medicine majors, so I contacted Professor Ryoko Maruyama, my current supervisor, to take the entrance exam and get into the graduate school.
Zhongli Jiang, M.D., Ph.D.
(Jiangsu, People’s Republic of China)

Professor and deputy director of Rehabilitation Medicine Center, the first affiliated hospital of Nanjing Medical University. Takahashi Memorial Prize of Tohoku University in 1989.

I studied at the medical school under Professor Tokutaro Sato, and engaged in research on rehabilitation of visceral disorders. My research topic was to explore the mechanism of oxidative stress on muscle damage induced by experimental hypoglycemia. I chose Tohoku University because Tohoku University, which was established from the Sendai Medical School, was the place where the famous Chinese writer Xun Lu once studied and lived. I think the harmony between subjects in the graduation programs is relatively good. Disability science in particular requires knowledge of many subjects. The course setting is reasonable and the education concept is excellent. The graduate school also has some of Japan’s best facilities and first-class teachers. These advantages inspired me reaply to Tohoku University five years after graduation to engage in for research on higher cerebral dysfunction. Tohoku University is a very good learning platform. As long as you work hard, there will be a harvest.

Nannan Guo, Ph.D.
(Inner Mongolia, People’s Republic of China)

Postdoctoral fellow in Dr. Sahay Amar’s lab at Massachusetts General Hospital, Harvard University.

I went to Professor Noriko Osumi’s lab for my first postdoctoral training after I graduated from the Neurobiology Institute of Fudan University in Shanghai, China. In the year of my graduation from Fudan University, I met Professor Osumi at the workshop between Fudan University and Tohoku University in Shanghai. I was intrigued by her idea that the alterations in postnatal hippocampal neurogenesis may affect neural circuits during the early postnatal period, and then contribute to perturbed affective behaviors and impairments in cognitive functions in adulthood. I then decided to join her lab to continue my research in neuroscience. My research in Osumi Lab focused on understanding the critical role for the adolescent hippocampal neurogenesis in the subsequent establishment of thesensorimotor gating neural circuit and implicated the biological vulnerability during a defined postnatal period against the onset of various mental illnesses, including schizophrenia. In particular, my research was directed towards discerning a scenario that adolescent hippocampal neurogenesis is critical for normal GABAergic circuit establishment, of which abnormality may result in an imbalance of the excitatory/inhibitory signal ratio (causing “reduced signal salience”) that is relevant to an endophenotype of psychiatric disorders. I think there are lots of strengths in the Graduate School of Tohoku University, such as a nice research environment, friendly and professional colleagues, and many chances for domestic and international academic communication. Also, there were several academic societies among the labs in the graduate school, which was of most value to the students and postdocs there.

Qi Guo, M.D., Ph.D.
(Hebei, People’s Republic of China)

Associate professor in the Department of Rehabilitation and Sports Medicine at Tianjin Medical University.

I received a doctoral degree in Internal Medicine and Rehabilitation Science from the Tohoku University Graduate School of Medicine in 2008. I mainly studied exercise therapy for treatment of lifestyle-related diseases, including the mechanism of such therapy. After graduation, I stayed at Tohoku University for another two years to get more experience in the Division of Nephrology, Endocrinology and Vascular Medicine before going back to China. The reason I chose Tohoku University Graduate School of Medicine was to earn a doctoral degree in Internal Medicine and Rehabilitation Science, because Tohoku University is one of the few universities in Japan that offers both clinical courses and a doctoral program in rehabilitation science. I wanted to learn rehabilitation medicine but since the field was just starting to develop in China at the time, I decided to study abroad. I chose Japan rather than Europe or North America because I thought I would be able to use my expertise more effectively in China due to the similarities of lifestyle and medical philosophy between Japan and China. Tohoku University conducts advanced research and its professors are recognized worldwide for their contributions to various fields. Also, compared with large cities like Tokyo and Osaka, Sendai is a middle-sized city that offers a good, relaxing environment for study.
Educational Courses
- Genetic Counseling
- International Graduate Program in Human Security
- Molecular Imaging
- Tumor Specialists Training
- Medical Physicists
- Advanced Clinical Research Supporter Training

http://www.med.tohoku.ac.jp/english/

Scholarship
Japan Student Services Organizaiton
http://www.jasso.go.jp/

For International Students
Center for International Exchange Tohoku University
http://www.insc.tohoku.ac.jp/

Study in Japan Comprehensive Guide
http://www.studyjapan.go.jp/

Gateway to study in Japan
http://www.g-studyinjapan.jasso.go.jp/

Other Resources
Ministry of Education, Culture, Sports, Science & Technology of Japan
http://www.mext.go.jp/

Ministry of Foreign Affairs of Japan
http://www.mofa.go.jp/

Sendai, the Heart of Northeast Japan

Sendai is the largest city with a million people and the center of the arts, culture, business, and politics in the Tohoku region. Sendai has been an academic city for over a century. Both domestic and international students are learning together and carrying out their research in the numerous advanced research institutions in Sendai. Sendai is also known as a city of music. Sendai hosts many international events including Sendai International Music Competition attracting maestros from around the world. In addition, Sendai offers you many place to go and events to see. Near Sendai, there are various tourist sites such as Matsushima, one of the “Three Views of Japan,” or Mr. Zao, which is famous for the O-kama (rice cooker), a crater lake. Sendai makes you enjoy many events, for example, the Sendai Aoba Festival (Spring), the Sendai Tanabata Festival (Summer), the Jozenji Streetjazz Festival (Autumn), and the Sendai Pageant of Starlight (Winter) all year around. Here, you can find a lot of attractions about Sendai and Japan.

Logo

Tohoku University, formerly Tohoku Imperial University, was established in 1907 as a third Imperial University in Japan. The university was praised as a light on Tohoku area in the celebratory song at the opening ceremony. This expresses our principle searching the truth and leading people as the Big Dipper guides sailors to the North Star. The Big Dipper has been used as a motif of the Faculty of Medicine since October 1970. It was selected to be the official logo of the Graduate School of Medicine and School of Medicine in September 2008.