President's Address at the 2017-Autumn Saitama University Entrance Ceremony

All trees in this one campus are beginning to change their own colors in a competition for diversity, as if they welcome you on this pleasant autumn day with a full of hope. Congratulations on your admission to Saitama University. As the SU President, I would like to extend a cordial welcome to all of you.

In addition to 607 graduate students in the spring, we have 70 newly admitted students in this autumn, the 42 and 28 of which are master's and doctoral students, respectively. Furthermore the 63 of them are from 20 overseas countries, namely Afghanistan, America, Bangladesh, Brazil, Cameroon, China, England, India, Korea, Laos, Malaysia, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, Senegal, Sri Lanka, Thailand, and Vietnam. It is a distinctive entrance ceremony with full of diversity corresponding to the SU vision; "*Saitama University, All in One Campus at Metropolitan Area Saitama – Embodiment of Diversity, Synergy and Integration*". I would like to express my deep respect for your continuing study at SU Graduate School under your restrictive circumstance, and sincere congratulations to your family who has been supporting you.

This week is the Nobel Prize week, as many of you may be interested in it. I am afraid, however, most of you may not know that Prof. Takaaki Kajita, the winner of the 2015 Nobel Prize in Physics graduated from Saitama University in 1981. I had several chances to talk with and listen to him. He says, "Probably it is at the time of graduate student that I wanted to be a physical researcher. I had the privilege of *encounter*ing with respected professors, good friends, challenging research projects, and, as a result, I was able to discover the small mass of neutrino". And he continues, "Nobody knows when he has an important *encounter* that really decides his life. You should open your eyes and heart widely to prepare for the time when you *encounter* important person and/or thing".

According to the message from Prof. Kajita, the university is an entrance to the scholarly activity and the graduate school is a place of scholarly activity on the basis of research. Whether you are a master's student or a doctoral student, your studies at the graduate school are centered on research. Therefore, let me first introduce research-related issues raised by an expert, who is a researcher in the evolution of the universe, Emeritus Professor Satoru Ikeuchi, Nagoya University. In his book entitled "*The way of thinking and learning in science*" (Iwanami Shoten, Publishers, 1996), he states as follows.

"For researchers, there seem to be roughly two types; *differential type* and *integral type*. *Differential type* is a type that thinks thoroughly the details of the problem with excellent technique. Integral type, on the other hand, is a type that looks at the problem from a broader perspective and thinks about the direction to go with the overall consistency. It may be said that the former is *eye of insects* and the latter is *eye of birds*. It is a truly capable researcher to have both eyes, but such a person is rare and many people seem to be inevitably biased toward either their best one." Prof. Ikeuchi continues.

"I am the latter *integral type*. By looking at the flow of research, I always think about problems that nobody has noticed yet and that are likely to become important in the

future. It is simply because I am weak in solving individual problems and I will be easily beaten in discussions with *differential type* researchers. At the beginning I was worried a lot about this, but I have decided to consider that it is only a different path of thinking for each person and to search for a problem that suits me."

During your doing research at the SU Graduate School, it seems important to occasionally look at your research from such a point of view. It will lead to an *encounte*r with your own research subject and research style that suits you. However, Prof. Ikeuchi points out another important issue as follows.

"Even basic science reflects the trend of society, and the development of research and the spread of research field are also strongly influenced by the society and the times. The research itself is quite personal but the research environment and academic content are not limited to individual intentions and qualities. Even though we intend to select them with free will or our own interests, they are greatly affected by surrounding conditions and social atmosphere."

I do believe that the research is universal, but that it is important to keep his issue in our mind. In this sense, because all of you are conducting research at SU in Japan, I would like to briefly talk about the current trends in science and technology in Japan, and the environment of diversity and integration in Saitama University.

In 2016, the Cabinet of Japan resolved the fifth Science and Technology Basic Plan of Japan, which is a plan of strongly promoting the science and technology innovation policies for coming five years. The Basic Plan states as follows. "Japan and the world are now in the midst of turbulent times. Can the science and technology innovation contribute to domestic and international, sustainable and inclusive development? It is demanded for the fifth Science and Technology Basic Plan to respond to this question, and to become the compass, which leads Japanese citizens as well as world people to truly richer future."

It is very stimulating, but we should understand it as creating the richer futures in turbulence is duties of each and every one of us living in now. In the Basic Plan, more specifically, creating a world-leading "super smart society"; Society 5.0, is declared. The "super smart society" is an ideal form of our future society and will bring wealth to the people through an initiative merging between the real world and cyberspace by leveraging Information and Communication Technology.

Following this Basic Plan, Keidanren (Japan Business Federation) made a policy proposal entitled "Toward realization of the new economy and society – Reform of the economy and society by the deepening of Society 5.0". The proposal clearly states that it is imperative to break through the five walls for realizing the new economy and society in which discontinuous and disruptive changes are expected to occur. Those five walls are the walls of ministries, legal system, technologies, human resources, and social acceptance. Among these, regardless of your specialties, what I want you to understand is the "wall of social acceptance". That is, the examination of ethical issues and social implications, such as definition of individual happiness, is indispensable no matter how

significant the technological innovations are. In this sense, the knowledge of science and technology is insufficient and the knowledge of humanities and social science is necessary.

As I already mentioned, the university's vision is "*Saitama University, All in One Campus at Metropolitan Area Saitama – Embodiment of Diversity, Synergy and Integration*". Over the past 68 years since it was established in 1949, SU has grown into a middle-sized national university with five undergraduate schools and three graduate schools in the academic fields of liberal arts, economics, education, science and engineering. The university is distinctive in that all the schools are gathered in the one campus in Saitama, which is advantageous in many respects, being conducive to research and learning in the integrated fields of humanities and science.

SU has been adding to its brightness more and more by pushing forward two functional enhancements. The first is the base reinforcement by extensively enhancing the functions of fundamental/applied researches and education for global human resource cultivation, based on the university mission being the creation and succession of intellect. The second is the self-branding as SU by aggressively taking a role of regional centers to activate the metropolitan area around Saitama. In 2016, for example, the Advanced Institute of Innovative Technology was established at SU for promoting a concrete utilization of the intellect by the industry-university-government collaboration.

The new science and technology goes beyond the specialized framework of the past and is trying to comprehensively cover the object with a new method. It can be said that science extends not only to natural phenomena but also to fields dealing with human, social history and activities. Therefore, you should not narrow yourselves the possibilities of the future by insisting on your specific field of research. Let's embody together the diversity, synergy and integration by fully exploiting the environment of Saitama University where the various academics coexist.

I do want all of you to work furiously on your researches with out-of-the-box thinking by repeatedly challenging and failing to aim for higher states. The important thing is, however, that each of you sometimes considers "what is your research for" and reconsiders the meaning of your own research after experiencing certain research activities. Please keep looking at and thinking about things well, and do not miss the opportunity of your own *encounter*. I greatly expect your good research fight at Saitama University.

Finally, I sincerely hope that your student life at Saitama University will be a meaningful and productive one.

October 5, 2017

Hiroki Yamaguchi, Dr. Eng.
President, Saitama University