

AIZU

THE UNIVERSITY OF AIZU

会津大学

TENTH YEAR COMMEMORATIVE MAGAZINE

THE
UNIVERSITY
OF
AIZU



Greetings



The Governor of Fukushima Prefecture
Eisaku Sato

I take much pleasure in extending my greetings for the publication of the “University of Aizu Tenth Year Commemorative Magazine.”

The University of Aizu, within the background of advancement of information science technology and inclination towards information-orientated industries, was founded in 1993 with a special mission of playing an active role in the development of scientific information technology and nurturing specialists who would be capable of further developing such technology. The inspiration of local citizens and a great deal of effort by people involved went into the establishment of the University of Aizu as the first four-year university in Japan solely dedicated to computer science and engineering, with unique systems for comprehensive and systematic education and research.

Efforts and work by the founding president and many others who strove for creation of a university for the twenty-first century have seen pioneering work such as the improvement of students' English communication abilities, advancement of information literacy, and open and international recruitment for faculty positions, since the opening of the university. These activities have been highly evaluated not only domestically, but also internationally.

Furthermore, the University of Aizu Graduate School was established in April, 1997 with a Master's Program, and the school's Doctoral Program was established in April, 1999. These two graduate programs have produced nine PhD's doctors so far and have nurtured excellent computer scientists who now possess the ability to play active roles at an international level. The university has also been steadily conducting various activities as an international university, for example, a scientific cooperation program between the University of Aizu and two leading universities in Russia was established in June last year.

With regard to contribution to the local community, the Multimedia Center, which had been working on popularization and dissemination of multimedia technology amidst a background of increasing expectations for contribution of intellectual properties by universities, was restructured into the University-Business Innovation Center in April of 2003 in order to comprehensively facilitate university-industry cooperation. The center is in operation and is actively working towards collaboration between the university and industry.

It is with great pleasure that we will celebrate the tenth anniversary of the University of Aizu along with these ongoing activities.

I wish to express my sincere gratitude to local citizens and the citizens of Fukushima Prefecture for the understanding and support tendered to the university.

In response to expectations from industry and local communities, the university's objective is to become a model university in this area. Universities now are in a totally different environment, with issues including the decrease in the population of eighteen-year old students, the diversification of higher education, and the reorganization of state-run universities into independent administrative corporations. In addition to this, these issues must all be dealt with under severe financial limitations.

I sincerely hope that the university, with its founding mission statement, “to Advance Knowledge for Humanity,” will continue to fully perform its role in contributing to the development of local communities and the improvement of Fukushima citizens' life styles.

At the same time, I would like for the university to keep in mind our Prefecture's motto, “A Beautiful Fukushima to be jointly developed by citizens,” while promoting education and research that the Prefecture's citizens can take pride in, and establishing further cooperation with prefecture-promoted projects.

Taking the opportunity of the publication of the Tenth Year Commemorative Magazine, I again wish to express my heartfelt gratitude to those who have worked diligently for the development of the university over the last ten years.

Greetings



The University President

Tetsuhiko Ikegami

April 2003 marked the tenth anniversary of the establishment of the University of Aizu. Thanks to the warm support of the Governor of Fukushima Prefecture, the founding authority, and all parties concerned, and the everyday effort made by faculty, administrative personnel and students, our university has steadily made progress. The Graduate School was established in April, 1997, as originally planned at the establishment of the university. Doctoral degrees were conferred by the Graduate School in Computer Science and Engineering to five students for the first time in March of 2002. From this perspective, the university is approaching completion in terms of organization and content. Moreover, the university was accepted on September 18, 2003 by the “Support Program for University Education with Distinctive Characteristics,” which was inaugurated this fiscal year by the Ministry of Education, Culture, Sports, Science, and Technology (MEXT.) This program aims at improvement of higher education for the future in Japan, by selecting universities that

have implemented excellent projects to improve education and by providing information regarding the selected projects on a wide-scale basis to the public. Under these circumstances, it gives me great pleasure to present the University of Aizu Tenth Year Commemorative Magazine to all of you who have supported the University of Aizu.

Although I joined the university as Vice President in 1998, my first encounter with the university was, in fact, just before the establishment of the university, when the Director General of the General Affairs Department of the Government of Fukushima Prefecture visited me as a part of recruiting activities for faculty members. At that time I was with NTT Research Laboratories, and was deeply impressed by their unique plans and enthusiasm. What surprised me more after taking my post at the university was that I heard from many people, including leading members engaged in higher education at MEXT and professors from other universities, who mentioned that they were involved in preparations for the establishment of the University of Aizu. The University of Aizu was established with the enthusiasm and expectations of many people. This group of people includes Dr. Isao Amagi, who still provides the university with advice as the Chairperson of the University of Aizu Advisory Council and has made great contributions to realization of higher education in Japan, and former Minister Atsuko Toyama of the Ministry of Education, Culture, Sports, Science, and Technology, who was in the Higher Education Bureau at that time. In the late 80's, it became evident that there was a limit to the postwar education system, and the Ministry of Education at that time initiated formation of the basis for university reforms that are underway now. I believe that ideas that would have been difficult to realize at national universities in those days were incorporated into the founding principles of the University of Aizu. I would say it was no mere coincidence historically that Aizu was chosen as the starting place for those reforms.

I was also moved by the keen desire of the people of Aizu to have an institution for higher education, the origins of which have roots in the Boshin War. After listening to the history of Nisshinkan, a school of the Aizu clan, and through exchanges with the Aizu Area Foundation for the Promotion of Education and Science and the "Aizu Sangaku Konwakai," or the Association for University-Industry Cooperation, I realized the great expectations that the people of Aizu had for the University of Aizu. In addition, by exchanging views and ideas with young executives, including members of the Aizu Wakamatsu Junior Chamber, the vitality they have when talking about the future rather than looking back, often helps me find a way out of difficult situations in which I have trouble coming up with fresh ideas.

Times have changed very rapidly. It is my mission to "lay new foundations" for the coming ten years. Over one thousand four hundred graduates have already taken active parts in the industrial or academic world and are the main product of ten years of effort at the university. With the university mottoes, "Student education is the first priority," and "Shine as Pioneers!" I am determined to continue to work in the field of computer science and engineering, which is still a challenging field in Japan, in cooperation with faculty members who also work on their research from global perspectives.

This magazine will remain forever as a record of the past ten years of the university. I apologize for the fact that this magazine cannot fully cover the devoted efforts of many people who have contributed towards the development of the university. Lastly, I wish to express my deep appreciation for all your effort and request that you maintain your support of the university in the future.

History, Founding Principles, and Distinctive Features of Establishment of the University of Aizu

1. History behind establishment of the University of Aizu

“Here in Aizu, there is a long history and strong tradition of devotion to education. The area, however, was the only area in Fukushima Prefecture, where no higher-educational institutes were established in the midst of historical moves after the Meiji Restoration, with the exception of the former Aizu Prefectural Junior College. This fact has spurred local people on to call for the establishment of a four-year university in Aizu. I believe that establishment of a four-year prefectural university which can foster youth capable of handling and developing information-related science technology to meet demands and requests from the local community will help realize one of Aizu's dearest wishes held for the last one hundred twenty-plus years. I also believe that establishment of such a university will be the best way to promote well-balanced development and equal opportunities for education in this prefecture. For these reasons, a decision was made to establish the University of Aizu, and preparation of the university is underway.”

It was on April 14 of 1993 that the first entrance ceremony was held at the University of Aizu. The preceding quote is an excerpt from an address made at the ceremony by Eisaku Sato, the Governor of Fukushima Prefecture. “One of Aizu's dearest wishes held for the last one hundred twenty-plus years” refers to the fact that the local movement to open this university was significantly strong and extensive.

2. Founding principle and features of the University

The founding principles for the establishment of the University of Aizu include: “from this region to the world,” and “to Advance Knowledge for Humanity (to promote discoveries and inventions which will contribute to the peace and prosperity of the human race.)” On April 20 of 1994, Governor Sato made the following statement at the commemorative ceremony for the first anniversary of the establishment of the university.

“The University of Aizu was established, as the very first four-year university in our nation specializing solely in computer science and engineering, to conduct comprehensive and systematic education and research in this field. Under the banner of the founding principle of the university, “to Advance Knowledge for Humanity (to promote discoveries and inventions which will contribute to the peace and prosperity of the human race,)” which also happens to be today's theme for the panel discussion, (former) University President Toshiyasu Kunii and other university personnel have been making every endeavor to make this university a university to be proud of in the international community, as well as domestically for the forthcoming 21st century, through university education and research in computer-related fields.”

“I think that the pioneers who will take charge of cultivating a new era for the 21st century must be youth who are capable of settling down in the local community, yet cross over local barriers to

dedicate themselves to the creation of a new culture, universal property for humankind. I also believe that it would be a great achievement for this university to produce such promising individuals to society and for Fukushima Prefecture to eventually be able to play an honorable role in contributing to the peace and prosperity of the human race.”



The founding principle of the university has been integrated into the university logo as shown above. Inside the inner circle, the skyline at the top of the logo depicts a mountain ridge, while the horizontal lines at the bottom of the logo illustrates the surface of a body of water. These respectively represent Mount Bandai and Lake Inawashiro, which are symbols of Fukushima Prefecture. The university name is written at the center of the logo. “To Advance Knowledge for Humanity,” (the founding principle of the university) and “1993,” the year of the establishment of the university have been placed inside the outer circle.

The field of computer science and engineering was chosen to realize the founding principles above by Fukushima Prefecture, the founding authority of the university, because of the wide range of applications of computer science and engineering, and because this field plays a major role in intellectual production technology, the fastest growing and most promising field among the highly advanced and innovative fields.

Also, it was a great challenge for the University of Aizu to name its school “Computer Science and Engineering,” instead of “Information Science and Engineering” a vague term commonly used in Japan.

The first distinctive feature of the University of Aizu to be highlighted is the scale of the university's program in the field of computer science and engineering. It is stated that, “The university plans to realize computer science and engineering departments that, as an entity, will be of the greatest in scope and in level in the world, in order to ensure the feasibility of the university's aims” on page four of the Japanese version (page five of the English version) of the 1993 edition of the university brochure. The university preparation plan is described as having been designed with the aim of producing sixty graduates from the Doctoral Program on an annual basis, which is double the number of all doctoral graduates from this field per year for the entire nation, when the equipment of the university is complete. An admission capacity of one-hundred twenty students for the Master's Program was determined as double the number of graduates from the Doctoral Program. In the same way, an admission capacity of two-hundred forty students for the Undergraduate School was determined as double the number of graduates from the Master's Program.

Fukushima Prefecture completed preparation of the university facilities by 1995, and ensured employment of faculty members in relevant technical fields. The “Study and Research Guide in Computer Science-Profiles of Universities in the USA,” which was published by Springer-Verlag New York in 1992, introduced the top forty universities in the U.S. computer science field as of 1991, particularly focusing on the number of faculty members, the size and features of the programs. According to the criteria in this guide, only two universities were considered as superior to the University of Aizu as of 1995. In terms of the number of faculty members in relevant fields,

one being Carnegie Mellon University with eighty six faculty members, and the other being the University of Illinois at Urbana-Champaign with an enrollment of one-hundred ninety students, in terms of the number of Ph.D. students in their doctoral program. (Note: Concerning the university graduate school, the figures used in comparison to data from the guide book, were based on the university plan, since the university graduate school had not yet been fully completed.)

Today, as a leading university in the field of computer science and engineering, the university is continually making an effort to nurture computer scientists, aiming toward the realization of the university's founding principles determined when establishment of the university was planned.

The second distinctive feature of the university is its systematic curriculum. The idea behind the university curriculum can be explained by referring to a short excerpt from the results of a survey conducted to draw up the curriculum for the university.

“Mere presentation of the entire system of computer science by understanding it from a fixed viewpoint and by sketching its current situation is not convincing enough to provide the university with a foundation for a curriculum in computer science which has achieved significant development, not on a yearly scale but on a daily one. It is desirable to understand the process in which a curriculum for computer science, which was initiated based on algorithms for numerical calculation decades ago, has achieved rapid growth, has nurtured talented individuals, has established a systematic subject for study as a science for diverse and high-level computing as a whole, and has reached the current situation where quite-complete curriculums, and textbooks are available. This understanding, then, makes it possible to predict the development of computer science in the future.

First, therefore, I have decided to provide you with a nearly complete translation of the ACM (The Association for Computing Machinery) curriculum as basic material for reference. This is the only full-scale curriculum which covers the entire computer science system and has made a steady developmental progress from a historical standpoint. The ACM's computer science curriculum has been revised almost every ten years since 1968. The IEEE computer society (The Institute of Electrical and Electronic Engineers) has also participated in this activity after the revisions began. The development of the ACM curriculum has become a historical record for the progress of the academic system for computer science. The curriculum was created and adopted as a course to foster talented individuals. The core of computer science has steadily been taught at mid-level universities in the US through this curriculum. Advanced universities, such as UCB (University of California at Berkley), MIT, Stanford University, and Carnegie Mellon University, have also adopted the ACM curriculum as their base, and developed their curriculums by adding other courses based on their own philosophies, policies, and goals.”

The third distinctive feature of the university is that the faculty are internationally diverse. Faculty members are publicly and internationally recruited for open positions, in principle. This, as a consequence has introduced Japanese universities to university management with international standards.

The fourth distinctive feature of the university is its computer free-access environment. As consideration has been given to the rapid progress of computers, the university is provided with computers on a three-year lease basis, so that students can have access to the most updated technology. Since the opening of the university, a computer environment has been which is one-of-a-kind in the world, giving students first priority by offering workstations with free access 24 hours a day through ID card control. It has recently been found that this environment has had a positive

effect on forming a relationship of mutual trust between the university and its students.

The fifth distinctive feature of the university is its English education. The university has continuously emphasized its English education, aiming at fostering professionals in computer science and engineering, which is not available at other universities.

The sixth distinctive feature of the university is its project-type education. University education is conducted through a series of research projects, starting with “Student Cooperative Course Projects(SCCP)” which allow students to participate in research immediately after admission to the university and leads them to their themes for their graduation research, Master's thesis, and Doctoral thesis.

The seventh distinctive feature of the university is its support for contests-involving education objectives. This is relatively new feature, which was informally started around 1997. The university has become deeply involved in promoting this educational style, ever since President Tetsuhiko Ikegami offered the university campus as one of the Asia regional contest sites prior to the 2003-04 ACM International Collegiate Programming Contest.

The eighth distinctive feature of the university is that the university has taken pioneering steps in the University-Industry cooperation movement. Efforts by former University President Shoichi Noguchi led to the establishment of UBIC (University-Business Innovation Center)in 2002. UBIC has given students an opportunity to nurture their entrepreneurial spirit.

The ninth distinctive feature of the university is integration of information and communication, which was promoted by former University President Noguchi. The Core and Information Technology Center(CITEC,) which was established in 2000, has played a major role in this regard.

The tenth distinctive feature of the university is the idea of “Priority to the students” which President Ikegami introduced as a principle of university management. This idea also clarified the direction of university reform in Japan.

3. Assessment of the Project

The Ministry of Education, Culture, Sports, Science and Technology inaugurated a “Support Program for University Education with Distinctive Characteristics” in FY 2003 for the purpose of selecting aggressive and excellent projects in education conducted by universities and making these projects widely-known to society.

Our university established a project team which worked on details of the application and submitted the application in July. On September 18, our application entitled “An ultra-modern student-centered approach to education in computer science and engineering” was accepted. There were six hundred and sixty-four applications from all over Japan and eighty applications were accepted. The acceptance rate was 12.0%.

Our accepted project is outlined below.

1. Advanced Computer Education and Curriculum Prepared with Resourceful Ideas

The university has provided students with Student Cooperative Course Projects as part of “top-down education,” for which students are exposed to state-of-the-art achievements in technological research and/or development from their first year at the university. A well-organized curriculum which nurtures beginners into specialists is also provided to students.

2. English Education

The university has been active in providing thorough English education through instruction by a large number of non-Japanese faculty members. Instruction for nearly 60% of Upper Division Courses is given in English, and students are required to write their graduation thesis in English.

3. Computer User Environment

The university has utilized a world-class computer environment, where workstations, installed with the principle, “one workstation per student,” are available for use 24 hours a day. In addition, the university has a specialized organization for management and administration of these facilities and equipment.

Chronological Table: History of the University of Aizu over the last ten years

Date	Event
December 1, 1992	Approval by the former Ministry of Education for the establishment of the University
April 1, 1993	Opening of the University
April 14, 1993	Entrance ceremony of AY 1993 (Location: Aizu-Wakamatsu City Culture and Welfare Center)
July 16, 1993	Commemorative ceremony for the opening of the University of Aizu
April 20, 1994	The University of Aizu 1st anniversary commemorative ceremony, featuring a lecture by Mr. Ryotaro Shiba (Location: Hotel Hamatsu in Koriyama City)
April 1, 1995	Establishment of the University of Aizu Multimedia Center
July 24, 1995	Ceremony for celebrating completion (of the University Auditorium)
December 19, 1996	Approval by the former Ministry of Education for the establishment of the University Graduate School
March 21, 1997	First University graduation ceremony
April 1, 1997	Establishment of the Master's Program
April 1, 1997	Assumption of the office of President by Dr. Shoichi Noguchi
December 22, 1998	Grant of approval by the former Ministry of Education for the establishment of the University Graduate School (Doctoral Program)
April 1, 1999	Establishment of the Core and Information Technology Center Establishment of the Doctoral Program
April 1, 2000	Admission of the University to the Japan University Accreditation Association (Foundation).
September 18, 2000	Visit by the Prince and Princess of the Imperial Family to the University campus.
April 1, 2001	Assumption of the office of President by Dr. Tetsuhiko Ikegami
July 7, 2001	Exhibition of the “Future Science College” and the “Gigabit Theater” at the Future Industry Hall in the “Utsukushima (Beautiful) Fukushima Expo”
March 1, 2002	Conferment of a doctoral degree to five individuals from the University Graduate School
April 1, 2002	Opening of the University-Industry Cooperation Center, the former University Multimedia Center with enhanced functions
June 24, 2002	Establishment of an agreement among the University, and St. Petersburg Electrotechnical University and St. Petersburg Institute of Fine Mechanics and Optics.
September 18, 2003	Selection of a University proposal to the "Support Program for University Education with Distinctive Characteristics" by the Ministry of Education, Culture, Sports, Science, and Technology
October 23, 2003	Commemorative ceremony for the tenth anniversary of the establishment of the University