Kajaani University Consortium

ANNUAL REPORT 2006
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The Kajaani University Consortium researches and educates as well as promotes the effective transfer of research findings to business life and to those responsible for the regional development while acting as the regional co-ordination and resource centre for continuing education. The areas of speciality are the education and research in Education, Biotechnology, Sports Technology, Measurement Technology, Information Processing Science as well as humanistic-social science. The co-operation contract of the Kajaani University Consortium with five partner universities was renewed for the period of Jan 1, 2007 till Dec 31, 2009.

The new strategy of high-quality research of the Kajaani University Consortium is to operate the Master's and Post-Graduate Schools close to the business life directly with the companies. According to the microcosm idea, the University Consortium can prosper in the global competition through sufficiently specialised education and research units by networking with the international top clusters of know-how.

Kajaani maintained its position as a popular place of study. 1300 applicants wanted to start teacher's studies in the applications of year 2006 – the most popular being the education for class teacher with its 859 applicants. As many as 127 Master's Degrees were completed in the Teacher Training Department; more than a half of all the graduates of the Faculty. The first students graduated in the Master's Programme in Cultural Industry. The qualification training of Art teachers, Virt@, also continues in Kajaani for the third period, together with the University of Art and Design. Students qualifying as Special Needs Nursery School Teachers graduated.

The Laboratory of Biotechnology celebrated its 10th anniversary and the first public defence of doctoral dissertation was arranged in Sotkamo on June 16th. The title of the dissertation was Effect of heat denaturation of bovine milk beta-lactoglobulin on its epithelial transport and allergenicity. Another public defence of doctoral dissertation was arranged in Kajaani on December 8th on the subject of Pedagogical Background of Immersion Teaching (Kielikylpyopetuksen pedagoginen tausta). The target of the measurement technology is top research which can be commercialised. The CreaTol project built a learning environment based on project learning and entrepreneur-like way of operating and a usability laboratory at the Department of Information Processing Science.

Co-operation with the Kajaani Polytechnic became more intensive. The event of "2C4U" brought more than 2100 students of post-comprehensive school level to visit the academic level training in Kajaani. The teaching co-operation will be made more intensive also for the libraries and international exchange; this will ensure the researchers, students and educators a more long-term development of services.

The staff of the University Consortium was about 240, and the total financing was 16.5 million euros. The share of external financing was about 45% and there were almost 450 projects. On December 31st, 2006, the number of actual students enrolled in the University were 919; of these 162 were participants in the Master's Degree programmes. 154 were new basic degree students and 80 post-graduate students. 136 Master's Degrees were granted, and three public defences of doctoral dissertations were arranged. In the open university studies in Kajaani, 108 calculated full student years were taken. The 50 updating education courses of the Unit of Continuing Education were participated by 2113 people. The units of the University Consortium (2006) published 75 scientific publications and 95 other publications.
EVENTS 2006

Feb 6  ‘Health Effects of Berries’ Seminar, Kaukametsä, Kajaani
Feb 9  Training Day for the RusLex Project in Kajaani
Feb 10  Inauguration of Professor Ari Heiskanen
         Opening Ceremony of the CreaTol Laboratory, DIPS, Kajaani
Feb 21  ‘Recommendations on Physical Education in Early Childhood
         Education’ Seminar
March 16 till 18 ‘Development, Mastering and Evaluation of Skills: From Theory
         to Practice.’ Multidisciplinary Symposium at Kajaani University
         Consortium
March 31  ‘Multicultural Meetings in Teaching and Education’ Seminar in
         Helsinki
Apr 6 till 7  Environmental Measurement Days in Vuokatti
Apr 11  Network Day for Entrepreneurs of Kainuu in the Food Stuff
         Branch, Snowpolis, Sotkamo
Apr 21  Diploma Conferment Ceremony
Apr 27  10th Anniversary of the Biotechnology Laboratory and Open
         Doors, Sotkamo
May 6  Public Defence of Doctoral Dissertation by Matti-Paavo
       Sarén, title Characterisation of Properties of Coniferous
       Wood Tracheds X-ray Differaction, Laser Scattering and
       Microscopy, Measurements and Sensor Laboratory, Kajaani
May 12  Floora Day Celebration by AKAVA Kainuu, Kajaani University
         Consortium and Kajaani Polytechnic
May 16  Meeting of the Faculty of Education in Kajaani
June 14  Planting of Trees to Celebrate the 105th Anniversary of
         Teacher Education
June 16  Public Defence of Doctoral Dissertation by Jani Rytkönen,
         title Effect of Heat Denaturation of Bovine Milk Beta-lac
         toglobulin on Its Epithelial Transport and Allergenicity,
         Laboratory of Biotechnology, Sotkamo
June 16 till 17  Visit and Lecture Engineering of Dairy Proteins. Changes of
         Interactions, Stabilities and Allergenic Properties, Professor
         Thomas Haertle of INRA, Nantes, France; Sotkamo

On June 14, pear trees were planted at the Campus.

The event of “Student Cap for Elias” on the First of May gathers the students.

Beginning at island Rethja has become a tradition for the new students of
Teacher Education.
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>June 18 till 20</td>
<td>International Congress on Science on Nordic Skiing, Vuokatti</td>
</tr>
<tr>
<td>Aug 1 till 3</td>
<td>Visit from Czech Republic of Professor Jiří Homola and Hana Vaisocherova, PhD from Institute of Photonics and Electronics</td>
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<tr>
<td>Aug 23</td>
<td>Board of Directors of University of Oulu Convening in Kajaani</td>
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<tr>
<td>Sep 2 till 5</td>
<td>Visit and Lecture Analytical Applications of Chemical Sensors, Biosensors and Immunosensors, Assistant Professor Laura Michel, University of Rome, “Tor Vergata” Dipartimento di Science e Tecnologie Chimiche (Department of Chemical Science and Technology), Sotkamo</td>
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<tr>
<td>Sep 2 till 8</td>
<td>Compostela Visitors from the University Library of Pécs, Hungary, Director Doctor Fischerné, Doctor Dárdai Agnes Szellóné and Assistant Director Fábián Mária</td>
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<tr>
<td>Sep 7</td>
<td>Opening Ceremony of the University Consortium and Study Year Opening Divine Service in the Church of Paltaniemi</td>
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<tr>
<td>Sep 14 till 15</td>
<td>Measurement Days of Mechanical Wood, Kaukametsä</td>
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<td>Sep 20</td>
<td>‘Creativity as a Passion’ Seminar, Kajaani</td>
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<tr>
<td>Oct 9</td>
<td>Visit and Lecture Biosensing in the Extreme Environments - Life Detection in Scandinavia and on Mars, Academic Director David Cullen, University of Granfield, Sotkamo</td>
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<tr>
<td>Oct 10 till 11</td>
<td>‘2C4U’ Event for Recruitment of Students, Kajaani University Consortium and Kajaani Polytechnic</td>
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<tr>
<td>Oct 13</td>
<td>Diploma Conferment Ceremony</td>
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<tr>
<td>Oct 9 till 15</td>
<td>Teacher Exchange Visit Erasmus from Nyíregyháza, Hungary</td>
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<td>Oct 19</td>
<td>How to Grow and Become International? Workshop, the CreaToI Laboratory, Kajaani</td>
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<tr>
<td>Nov 1</td>
<td>‘Pohjanportti’ Day (Co-operation between Libraries in Northern Finland)</td>
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<tr>
<td>Dec 8</td>
<td>Public Defence of Doctoral Dissertation by Mikko Saari, Kielikyöpetuksen kulttuuripedagoginen perusta (Cultural Pedagogical Foundation of Immersion Teaching), Department of Teacher Education in Kajaani</td>
</tr>
<tr>
<td>Dec 20</td>
<td>Strategy Seminar of Measurements and Sensor Laboratory, Kaukametsä</td>
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Compared to the previous year, the structural development of the Finnish university system has escalated. Probably, by year 2010, a new innovation university will be operating and the universities of Turku region and Eastern Finland have merged. Also, the merging process of the polytechnics has started. Pressure for more intensive co-operation between the Kajaani University Consortium and the Kajaani Polytechnic has also increased from the previous year. Hopefully, the new structure will answer the global challenges in future.

The operation of the Kajaani University Consortium was rather lively in 2006. The Teacher Education Department produced 127 Master’s Degrees which, when compared to the resources, is a peak figure considered nationally. The operating period also produced Doctors’ degrees in different units. The increase in their number predicts positive development in the research and increase in the interaction between the partner universities of the University Consortium. As an added value to the social service task, the development of basic research has increased the international co-operation considerably and opened possibilities for exploiting new sources of financing. The intensive co-operation between University Consortia has increased the possibilities of exploiting regional research and regional programmes. In order to develop the top quality of research and business contacts, a steering group has been established for the Measurements and Sensor Laboratory and an advisory board for the Laboratory of Biotechnology. The innovation process must be further developed in the Kainuu Region and in the District of Iisalmi.

Regularising the employments has been continued, since short attachments are still a burden for the research in the universities and colleges. Changes in the state administration, in the form of productivity programme, for instance, have increased uncertainty in this respect in the past operating year. More attention has been paid to the wellbeing of the personnel than before, and new basics have been created for the process of internal development and working guidance. The elements of the new development strategy have also been identified and work has been started to find a more creative and innovative perspective to work. The result of the operation in year 2006 is excellent, and the finances of the Kajaani University Consortium is on an established basis.

The time for extending the operation is past. The strategic focal points have been selected and established. Work based particularly on the solutions taken in 2006 will increase the co-operation in the form of developing the vocational continuing education and the open university in the network of regional higher education in Kainuu. Also the new large companies included in the economical development of the Region of Kainuu, such as the Talvivaara mining project, have affected the operation of the Kajaani University Consortium for good in the past year.

Juhani Suortti
Director of the University Consortium
The Laboratory of Biotechnology started two new Tekes projects together with businesses. The target of the project Fotosynteesireaktion tehokkuuden optimoinen valon laadun ja määrän suhteen (The Optimization of the Photosynthesis Reaction in Relation to the Quality and Quantity of Light) is to control the photosynthesis of the cucumber by optimizing the quantity and quality of light and other factors and to generate savings in the energy consumption of greenhouses. Three vegetable gardens from Kainuu participate in the project as well as some device manufacturers. Another new Tekes project (BIO-cyto-MINE) aims at enforcing the research skills in the extractive industry. The project exploits flow-cytometer as an analysis technology connected to the extractive industry.

The operations of the Measurements and Sensor Laboratory was carried out in research groups; team leaders were selected to present their operations. The current groups and their fields of study are: pulp, mechanical wood, wireless instrumentation, environmental measurement and physical activity measurements. The applications of the wireless instrumentation and environmental measurement are closely connected with the wood-processing industry. The research of Professor Anssi Mäkynen concentrates on the dimension measurements of wood. Research co-operation was done with the Universities of Moscow, Saratov, Petrosavodsk, and Växjö. In addition to these, a three-month research visit from the Measurements and Sensor Laboratory was done to Prague. The marketing of the research environments was intensified and research co-operation was done with several companies from the Kainuu Region. Also, the Measurements and Sensor Laboratory worked together with VTT (Technical Research Centre of Finland) and Kajaani Polytechnic in the research operations of Measurepolis.

The research subjects of DIPS/Kajaani (Department of Information Processing Science Kajaani Unit) are software business and organisation processes. In the research of the software business, the focus is on generating new business from the regional point of view as well as productisation, sales and marketing of software. Taking the usability of the products into consideration is seen as a part of high-quality product development. The usability laboratory, built within the CreaTol project of the Kajaani Unit, concentrates on the research and analysis of the design processes of the usability and the usability of the product versions of information technological applications. The process laboratory CreaProc concentrates on the research and analysis of the organisational processes.

The separate internationally important research projects of the Teacher Education Kajaani Department were combined into a research unit of Kajaani Research Consortium of Experience, Learning and Cultural Development. The unit has participated in execution of the the multi-discipline post-graduate education of the Consortium. The study within the unit has been financed by the Academy of Finland and Tekes (Finnish Funding Agency for Technology and Innovation). The fields of research and development of the multi-discipline Lönnrot Institute were evaluation and regional studies as well as countryside, bio-energy and cultural history. The first research results of the Master’s and Post-Graduate Programme in the Sports Technology were presented in the International Congress on Science on Nordic Skiing (ICNS2006) which brought almost 200 researchers from 16 different countries to Vuokatti in June 2006.
3 EDUCATION

A Master’s and A Graduate Engineer’s Degree in Kajaani

The departments offering degree studies in Kajaani belong to the faculties of their own fields: the study programmes of Sports Technology to the Faculty of Sport and Health Sciences of University of Jyväskylä, Department of Teacher Education to the Faculty of Education of University of Oulu, and the Department of Information Processing Science Kajaani Unit to the Faculty of Science in Oulu.

At the Kajaani University Consortium, you can take the degree of Master of Education or Master of Philosophy in the basic education; the qualification of a primary school teacher; early childhood education (nursery school teacher), subject teacher in physical education, Swedish for immersion course and subject teacher; and subject teacher in mathematics. Also, as conversion training, Master’s Degree in art education (Virt@) and cultural industry are available.

In the Information Processing Science, you can take the Degree of Master of Philosophy in software production or software business; as conversion training, also digital media, software production and mobile services are available. In addition to these, the University Consortium also offers the Degree of Graduate Engineer in Electrical Engineering (DIKO) at the Measurements and Sensor Laboratory, and conversion training under the guidance of University of Jyväskylä in Sports Technology in Vuokatti.

The third Graduate Engineer’s conversion training started at the beginning of 2003 and continued till the end of year 2006. Continuation for the DIKO Project was applied until the end of June 2007. 15 students participated in the conversion training. 860 study weeks were performed and 4 DIKO Project participants started the work on their graduate thesis work. Thanks to the professorship in the measurement technology, the chances for advanced education and making of theses were improved.

The first special needs nursery school teachers graduated in Kajaani in co-operation with the Department of Special Education of University of Jyväskylä and new primary school teachers for the qualification training for special needs teachers were selected for the advanced education. The Continuing Education co-ordinated the completing education in the field of teaching for the whole region.

Master’s Degree in Cultural Industry is a National and International Success

The Master’s Degree in Cultural Industry started in the Kajaani Department of Teacher Education in January 2005. In a bit over a year and a half, seven Masters graduated from the Master’s Programme; five of them Masters of Education specialising in the Cultural Pedagogy, and two Masters of Art specialising in Cultural Entrepreneurship and Production. The Master of Cultural Industry was founded on funding from the ESR. It was originally estimated that the training would take about 2 to 3 years, depending on the background studies of the student.

The Master’s Programme has had 22 students who have had the background education of media, dance, theatre, media production, design and visual arts. 18 of the students were women and 4 were men. All the students have had a good basic education connected to the field and a working experience of many years in the fields of art, culture and education. Many have been working in their own fields in their own companies.

Open University

The Open University operating within the Unit of Continuing Education carries out the operations of the Open University and university education as per the studies of the Kajaani Department of Teacher Education in the Region of Kainuu and in the District of Isalmi. The most popular subjects in year 2006 were Education and Humanities. Studies from other faculties were also offered; among the new ones, there was interior decorating from the Department of Architecture, which activated new students for the Open University. The students mainly came from the Region of Kainuu, and a large section of them were the students of the Kajaani Department of Teacher Education. When measured using the average of the past three years, there were 120 calculated whole-time study years and the number of students was about 500.

Post-Graduate Education in the Kajaani Campus

The need for scientific advanced education has been identified as early as in the 1990’s. In the Kajaani Department of Teacher Education, it has been carried out for many years now. At the beginning of 2002, the preparations for the regional post-graduate education were started in the development strategy of the Kajaani University Consortium, and the operations started in the autumn. The development of the advanced education programme is the responsibility of a steering group consisting of the directors of different units and researchers.

The post-graduate education in Vuokatti, organised by University of Jyväskylä got a good boost and five post-graduate students studied within the programme in 2006. The target of the programme is to produce 5 to 7 doctoral dissertations within the next five years. The post-graduate programme brings important research in the field to Snowpolis and to the area of Vuokatti.
4.1 Kajaani Department of Teacher Education

A Record Number of Master’s Degrees and a New Professorship for Special Education

The Kajaani Department of Teacher Education maintained its position as a popular place of study. A record number of Master’s of Education graduated at the Department: 127. The first students of the Master Programme in Cultural Industry graduated. The Master’s Degree project in Russian Culture and Language ended. The qualifying education for art teachers, Virt@, continues in Kajaani for a third period in co-operation with University of Art and Design. The immersion training in Swedish continued actively with University of Vaasa. On December 8, a public defence of doctoral dissertation took place in Kajaani; the subject of the dissertation was the pedagogical background of immersion teaching. Subject teacher training on physical education in co-operation with University of Jyväskylä became stronger thanks to the new professorship in physical education.

A professorship was established in Kajaani for special education. In future, the basic degree students of early childhood education will be exchanged for those of special education in the Department of Teacher Education in Kajaani as per the definition of policy on the development of education of the faculty. The research, minor subject teaching and completing training of early childhood education will continue in Kajaani. The project of Kainuu lapsi (Child of Kainuu) was awarded the national Terve-SOS award. The purpose of the project was to develop practises which would support the development of childhood for children of 0 to 8 years old for the part of content and to promote the co-operation between different actors in the Region of Kainuu.

The Activities of the Kajaani Teacher Training School Focus on Cultural Pedagogy

The Kajaani Teacher Training School operates in connection with the Kajaani Department of Teacher Education; it consists of pre-school education and classes 1 to 6 of the basic education. The operation of the Training School rests on the research and development work of the University. As a network-building study and training centre, the School co-operates with field schools in order to develop the skills for working life.

For a year, the Kajaani Teacher Training School has been the neighbourhood school for children of the Purola-Pustola area, together with the school of Lohtaja. The activities as a neighbourhood school has increased the co-operation with the school administration of the city. The past year has been active. The Teacher Training School participated in the opening service of the Kajaani University Consortium at the church of Paltaniemi.
4.2 Laboratory of Biotechnology

The operation of the Laboratory of Biotechnology was focused on four sectors: biotechnological know-how on wild berries, biotechnological know-how on food stuffs and milk, and promoting the biotechnological measurement skills, as well as development of technology transfer, innovation and company services. Co-operation with University of Kuopio continued intensive in education and in projects. The plan for the Master’s Degree programme on the Food Stuff Biotechnology was completed.

Active national co-operation has been done in the ELO Centre of Expertise activities with about 20 companies. Training was offered to companies and a seminar with the title of Marjojen terveysvaikutukset (Health Effects of Berries) and a Lähiruoka (Local Food) network day was organised. Within the framework of the project Erikoiskasvit peltoviljelyyn, jalostukseen ja markkinoille (Special Plants for Cultivation, Plant Improving and Markets) offered training for about 60 entrepreneurs in Kainuu, Lapland and Northern Ostrobothnia in cultivating the reed canary grass and on the economic matters connected to this. In co-operation with two companies, one from Sotkamo and another from Kuhmo, a mint-based product was developed; it was launched on the market at the end of 2006. In the autumn, days for developing herb-based products for entrepreneurs and other partners were organised at the Vuokatti Institute.

The Laboratory of Biotechnology is a member of the Measurepolis programme as a participant and in the steering group; the project of the Laboratory is focused on the human physiological biomeasurements. The national co-operation partners are the Measurements and Sensor Laboratory (MILA) and VTT (Technical Research Centre of Finland) Tampere. The international co-operation was boosted by creating connections to University of Cranfield with the leading unit in this field on the European level. Co-operation was started with University of Rome. The three month working visit of assistant professor Laura Michelli brought new skills in the electro-chemical detecting. New methods of analysis have been created for the Laboratory for the purposes of research on plants and berries (e.g. flavonoids and anto-cyans). The capillary-electrophoresis device brings the Laboratory a chance to do ionic analysis on the side of inorganic chemistry and to serve the mining industry.

Many paid researches financed by businesses have been carried out at the Laboratory connected to the product development of the food stuff branch. The tendency of the Laboratory projects and operations is to be compatible with the Snowpolis concept and to support it. The unit has participated actively in the regional research and development projects. In June, the laboratory hosted a public defence of a doctoral dissertation. The first dissertation was completed at the Medical Faculty of University of Oulu. The subject matter of the dissertation was cow’s milk allergy.
4.3 Measurements and Sensor Laboratory

The operating idea of the Measurements and Sensor Laboratory (MILA) is to execute research and development connected to measurement technology and to support the teaching focusing on basic degrees and post-graduate degrees connected to this field. This work is mainly focused on the needs of the wood processing industry (pulp, paper, mechanical wood) and the needs of the electronics industry closely connected to wood processing. The operations of MILA are guided by the quality system ISO 9001:2000. The extensive updating of the quality system was continued and it will be completed at the beginning of year 2007.

The research operations in MILA have been active - for instance, the number of Tekes projects (Finnish Funding Agency for Technology and Innovation) reached a new record. The co-operation has become more international. International contacts have been created to the scientific societies of Russia: Moscow, St. Petersburg, Saratov, and Petrozavodsk. A gratifying thing is also the more active co-operation with the Laboratory of Biotechnology - the main focus of the co-operation being on the SPR research which is carried out as per the long-term plan made together.

A steering group, co-ordinated by the Chancellor, was founded to support the operations of MILA. The steering group consists of representatives of the University, business life and public quarters. It is a challenging task to reconcile the wishes and targets of the scientific and the business world. MILA still acts as an active partner in the organisations of the Eastern Arc and InfoTech Oulu. In order to verify the scientific quality level of the research, it was decided to form a team of professors.
4.4 Continuing Education

In continuing education, the updating training in teaching and education were stressed, as well as questions of equality, development of working life and work communities, as well as open university teaching. The forms of education were professional specialising education, grade teaching, updating and ordered training, as well as Studia Generalis lecture series, theme seminars and public lectures. The customers of the Continuing Education are the public sector, business life and companies, associations and communities as well as private persons.

The operation of the WomenIT 2001–2006 project, funded by the European Social Fund (ESF) continued. One element of the Moniainen Woima project 2006–2007 (ESF) was the development of the Women’s House Woimala and, funded by the Ministry of Labour, consulting work on Equal and ESF projects as well as regional training sessions. The pilot project of Increasing the Participation of South African Women in ICT’s 2005–2006 continued in co-operation with CSIR/Meraka Institute and the South African Embassy in Finland.

The most important development objects and projects in the development of the working life and work communities were the TYKES project, Hyvien työyhteisöjen Kainuu, funded by the Joint Authority of Kainuu Region; the work supervision project 2006-2007 for the working community in the Kajaani Police, funded by the State Treasury; and the long-term expert trainings, such as the two-year advanced training in Crisis and Trauma Work and the Work Supervisor training 2006-2008 ordered by the Educational Federation of Municipalities of Kalajokiakko.

In year 2006, a total of 50 updating trainings were organised: 37 of them were long-term trainings and 13 short ones. 312 training days took place. A total of 2113 persons participated in these trainings, and 2147 teaching hours were completed. The increase of the long-term training and co-operation with other educational organisations were stressed in the operation of the Continuing Education.

4.5 Department of Information Processing Science Kajaani Unit

During the third operating year of the Oulu University Department of Information Processing Science Kajaani Unit, the number of students rose to 170. This figure includes the students of the three Master’s Degree programmes which started before the Unit was established. The Unit offers a comfortable and modern study atmosphere of a small unit with the advantages offered by a large department. Modern technology is exploited in teaching. In their studies, the students orient towards software production or towards software business. Six students have graduated so far as Masters of Philosophy at the Unit.

New development projects have been started in the Kajaani Unit in co-operation with the businesses of the region. In the project laboratory project CreaToI which started the previous year, a learning environment and usability laboratory based on project learning and entrepreneur-like way of operating has been built and research has been made on creating new business activities and marketing as well as productisation. In the CreaProc process laboratory project, the processes of organisations are begin modeled; CreaUse project plans and executes training packages for usability; and CreaGame pilot project prepares for a project for developing an Open Source game engine for training and research use as well as for improving the regional business possibilities.
4.6 Sports Technology Education

The first Masters in Physical Education in the conversion training programme of the Sports Technology of University of Jyväskylä graduated in 2006. A total of 55 students were accepted to the training programme through three different admittances in years 2004–2005. The students accepted to the training already have a degree or are close to graduation in a field of technology or information technology considered compatible for the conversion training, either from a university or a polytechnic. The content of the actual conversion training is based on the subject matters of the Department of Biology of Physical Activity of University of Jyväskylä. The total target of the project is to produce 50 Master’s Degrees in Physical Education with the Major of Sports Technologically oriented Biomechanics.

The research of the technology of physical activity has been active in the Nordic skiing. Among others, the thesis works were presented in an International Congress on the Science on Nordic Skiing (ICSNS2006) in Vuokatti in summer 2006. Co-operation with the Defence Forces continued. The measurement tests on the loading of the conscripts of the Kainuu Brigade were performed both in field and in laboratory environments. The effects of speed-force practice on the nerve-muscular system and dynamic balance control were studied on young and elderly subjects. Co-operation with the Skilab and MILA continued in many research projects. High quality international research is the backbone for the research of sports technology in Vuokatti.

These actions are considere sufficient for obtaining the targets of the programme which are: 1) to produce professional skills in sports technology in the Region of Kainuu and the province of Oulu, 2) to develop business-oriented research on sports technology in the environment of Snowpolis, and 3) to create established international research in the area.

4.7 Lönnrot Institute

The fields of research and development of the multi-discipline Lönnrot Institute were evaluation and regional research as well as countryside, bioenergy and cultural history. Many extensive programme and theme evaluations were performed at the Lönnrot Institute as well as individual project evaluations. There were 7 evaluation projects in total. In addition to this, diverse regional studies were performed, such as the labour study for the Talvivaara mining project, an extensive statistic study on the rural areas of Finland, and a study on the possibilities of social entrepreneurship in Kainuu. The Unit participated in the operations of the national Rural Studies network and in the execution of the programme Oulu-Kajaani Development Zone.

The regional Kylässä project as well as the international Deserve project continued under the co-ordination of the Lönnrot Institute. Two extensive seminars on the future views of countryside were organised within the framework of these projects. The execution of the Kainuu Tulipasilli project continued and a bioenergy programme for Kainuu for the years 2006–2010 was drafted in the Institute. In the field of cultural history, a book on the roads between the Bay of Bothnia and the White Sea was published. Field study was also performed in the villages of the Republic of Karelia.
4.8 Library

The architectural planning of the new library facilities for the Kajaani University Consortium was completed in April. However, the joint space project with the City of Kajaani was dropped since the University Library did not obtain a permission to rent new facilities from the City. The work of the joint project planner of the Kajaani Libraries continued in year 2006 at the Kajaani University Consortium. The job description and the main responsibility of the project planner concentrated on the planning of teaching of the acquisition of information and teaching of the acquisition of information for the common customers of these libraries. The pilot on shared loans of University Library and the Library of the Kajaani Polytechnic started at the beginning of December. The customers of the Library of University of Oulu and the Library of Kajaani Polytechnic can order books from the collections of the other library themselves, in the same way as from the Storage Library.

Teaching of the acquisition of information was offered for 134 hours and 421 students participated. There were 19 096 local loans. 97 distance loans were received (in addition to this, the shared loan books) and 379 distance loans were sent to other libraries. 1213 volumes of books were purchased and 127 annual volumes of papers (in paper form) were ordered. A new form of service for students (mainly for those doing their thesis), the Library of the University Consortium started a free-form, personal instruction in the acquisition of information. This instruction was offered once a week during the study terms, and 26 students participated in it.

4.9 Research and Innovation Manager

The District of Iisalmi and the shared Research and Innovation manager of the Universities are also parts of the operation of the Kajaani University Consortium. The operation started as a part of the regional centre programme of the District of Iisalmi in year 2004 in co-operation between the District of Iisalmi, Universities of Kuopio and Oulu as well as the Savonia Polytechnic. The target of the operation is to distribute research information for the needs of the businesses and to develop the innovation environment in the District of Iisalmi.

The operations were established in a skeleton agreement between the partners and they were specified in the company-oriented innovation strategy of the District of Iisalmi for years 2007-2013. The focus is the co-operation with Ylä-Savon Kehitys Oy (Development Company of the District of Iisalmi) and the company clusters co-ordinated by it, so called mini-clusters. In order to carry out the commissions from companies, an INNO-STU innovation workshop operation was started; there the companies, educational and research institutes, as well as the public sector can meet in an atmosphere of creative development operations.
The Kajaani University Consortium follows the programmes and instructions of University of Oulu in its personnel management. The payment reform was established. The development discussions were performed with the personnel in each unit.

The number of personnel at the University Consortium in 2006 was 239. The office of the Research Manager in the Laboratory of Biotechnology was made permanent and filled. The filling of the professorship in Physical Education was postponed to the following year. The professorship in Special Pedagogy was established in the Faculty of Education in Kajaani. Preparations were made to make two offices in the Measurements and Sensor Laboratory permanent. The share of fixed-term personnel was a little higher than in the previous year as the number of personnel increased. Making the fixed-term employments permanent will be continued. Alterations due to the productivity programme and the service centre working under the Ministry of Education are anticipated, when possible. It was decided that half a person-year would be spent on the personnel's wellbeing at work.

There were nine professorships at the Kajaani University Consortium in 2006. There were 153 researchers and other teaching and research staff, 21 of laboratory personnel, 9 of adp and technical staff, 15 of administration staff, and 23 of finances and office staff, and 9 others. Of the personnel, 48% have a Master’s Degree, 18% have a Licenciates or Doctor’s Degree, and 34% have obtained some other education.
RESOURCES

Personnel by units

Total expenditure by account groups in 2006 (Units of University of Oulu)
The financial situation of the Kajaani University Consortium was stable in year 2006. The share of the general funding was reduced from the previous year by 0.5 million euros, i.e. it was 16.5 million euros. Of this, the share of the Sports Technology education of University of Jyväskylä was a bit more than 0.7 million euros, and the share of the units of University of Oulu a bit more than 15.7 million euros. Of the funding by University of Oulu, the share of the budget funds was 57 % and that of the completing funding 43 %, whereas the previous year, the corresponding ratio was 53/47.

The diminishing of the completing funding reflects the ending of EU-funded projects at the end of a financing period. On the other hand, more funds have been transferred to the following year than usual, and thus, preparations have been made in case the financing decisions on some new projects be delayed.

The units operating mainly on completing funding are the Measurements and Sensor Laboratory (90 %), Laboratory of Biotechnology (81 %), the Lönnrot Institute (75 %), and Continuing Education (61 %). The unit of University of Jyväskylä in Vuokatti operates 100 % on completing funding. The units operating mainly on budget funds are the teaching of Mathematics, the Training School, the Library, Teacher Education, and the shared operations of the University Consortium. The most part of the complementing funding is obtained from other state agencies (Tekes, Oulu County Administrative Board, TE-Centre of Kainuu = Employment and Economic Development Centre of Kainuu). The City of Kajaani and the municipality of Sotkamo have invested considerably on the operations of the University Consortium. Long-term financing agreements with these municipalities will be renegotiated in 2007. The share of the University Consortium of the whole completing funding of University of Oulu is about 11 %.

The expenditure structure of the University Consortium units of University of Oulu follows the model of the previous year and varies by units. Of all the expenditure, the personnel costs cover 62 % (excluding the data from DIPS), which is almost the same at the University in the average. The rent costs were almost 1.8 million euros in total; of these, 0.35 million euros were external rents (MSL and BIO) and more than 1.4 million euros of rents (incl. rent, electricity, cleaning, etc.) were included in the internal costs. The expenditure of the University Consortium was about 7 % of the total funding of University of Oulu.

The accruals shows income worth 2.7 million euros, i.e. 40 % of the income, which are income not yet received from the structural funds on the basis of orders of payment. The payment orders are long delayed at the funding parties, and their interpretations on the costs which are not valid for subsidy increase the financing risk, since they may have to be covered by the rest of the funding. About 450 different projects are active at the University Consortium.
A study on the University facilities, their use and alteration requirements in years 2007 till 2011 was completed at the end of year 2006. The study proved that the teaching facilities are underutilised. Ten different buildings stand on the cultural-historically valuable campus area; they are managed by Senaattikintteistöt, 13359 room m² in total. The Measurements and Sensor Laboratory rents 2881 room m² from the Technology Centre of Kajaani. The 1606 room m² facilities of Linna, rented from the City of Kajaani, house the Kajaani operations of the Department of Information Processing Science. For the facilities of Linna, the Ministry of Education has given a renting permission until year 2014. In addition, 1038 room m² of sports facilities at the Kajaani Sports Hall are used at the percentage of 23 %. In Sotkamo, the Laboratory of Biotechnology use 637 room m² of Valio facilities. The facilities there are cramped and impractical for the operations of the laboratory. The short-span of the project funding has prevented the obtaining of new facilities. The Master’s and Post-Graduate Programmes in Sports Technology of University of Jyväskylä inhabit 313 m² in Snowpolis.
On the 26th of October, 2006, the Board of Directors of the Kajaani University Consortium decided that on the 1st of January, 2007, the Senior Academy of Art and Culture will officially become a part of the Unit of Continuing Education of the Kajaani University Consortium. The Kajaani University Consortium develops and supports the regional and life-time learning services, and the operations of the Senior Academy have an extensive effect and task. The Senior Academy of Art and Culture will serve the whole region of Kainuu, but it will also meet the training services of the seniors and the aged in the Eastern Finland, Province of Lapland, District of Isalumi, and Province of Oulu. Thus, intensive training cooperation can be created with the other partner universities of the Kajaani University Consortium. The training will be carried out as co-operation between the Continuing Education, Municipality of Ristikari, and Seniorpolis Oy in Ristikari, Kajaani and elsewhere in Kainuu. In addition to this, the Senior Academy makes possible the co-operation between the Kajaani University Consortium and the communal and studio school operating in Ristikari in using media skills and expertise.

The steering group of the project has oriented the planning of the operation of the Senior Academy of Art and Culture towards three parallel main sectors: 1. development and gradual extension of the teaching, 2. strategic long-term planning of administrative (attachment to the University organisation) and contentual operations, operational and economic planning, production of materials for virtual teaching (productive organisation), pedagogical solutions, and 3. planning and execution of technological solutions.

The operation of the Senior Academy concentrated on short courses in 2006; they were academic and of an open university as well as updating education nature. In the curriculum, the Course in Environmental Art, which started in 2005, was completed; an environmental work of art was made in Ristikari as a student work. In addition to this, a Course in Drawing and Painting as well as an Introductory Course in the Theory of Colours were executed for visual arts. In the field of films, a Film Workshop was begun; sections Writing and Film Analysis were offered. A Course in Art Therapy was also given. The seminars on Local History and Culture and Media Politics of the European Union were organised in co-operation with the Civic Institute of Kaukametsä; the events took place in the culture and congress centre of Kaukametsä. A Studia Generalia series of lectures on Elias Lönnrot and Kainuu was organised in Virtaala of Ristikari.
ALTERATIONS AT THE CAMPUS AND IN THE FACILITIES

The three-year long restoration work on the outdoor area at the Kajaani University Consortium Campus was completed. During the last stage, Senaatti did restoration work, among other things, in the play and sports areas for children near the Teacher Training School. The roof of the Administration Building at the Campus was repaired.

The fence around the Campus was replaced by a new one, and at the same time, access control and closing systems were installed in the area. The replacement of the flower beds was continued and pear trees were planted in front of the library to celebrate the 105th anniversary of the teacher education. The CreaTol Laboratory in the Linna facility of the Information Processing Science Kajaani Unit was inaugurated.
The Quantity of the International Scientific Publications Increased Considerably in Year 2006

The research and teaching staff of the Kajaani University Consortium published international publications ever more eagerly. In year 2006, there were 170 publications in total; 47 of these were published abroad or in international scientific publications and 22 were other international publications.

Domestic scientific publications given out were 18 and other domestic publications were 83. The quantity of the publications has increased from the previous years, since in 2004, the total number of publications was 110, and in year 2005, it was 150. The number of international publications has increased by 40 publications from the starting year of the University Consortium and the domestic ones by almost twenty.
As per the ordinance, the administration of the University Consortium is the responsibility of the Director and the Board.

**The Board in years 2004–2006**

The Chairperson of the Board is the Director of the University Consortium, Professor Juhani Suortti

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**General members**

- Professor Sanna Järvelä, Faculty of Education
- Professor Keijo Valininen, Faculty of Science, Department of Mathematical Sciences
- Professor Risto Myllylä, Faculty of Technology, Department of Electrical and Information Engineering
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ACTIVITIES LOCATED ON THE CAMPUS:

Kajaani Department of Teacher Education
www.kajaaninyliopistokeskus.oulu.fi/koky
Class Teacher Education
Education in Early Childhood Education
Qualifying Education for Master’s Degree for those who have
the Degree of Nursery School Teacher or a Bachelor’s Degree in
Education containing the competence for Nursery School Teacher
Pilot Education for Subject Teachers in Mathematics
Pilot Education in Cultural Industry and Production
Pilot Education focusing on Swedish Immersion Teaching
Master’s Degree Virt@Il on Visual Arts as distance and multi-form
learning
Kajaani Teacher Training School
IS-Center
SkillLab

Continuing Education
www.kajaaninyliopistokeskus.oulu.fi/akuiskoulutus

Lönnrot Institute
www.kajaaninyliopistokeskus.oulu.fi/lonnrot

Library
http://www.kajaaninyliopistokeskus.oulu.fi/kirjasto

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