



Aalto University



## Aalto's Year 2010 in Review



soita  
mummo  
mind the seniors





*The Presidential gown and chain of office were taken into use at the university's opening ceremony. The ceremonial gown was designed by Jewellery Designer Immi Pärnänen (left) and the chain by Designer Saara Renvall (right).*

## Aalto's first year | Changes, hard work and inspirational initiatives

Aalto University commenced operations as a fully empowered, independent foundation university on the first day of 2010. The launch was marked with a gala event held at Finlandia Hall and the Museum of Contemporary Art Kiasma on 8 January, one of the coldest days of that year.

Aalto's first year was filled with hard work and great changes. It also included many inspirational initiatives and events that bore witness to the creativity and vitality of our new university. The challenge of change was and is alleviated by the fact that Aalto University was created on its three founding schools' own initiative and by the strong support provided to us by the State and the business community.

The merger was carefully prepared for over a period of several years. These diligent preparations resulted in excellent designs, which will help focus our efforts to elevate Aalto University into a world-class institute of higher learning in the next ten years. The realisation of this plan is supported by the reformed Universities Act, which increased Aalto's autonomy, as well as by the considerable additional resources the State and private benefactors have provided to us. Our fundraising campaign has demonstrated that Finland's business community, industrial foundations and federations as well as a great many private individuals have faith in Aalto University.

Aalto University is a national project that aims to support the success and prosperity of the whole of Finland. We can contribute to national competitiveness by deepening our research, modernising teaching and exploring new models for diverse multidisciplinary cooperation. The research assessment exercise Aalto realised in 2009 and the ongoing teaching assessment exercise give us an accurate picture of our strengths, providing a solid foundation on which to build for the future.

The world's leading universities employ simple models in the production of high-standard

research and teaching functions: they are successful in recruiting the best talent and provide these people with resources that enable them to focus on their work and engage in long-term projects at peace from other concerns. Aalto has set up a new academic career system, Tenure Track, to help establish a similar operating environment. Some 41 recruitment processes were launched in 2010 and the three first appointments were made at the beginning of 2011.

Our services have also been reorganised during the year under review. The aim is to liberate academic personnel from non-essential routines, enabling them to spend more time on the core tasks of research and education.

Aalto University is striving to remove confrontational attitudes: basic research, the application of fresh research knowledge and interaction with society and industry are all equally significant goals. Another important objective is the dissemination of new, research-based knowledge through teaching. Alongside evaluations of research performance, the recruitment of professors needs to take better account of teaching-related merits and social impact. Multidisciplinary goals should not be pursued at the expense of profound expertise in constituent disciplines, as each pursuit has its own place: cooperation will produce the best results when those who participate in it represent the pinnacle of their respective fields.

Aalto's capacity to produce added value is derived from our ability to connect many different types of expertise – both within a discipline and in cooperative projects involving partners from highly divergent areas of specialisation. The scientific and artistic disciplines practised at Aalto are involved in cooperation as part of multidisciplinary study and research programmes. Society and business life has become more comprehensively involved in our activities as part of the Aalto Factories workshops, for example. We believe

that the reciprocal exchanges of competence that occur in such environments provide the key to the creation of fresh innovations.

Our Factory concept has aroused extensive interest. The first international competence workshop, Aalto-Tongji Design Factory, was established at the campus of Shanghai-based Tongji University in spring 2010. At the same time, a hundred-strong group of Aalto students set the stage for an extraordinary learning experience by leasing a private train to transport them across Siberia to the World Expo in Shanghai.

One of Aalto's central policy decisions was to make students the core focus of our operations. Graduation is the best way to disseminate our university's expertise into surrounding society. We have been proud to see how the student-established Aalto Entrepreneurship Society has succeeded in promoting entrepreneurial thinking and spirit.

Solutions for a future Aalto University campus were debated extensively in 2010. The work is ongoing, and the Aalto University Board is expected to resolve the campus issue in 2011.

Changing such a large organisation requires perseverance and determination. Although we are only taking the first steps in our path to change, much has already been achieved. Enthusiasm and confidence in the future have also been stoked by the numerous awards and other recognitions that have been won by Aalto faculty members, students and alumni during the year. We've built up a lot of momentum, which will support our drive for change also in the coming years!

**Tuula Teeri, President**

# Aalto University's values are:

**A PASSION**

for exploration.

**THE FREEDOM**

to be creative  
and critical.

**THE COURAGE**

to influence  
and excel.

**THE RESPONSIBILITY**

to care, accept  
and inspire.

**FOUNDED ON**

high ethics, openness,  
and equality.





PHOTOGRAPH | KAROLIINA PAATOS

### 1. Working for our fellow neighbours

The Mind the Seniors project considered ways for enhancing the wellbeing of senior citizens. Graphic design student Stefania Passera (on the left) came up with the Call your Grandma campaign, which formed the central aspect of this project. It shaped design into a campaign of caring for others that used photography and social media, among other things, to encourage random people to call their grandmothers or –fathers in an effort to combat the loneliness of the elderly. The campaign received much attention and Finland’s ET magazine awarded it with its Friendship prize.



### 2. Let’s take the train to China

Aalto on Tracks demonstrated that borders are made to be crossed. When you think freely, nothing’s impossible. The weeklong event, which was conceived and realised by students, transported some 100 Aalto representatives on their own train to the World Expo in Shanghai. The train travelled more than 10,000 kilometres, providing a novel learning environment and opportunities for scores of unique meetings between people representing different fields of expertise.



### 3. Courage to innovate and launch enterprises

Student Kristo Ovaska (on the cover of Aino magazine) has been involved in the creation of the Aalto Entrepreneurship Society and the Venture Garage, both of which help Aalto students launch business start-up ventures. These student-inspired activities have won much praise for their courage and creativity: Ovaska received a European Academic Enterprise Award for his boldness and initiative, with his promotion of entrepreneurship and innovation singled out for special praise.



### 4. Passionate about research and tango

Researcher and Project Manager Markku Anttonen from the School of Economics has two passions: research and Argentinean tango. The former he pursues in the corporate responsibility research programme, while the latter has been on display at, for example, the show arranged as part of the School of Economics’ 100th jubilee celebrations. Favela Vera Ortiz partnered Anttonen in the tango.



### 5. Towards sustainable development

Aalto University has a mission to change the world. The promotion of sustainable development is built inside this mission. It connects both with Aalto’s own activities – in particular the designing of an ecologically sustainable campus – and the emphasis

on responsibility and ethics in the university’s research and teaching. The themes of sustainable development relate to, for example, the utilisation of energy and natural resources as well as the designing of human-oriented living environments.

## Restructuring the School of Science and Technology

**The Aalto University School of Science and Technology (TKK) was divided into four schools at the beginning of 2011. The schools of Engineering, Chemical Technology, Science and Electrical Engineering were formed on the basis of the departmental restructuring conducted in 2008.**

Technology accounts for two-thirds of the fundamental volume of Aalto University and the new organisational structure makes this more clearly evident to external stakeholders in particular.

Aalto University now consists of six schools that are almost equal in size. A more balanced division makes the structure and management of Aalto clearer. The removal of the administrative “TKK level” provides the different departments of technology with more direct access to the leadership of Aalto University.

The new schools were given greater responsibility for their own fields. They now have better opportunities for deepening their expertise and can also profile themselves more clearly towards their chosen areas of strength. At the same time as the schools are freer to decide how they choose to implement Aalto’s strategy, they are also more clearly financially responsible for their own investments.

Services that were before produced in a centralised manner were relocated closer to the user at the new schools and departments as part of the restructuring. From the perspective of the students, changes are only minor.

Students still apply for a place in Aalto University’s technological degree programmes, which are produced by the schools of technology together and cooperatively. It also remains possible to choose minor subjects freely over school boundaries. The joint research and education programmes of the schools further emphasise the diverse and multidisciplinary aspects of Aalto.

Operating models for the new schools will be established during 2011. The possibility of merging the Department of Architecture and the School of Art and Design into a new school will also be explored in association with restructuring. A decision on this matter is to be taken in June 2011.

## The six schools of Aalto University



### School of Engineering | Focus on the built environment

The School of Engineering researches and teaches fields that encompass all aspects of our built environment. The School produces fresh knowledge and solutions to serve the goals of sustainable development. It pursues answers to questions associated with the wellbeing and aesthetics of our environment as well as with human health and safety.

Climate warming, energy conservation and the sustainable utilisation of natural resources form the focal areas of both research and education. Research covers the fields of architecture, civil and environmental engineering, structural engineering and building technology, surveying sciences, mechanical engineering, energy technology and applied mechanics. The School's research combines aspects of art, natural science and economics with the engineering sciences.



### School of Economics | Leading the way

The Aalto University School of Economics is one of the leading business schools in Europe and globally recognised for its management research and education in particular. It is the first Nordic business school to receive all three of the field's international accreditations (AACSB, AMBA and EQUIS).

The history of the School of Economics stretches back over a century. More than 22,000 holders of a B.Sc. or

M.Sc. in Economics and Business Administration as well as almost 600 licentiates or PhDs have passed through its gates to carve out careers in the service of Finnish and international companies. The School cooperates closely with the corporate world. In addition, internationally recognised MBA and Executive MBA programmes are offered by Aalto Executive Education.



### School of Chemical Technology | A marriage of engineering and natural sciences

Areas of emphasis for the School of Chemical Technology include environment-friendly and energy-efficient processes, the diverse utilisation of wood and other biomaterials, new materials and their application, new engine fuels, the shaping of micro-organisms and enzymes as well as novel pharmaceuticals and biomaterials. Education dovetails experimental natural

sciences with engineering disciplines, promoting close interaction between theory and practice.

The Masters of Science and Doctors of Technology who have graduated from the School work in a diverse range of tasks in Finland's most substantial branches of industry, such as the metal, electronics, wood processing, chemical, energy, pharmaceutical, biotechnology and food industries.



### School of Science | Cutting-edge research and practical applications

The School of Science engages in world-class fundamental research, the results of which it uses to develop scientific and technological applications. The School is home to seven Centres of Excellence in Research funded by the Academy of Finland. Five of the six best-performing departments in Aalto University's research assessment exercise belong to the School of Science.

The fields of computation and modelling, materials research as well as ICT and media account for a large share of the research performed at the School, which is also responsible for organising Aalto University's shared basic courses in mathematics, physics, information technology, industrial engineering and management, and languages.



### School of Electrical Engineering | From acoustics to electronics

The School of Electrical Engineering consists of eight research and teaching departments that combine technology with high-standard research and education in the fundamental sciences. There are almost two dozen research units, which focus on subjects ranging from acoustics to intelligent power electronics.

Important research areas include traditional electronics, electrotechnology and telecommunications

technology. Micro- and nanotechnology have also been emphasised by researchers in recent years. The School of Electrical Engineering houses two Academy of Finland Centres of Excellence in Research: the Finnish Centre of Excellence in Generic Intelligent Machines Research and the Finnish Centre of Excellence in Smart Radios and Wireless Research.



### School of Art and Design | For useful art

The School of Art and Design's motto Pro Arte Utili – for useful art – has now influenced its activities for 140 years. Today, the School is the largest of its kind in the Nordic countries and one of the most prestigious in the whole world.

The School researches design, digital media, audiovisual presentation, art education and visual culture.

Research and teaching are in close contact on all levels of education. The viewpoint of usefulness forms the foundation of artistic activity. Throughout its history, the activities of the School and its alumni have enriched Finnish design and broader culture alike.

## News cuttings 2010

### School of Economics ranked 22nd business school in Europe

The Financial Times published its ranking of European business schools on 6 December 2010; The Aalto University School of Economics placed 22nd on a list of 75 academic institutions included in the evaluation. The list was topped by HEC Paris, with second place going to London Business School. The Aalto University School of Economics was the only Finnish business school listed by FT.

### Research awarded by the American Chemical Society

Dr. Sami Nummelin from the Aalto University School of Science took part in an international team, who has prepared a library of synthetic biomaterials, so-called Janus-molecules, that mimic cell membranes. The results of the study was announced by the American Chemical Society as one of the most notable research results published in 2010.



### Students edit issue of Talouselämä magazine

Aalto University students were responsible for producing the content and designing the layout of an issue of Talouselämä magazine, which appeared on 3 September 2010. The editorial team consisted of four reporters and two graphic designers, who were given a free hand, with only



the size and material of the issue determined in advance. Talouselämä is published by Talentum Media.

*A facsimile of the student-edited issue can be accessed online free of charge at [www.talouselama.fi/opiskelijalehti/](http://www.talouselama.fi/opiskelijalehti/)*



## Strong specialised knowledge provides the foundation for multidisciplinary

Aalto University wants to rank among the world's top universities. Our units must attain the same standards as their counterpart departments at other international top universities. This will happen if Aalto bases its operations on its own strengths and develops profound expertise in carefully selected areas of specialisation.

High-standard specialised scientific expertise is a prerequisite for excellence in multidisciplinary research. Multidisciplinary can only create added value for the totality if its constituents are in good shape.

A research assessment exercise carried out at Aalto University identified computation and modelling, materials research, ICT and media, and design as the focal areas for research.

Computation and modelling are utilised in a wide variety of sectors ranging from medicine to forest management and cultural studies. Aalto University engages in first-rate fundamental research in this field and has developed a number of excellent applications.

The significance of materials research is also increasing. Biomaterials, the materials needed for nuclear power technologies and nanomaterials are examples of this field's areas of interest. Multidisciplinary is an everyday routine in materials research, with physicists and chemists, for example, involved in intense cooperation across various sectoral boundaries.

ICT and media is likewise the focus of great interest, thanks to the ubiquitous progress of digitalisation. In addition to technological problems, Aalto University conducts a lot of research into usability – such research is carried out in the School of Art and Design as well as at many

departments belonging to the schools of technology. A significant development in this field of research activity was the European Innovation and Technology Institute's (EIT) decision to establish one of its ICT Labs in Finland. The EIT ICT Lab is partnered with Aalto University, VTT Technical Research Centre of Finland and Nokia.

In addition to product development, design is needed in the creation of information systems and software, service design and community planning.

### Trying to solve humanity's greatest challenges

Aalto's strong competence in the abovementioned focal areas and our commitment to the multidisciplinary approach are evidenced by, for example, Aalto University's research projects associated with the energy industry.

"The sustainable utilisation of natural resources is one of humanity's greatest challenges. We've got plenty of expertise in this, starting from individual solutions such as solar cell materials and ranging to broader totalities like energy-efficient community planning," says Heikki Mannila, Vice President of Academic Affairs (Research and Education).

"For example, our commitment to multidisciplinary shows in how the consideration of effective business models forms an integral aspect of the planning of technical solutions. It is not enough for us to come up with an excellent system for reducing humanity's carbon footprint if no-one will use it. This is why a profound understanding of consumer behaviour is so important

for the research and design of solutions for sustainable development."

Aalto University's research has attracted both funding and accolades. The Academy of Finland granted infrastructure funding for five Aalto University projects totalling some €4 million in 2010. All of these projects support Aalto University's strategically important research areas, strengthen the university's traditionally high-standard competence or promote Aalto University's domestic and international cooperation with other universities and research institutions.

Aalto University currently employs four Academy Professors and seven ERC grantees. The faculty members have also received a number of prestigious awards. For example, Professor Janne Ruokolainen, who heads Aalto's national Nanomicroscopy Center, received the Väisälä Award from the Finnish Academy of Science and Letters. Among other things, Ruokolainen studies nanoparticles and supramolecular materials. For his part, Professor Matti Keloharju was granted the European Finance Association's year's best study award for the paper Do Smart Investors Outperform Dumb Investors?

The guidelines and foundation for Aalto's tenure track system were created in 2010 and the first tenure track positions opened for application; in all, 45 positions are to be filled during the system's first phase. The tenure track system provides essential support for Aalto's aim to develop into one of the world's top universities.



## Europe's finest management research

The European Group for Organization Studies (EGOS) 2010 conference awarded Executives' Labeling Strategies in Emerging Domains of Activity, a paper by Academy of Finland Research Fellow Nina Granqvist of the Aalto University School of Economics, as the year's best study. The paper examines how corporate executives make decisions when positioning their companies in new lines of business.

EGOS is the main European conference in the field of management research. It annually awards a study, which demonstrates methodological skill and theoretical innovativeness as well as introduces fresh perspectives into the phenomena explored by management research.

The study ranked first out of a group of almost 950 research papers. It is co-written by Boston University Adjunct Professor Stine Grodal and Santa Clara University Adjunct Professor Jennifer Woolley.

The study interviewed 50 executives from Nordic and US firms, which are considered

nanotechnology businesses. It demonstrates that a company's expertise and competence is just one factor in the making of decisions related to market positioning. Of the companies included in the study, only 61% were involved with products that are generally said to count as nanotechnology.

Factors of more importance to decision-making than competence include, for example,

consideration of whether positioning into a fresh market provides the company with access to new resources such as financing, the company's existing positioning in other sectors, the risks associated with the positioning decision and how believable stakeholders will find the new positioning.

The results challenge earlier studies, which have emphasised corporate expertise and competence as central factors for positioning-related decisions.

The study also provides some insight into the emergence of technology bubbles. There is often confusion within new and fashionable sectors about what kinds of companies are actually members of the emerging branch of industry. This results in the entry of a lot of companies that do not have substantial competence in the field. This can then easily lead to a situation where other stakeholders over-evaluate the size and potential of the market.

*Research Fellow  
Nina Granqvist being  
awarded at EGOS 2010  
Conference.*





## Cinema assisting brain research

Academy Professor Riitta Hari, who is the head of the Brain Research Unit at the Low Temperature Laboratory at the Aalto University School of Science, was named Academician of Science in November 2010. Her expertise in brain research and neuroscience is held in very high regard internationally. Professor Hari has developed brain modelling methods and related applications, and this work has been of crucial significance to the progress of her chosen field. She has worked at the Low Temperature Laboratory since 1982.

Hari is now concentrating her research on the brain events associated with interaction situations. The long-term development of magnetoencephalography (MEG) and its applications are among some of the best-known achievements of the Brain Research Unit. MEG measures brain-activity-related weak magnetic fields and provides information on neural activity broken down to an accuracy of mere milliseconds. In addition to fundamental research, these

results can be exploited in the diagnostics and monitoring of neurological illnesses.

Hari directs the aivoAALTO research project, which provides a concrete example of the cooperation that the different schools of Aalto University engage in. The project amalgamates the computational brain imaging and brain research

methods of the School of Science, the cinematic expertise of the School of Art and Design and the School of Economics' research into financial decision-making.

Movies provide stimulatory material, while the brain research explores inter-personal interaction in a maximally natural environment. In a corresponding manner, neuroeconomics studies the brain mechanisms involved in financial decision-making by combining expertise in brain imaging with economic theory.

In addition to her own research work, Riitta Hari is also active in the education of a new generation of researchers. She has directed thesis work in a diverse set of different scientific disciplines, including clinical neurophysiology, neurology, psychology, psychiatry, neuropsychiatry, audiology, physics, medical physics, neurosurgery and radiology.

*Professor Riitta Hari  
is one of the twelve  
Academicians of  
Science.*

## Polymer technology for sustainable development

The Academy of Finland has named Jukka Seppälä as Academy Professor for the period 2011-15. Seppälä, who is the Professor of Polymer Technology at the Aalto University School of Chemical Technology, has developed innovative new po-



lymerisation methods and explored fresh applications for the new materials developed at his lab.

Sustainable development is an important driving force behind polymer technology. The

polymer materials in use at the moment are primarily based on crude oil.

“We are focused on researching the kind of chemistry and technologies that enable the utilisation of new, renewable raw materials in polymer manufacture. In addition to manufacture, the control and tailoring of polymer properties are important areas of emphasis. This underlines the significance of developing a profound understanding of the correlations between chemical structures and properties,” Seppälä says.

### Applications for surgery and pharmaceutical dosage

Agriculture- or wood-based raw materials like cellulose fibres can be refined into polymers and further into a variety of technical materials. In addition to technology, such materials find application in the field of medicine.

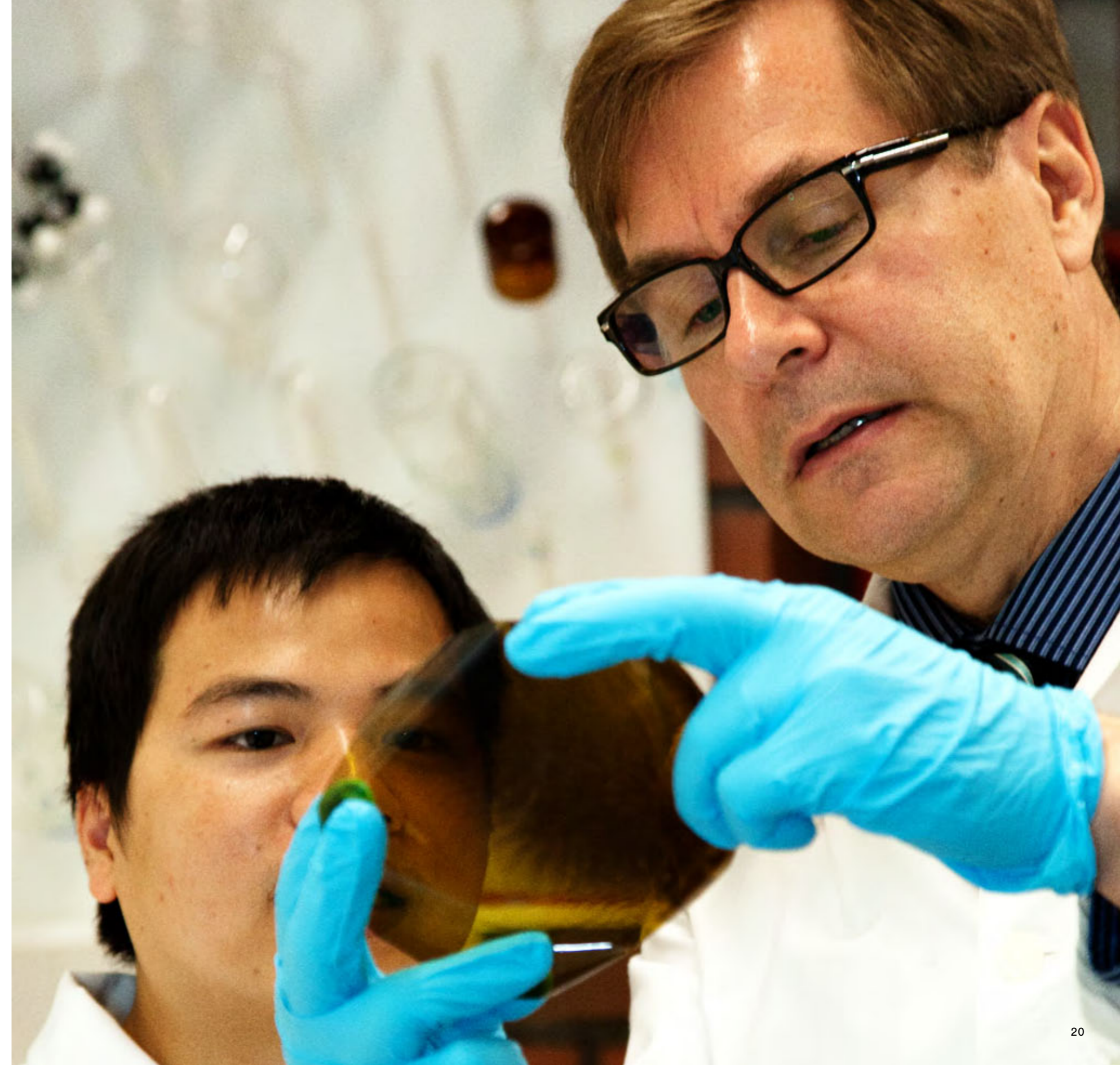
The bioactive composite materials, which have been developed by the research team headed by Professor Seppälä, have a wealth of potential ap-

plications, especially as surgical materials and in relation to the dosage of active materials.

“For example, polymer support materials that promote tissue regeneration and withdraw from the body after they have performed this function are needed in restorative surgery. Correspondingly, surface-active biopolymers enable new kinds of treatments in which biotechnical pharmaceuticals can be released into the system in a slow and controlled manner.”

As Academy Professor, Seppälä focuses his research into manufacturing new polymers for use in biomedicine and applying novel 3D technologies to the manufacture of bioactive matrices.

“Our strengths include the ability to tailor alternative raw ingredients into materials with specific, tightly defined properties. Specialist knowledge in chemistry, reaction technology and catalysis are emphasised in our work along with cooperation between different fields of science,” Seppälä notes.





## World-class artistic activity

Aalto University wants its artistic activities to attain world-class standards. The aim is for Aalto to be an internationally recognised reformer and pioneer in art, architecture, media and design.

Aalto's strategy affords artistic activity equal significance with education, research and social influence. As part of its definition of clearer objectives for the attainment of world-class artistic activity, the university also created quantitative and qualitative indicators to facilitate the assessment of operational development. An agreement was also made to conduct qualitative peer evaluations.

Indicators on operational development include, for example, participation in international and domestic art exhibitions as well as Finnish and foreign awards and recognitions.

2010 was a very successful year with respect to exhibitions and awards. Prizes and recognitions were handed out to staff, students and alumni alike. There were almost 200 participations in

international exhibitions and performances, for which Aalto University received 36 prizes or commendations.

Prizes were won from a diverse range of competitions in different fields, but film and clothing design were particularly successful internationally in 2010.

How to pick berries, a movie directed by Elina Talvensaari, won prizes at, for example, the San Sebastian Film Festival, while The Painting Sellers, a fiction film directed by Juho Kuosmanen, won the main prize at the Cinéfondation contest in Cannes.

Satu Maaranen won the Designers' Nest Nordic design contest with her ladies wear collection. Other award-winning clothing design students include Essi Lehto, Elina Määttänen as well as Elina Peltonen and Alisa Närvänen.

Serving in different types of expert positions is one indicator that measures artistic activity.

Invitations to join evaluation panels in the field of the arts and other assessment responsibilities serve to demonstrate the high regard felt for the professional competence and integrity of Aalto faculty members.

Qualitative indicators are also needed in addition to quantitative benchmarks. This is why international experts evaluate the quality and significance of Aalto's artistic activities.

International recognition for Finnish design expertise is well established, and other artistic endeavours such as the Helsinki School project of photographic art are nowadays being recognised alongside it. The Helsinki School refers to a novel approach to photographic art, which is being propagated by the Aalto University School of Art and Design students, alumni and staff.

*Designs by Julia Petley-Jones in the School of Art and Design's fashion show.*

## Masters of Arts showcased in the heart of Helsinki

Masters of Arts, the Aalto University School of Art and Design's annual exhibition, took over the very centre of Helsinki in spring 2010. The event was staged in premises adjacent to the Senate Square that previously served as offices and were awaiting renovation at the time.

The title of the exhibition was City of the Senses and its main themes were the design and customisation of the urban environment as well as the future of art and design. Diploma works by more than 80 graduating design and art professionals were on display. The so-called "slow arts" – drawing, cartoons and photography, which is inspired by light and nature – were presented alongside design and media works.



Media Artist Marita Liulia served as the exhibition curator. She says that the exhibition took artists and audience alike on a "shared journey through time, both into the history of Helsinki and towards the future of design and art."

Some of the works included in the Masters of Arts 2010 exhibition continued on the Masters on the Road tour, which visited the Finnish-Norwegian Cultural Institute in Oslo.



## The Painting Sellers victorious in Cannes

The Painting Sellers, a fiction film directed by Juho Kuosmanen, won the main prize at the Cinéfondation contest in Cannes. In addition to winning €15,000 in prize money, Kuosmanen is now entitled to enter the first feature-length film he directs in the main event of the Cannes Film Festival.

Jury chairman Atom Egoyan praised the brilliance of the film's direction as well as the fine integration of its segments, the cinematography and acting in particular.

The Cannes Film Festival established the Cinéfondation event in 1998 for pictures produced by film schools. Kestomer-kitsijät, a short film by Kuosmanen, placed third in the 2008 Cinéfondation event.

Kuosmanen submitted The Painting Sellers as his diploma work to the Department of Motion Picture and Production Design at the Aalto University School of Art and Design. The movie tells a story about a first job, Christmas in remote Finland and illustrates how to deal with an incipient friendship.



## Teaching being modernised on many fronts

Aalto students initiated many significant projects during the university's first year of operations. The Aalto Entrepreneurship Society and the Venture Garage were established to encourage start-up businesses, while Aalto Social Impact emphasises the significance of social responsibility. Aalto on Tracks transported a group of Aalto students and faculty to the World Expo in Shanghai.

“Our students have demonstrated exemplary initiative by thinking up these ventures, which are extremely significant in volume and intensity. After their conceptual work, the university started to provide support for these projects and we have adjusted our systems to enable viable ideas to be realised as flexibly as possible,” says Vice President Martti Raevaara, who is in charge of education-related academic affairs at Aalto.

For example, Aalto Social Impact came up with the idea for How to Change The World, which turned out to be one of the most popular multidisciplinary courses at Aalto in 2010, while the Shanghai rail trip offered an entirely novel study environment, as students also participated in exams during the journey.

Student-oriented activities have played a big role in the modernisation of education. Work is also ongoing to develop degree requirements and structures as well as teaching methods.

“The revision of our curricula commenced immediately. We have decided that plans and designs must be oriented towards future competencies and that they have to provide support for mobility, working life contacts and lifelong learning, for example. All schools now share the same periods and the study season has also been lengthened. International mobility is promoted

through grants and our aim is that, in future, each and every student will have participated in an overseas exchange.”

Pedagogic methods are renewed also through the digitalisation of education. For example, Aalto has established its own Second Life archipelago that houses a virtual chemistry lab where students can conduct experiments. We are still proceeding on a project-by-project basis, but substantial pedagogic leaps forward have already been achieved. Aalto's various Factories also represent a new type of learning environment in which students, researchers and businesses can meet to perform joint projects.

The line between formal and informal learning will continue to blur in the future. Information networks are changing the ways with which we seek out, share and build knowledge together. Traditional teaching methods will survive alongside these new developments, but the role of the educator will evolve from a distributor of knowledge to something more akin to a trainer who supports students in the learning of new ideas, skills and meanings.

“Our educators and teaching methods are excellent. An area that we are particularly keen to develop is teacher-student encounters. The aim is that they could act in maximally enriching and mutually beneficial interactive relationships,” Raevaara says.

### Teaching assessment exercise promoting a culture of open feedback

Aalto launched a project to evaluate the standard of teaching and education in 2010; the aim is to determine the current strengths and development

needs of teaching on the degree-programme level. The assessment will also help optimise the allocation of resources and develop Aalto's quality control system for teaching, in addition to which it will contribute to the creation of a fresh culture of constructive feedback. The assessment will be completed in autumn 2011.

Aalto University's Student Services unit is responsible for providing the student body with services, in addition to which it supports teachers in the drafting and implementation of curricula. Each school has its own student services manager and cooperation between the university and its schools and departments is close.

“We ensure that students are provided with conditions, which enable them to focus on their studies appropriately. They must be able to avail of a similar set of services in each of the university's schools to make mobility as easy as possible,” says Anneli Lappalainen, who heads the Student Services unit.

An appropriate target standard for the development of teaching and services is currently being sought to facilitate harmonisation on the university level. Harmonisation is needed to enable the maximal utilisation of synergy benefits as well as to make it possible to realise inter-school mobility and other strategic goals in full. However, there are many things that we cannot and do not want to cast in the same mould. The uniqueness of Aalto is borne out of difference, out of the opportunity to do things in many different ways.

*Lecturer of Photography Antti Huittinen with student Susanna Kesänen in a photo studio.*

## Teacher of the Year a believer in charisma

The best teachers of Aalto University's first year of operations were:

**ARVO VITIKAINEN**  
School of Engineering

**VILLE ALOPAEUS**  
School of Chemical Technology

**KIMMO SILVONEN**  
School of Electrical Engineering

**MIKKO TARKKALA**  
School of Economics

**HANNELE WALLENIUS**  
School of Science

**PETRI LANKOSKI**  
School of Art and Design

The Aalto University Student Union has named one teacher from each Aalto school as Teacher of the Year 2010. The awards were handed out in order to emphasise how important high-quality teaching is to the formation of positive learning experiences.

The recipients were chosen on the basis of student nominations. Selection criteria included teaching content, student-orientedness, innovative teaching approaches and readiness to provide guidance to students.

Teacher of the Year at the Aalto University School of Science is Professor of Industrial Economics Hannele Wallenius (in the photo).

"I was probably recognised because of the introduction to economics course. It is a big course, with some 400 students participating in training assignments on topical issues, such as the financial crisis or the future of the welfare state. I do my best to inspire the students about the topics being dealt with. This has a greater chance of success if the teacher manages to establish a personal contact with the students."

Wallenius thinks teachers should be charismatic and dare to be different. A teacher's charisma often provides a source of inspiration for students – it is not uncommon for Nobel laureates to teach introductory courses at universities in the United States, for example.

"I try and provoke my students to challenge me and think about matters from a fresh viewpoint. I am very enthusiastic about my chosen field, I like my students and take an interest in them. I send weekly e-mails about my lectures, do my best to grade exams quickly and provide students with direct feedback," she says.





## VIPU helps boost interaction in teaching

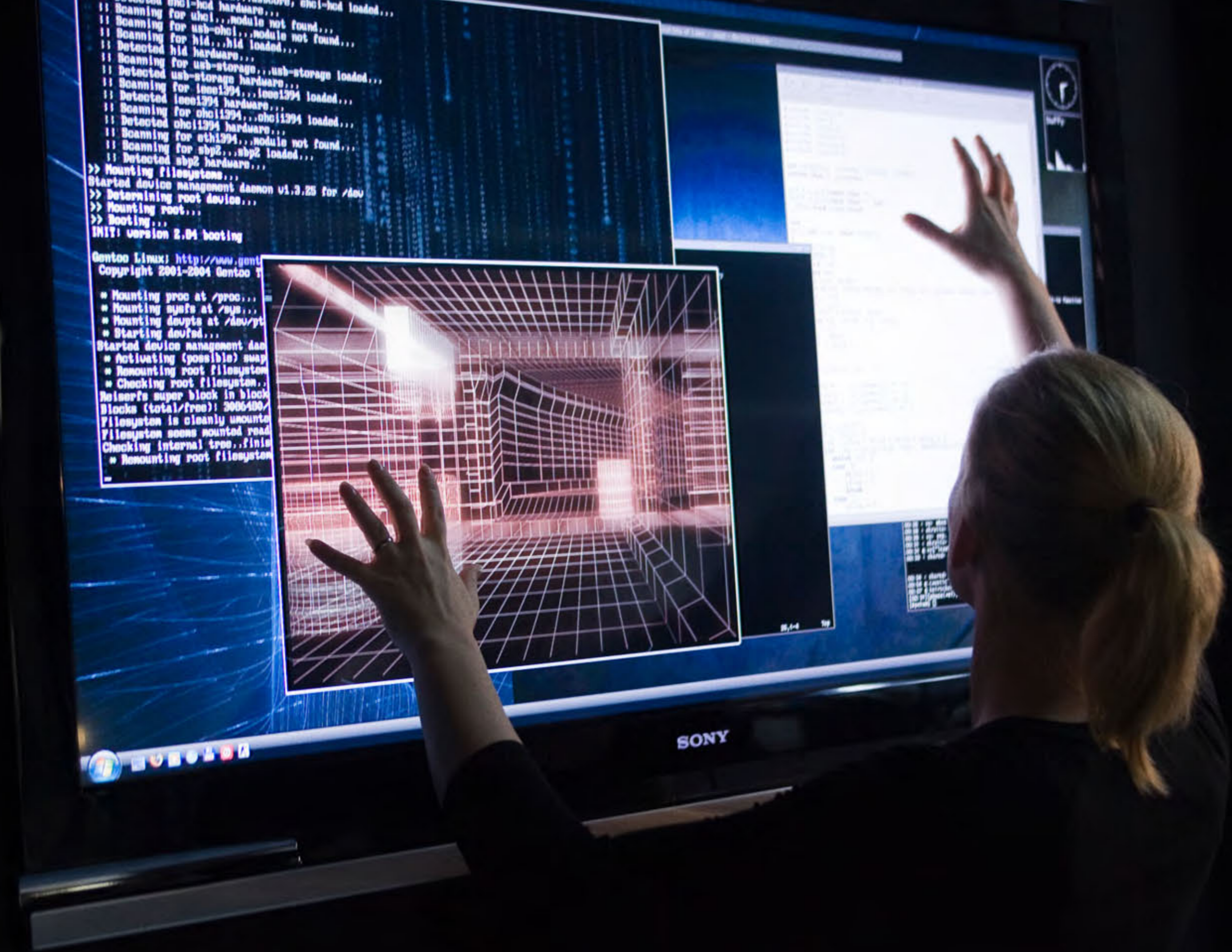
Aalto University is actively developing the utilisation of information and communications technology (ICT) in teaching. This work is performed by the VIPU team, which belongs to the Strategic Support for Research and Education unit.

VIPU consults and supports teachers in relation to, for example, the adoption of new learning environments. Of particular interest at the moment are wikis, i.e. communal websites, whose contents can be edited cooperatively by teachers and students.

“ICT has traditionally been used for the distribution of learning materials. Our aim is to promote interaction in the utilisation of these systems. This enables students to perform group assignments online in between lectures, for example,” says VIPU Development Manager Lauri Saarinen.

VIPU’s development experts work at the Arabianranta, Töölö and Otaniemi campuses, in close proximity to teachers and students. They are currently busy creating common systems that will be used throughout Aalto University to provide each course with a dedicated website, for example.

VIPU’s work aims to make routines easier as well as to facilitate new modes of interaction and debate, enabling the maximisation of positive learning experiences. The team also provides consultation for the development of learning materials; the goal here is to refine the present, text-heavy materials towards a more visual format.



## Students create a fresh look for airplanes



Students from the Aalto University School of Art and Design designed a fresh visual appearance for the new fleet of the Blue1 airline. The work formed part of the graphic design degree programme's corporate image design course.

The cooperation between Aalto and Blue1 provided students with a rare opportunity to engage in large-scale corporate image design.

"The assignment was just about the dream brief for a graphic designer," say Master's student Annukka Saikkonen (on the right) and Belgian exchange student Magali Abraham (on the left), who were together responsible for designing the new visual appearance.

A fresh concept and visual appearance was created for Blue1's new planes as part of the corporate image design course. An aquatic-themed visualisation was selected for realisation. Blue1 has named these plans after Finnish lakes, and the new identity means that this idea will also be implemented visually.

Blue1's Communications Director Tom Christides says that the Aalto cooperation has been fruitful.

"The School of Art and Design is a pioneer in graphic design in Finland and thus made a natural cooperation partner for Blue1's project to design services for a new generation of passengers."





## Finland's first satellite being built by students

Civilian satellites are usually sent into orbit by major nations and aerospace organisations. The size of satellites has reduced in the 2000s, however, and several micro- and nano-satellites have been launched into space. Universities have also become keener to make their own satellites as part of this development.

The Radio Science and Engineering Department\* started its Aalto-1 student satellite project at the beginning of 2010. The aim is to launch the very first Finnish-built satellite into space in 2013. The majority of the design, construction and testing of Aalto-1 will be performed by students.

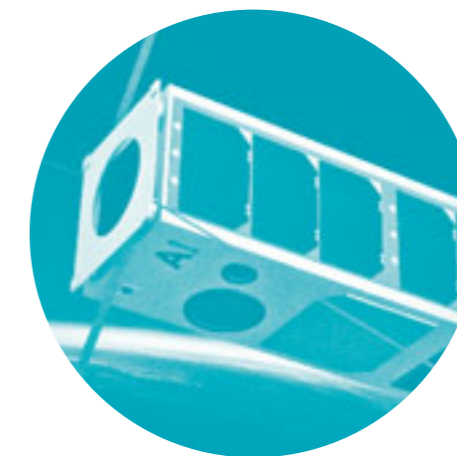
Aalto-1 is a miniature satellite of the CubeSat type, which is the most common student-built satellite format. Its total mass is three kilos and it is small enough to fit into a backpack, but it has all the properties required of a full-blooded satellite.

Aalto-1 has more ambitious scientific and technological goals than the usual student satellite project. Its purpose is to demonstrate the suitability of nano-satellites for remote sensing missions as well as to prove the functionality of

small interferometers, which are utilised in spectrometers, in space applications as well. The main instrument of Aalto-1 is the world's smallest imaging spectrometer, which was developed by VTT Technical Research Centre of Finland.

The issue of satellite-created space junk, which hampers the functioning of operational satellites, has also been considered in the project. A plasma brake, whose design is based on the electric sail concept, will be installed on Aalto-1; it will make it possible to steer the satellite out of orbit once it has completed its mission.

The Aalto-1 project is realised as part of the research programme of Aalto University's Multidisciplinary Institute of Digitalisation and Energy. Professor Martti Hallikainen of the Radio Science and Engineering Department is in charge of the project, with Researcher Jaan Praks acting as project manager.



*\*Since 2011, the Department is part of the School of Electrical Engineering.*



## Recognition for zero-energy house

Luukku, a zero-energy house designed by Aalto University students, has received national and international acclaim. Luukku placed fifth in the Solar Decathlon Europe 2010 competition, an event in which European universities compete in the building of maximally energy-efficient houses. In Finland, it received the Wood-use Promoter of the Year and the Wood Award 2010 prizes.



## Active social agent

One of Aalto University's key tasks is to understand and anticipate society's needs. Aalto wants to be an active social agent and contribute to the promotion of the citizenry's prosperity and well-being. Among other things, our social impact is demonstrated through projects that are realised in cooperation with businesses and the public sector.

Aalto University's different schools have for decades been engaged in a wealth of cooperation projects with the corporate sector. Companies have been very keen to develop this cooperation further. The aim of these joint projects is the promotion of high-standard research, which also answers the needs of business life. Tieto Plc, for example, cooperates with the Aalto Service Factory on research related to electronic financial administration and mobile commerce.

Services that promote corporate cooperation were the focus of development efforts in 2010. The university's supplementary education programme, Aalto PRO, was also reorganised to better correspond with Aalto's multidisciplinary operating model.

Aalto applied its scientific-boundary-crossing operating philosophy to leadership education by redesigning the activities and training programmes offered by Aalto Executive Education. Aalto EE's Leadership Lab aims to become a unique laboratory of management skills, which will explore new creative and participatory working practices in search of breakthroughs.

The inaugural Aalto Camp for Societal Innovation (ACSI)

programme also provided an example of our interest in social interaction. The year-long programme culminated in a innovation camp, whose participants gathered for one-and-a-half weeks in summer 2010 to resolve challenges associated with, among other things, the development of urban structures and services for senior citizens.

ACSI aims to discover fresh innovations by serving as a catalyst to the cooperation professors, researchers and students are engaged in with municipalities, public administration, companies and other Aalto University stakeholder groups.

"ACSI dovetails well with the values and goals of Aalto University. It employs a creative and bold approach in its search for new solutions," says Vice President Hannu Seristö, who is in charge of Aalto's Knowledge Networks area.

### Growth entrepreneurship attracting global interest

Aalto is also involved in an increasing amount of cooperation with different cities. The objective is to resolve challenges associated with urban development and the quality of life. In Espoo, Aalto is participating in the T3 project that is studying new solutions for cooperation between science, art and business. Cooperation projects with Helsinki focus on the development of the city's transport systems as well as the reconciliation of work and housing needs.

"Social responsibility forms an integral aspect of our teaching; an example is provided by the Creative Sustainability Master's degree

programme, which is organised jointly by different Aalto schools and deals with themes associated with sustainable development and corporate responsibility. We have also provided support for the students' own Aalto Social Impact movement."

Supporting and encouraging entrepreneurship is also an aspect of social influence. The intention is to combine student ideas and Aalto's research into commercial products and services. There is strong national demand for these activities – the university is engaged in cooperation with, for example, the Finnish Funding Agency for Technology and Innovation and the Federation of Finnish Technology Industries.

Entrepreneurship and innovation services that promote growth-oriented business start-ups are provided by the Aalto Center for Entrepreneurship (ACE), which cooperates closely with the student-founded Aalto Entrepreneurship Society.

"The university and its students have been involved in lots of fruitful cooperation projects during Aalto's first year of operation. We have been consumed with a fresh spirit of can-do. This is a truly wonderful thing and it establishes a solid foundation for the future," Seristö says.

*The Service Factory is one of the three Aalto Factories. It brings together the service-related expertise of Aalto University. In the picture Researcher Tuuli Mattelmäki.*



## From idea to business

Aalto University's entrepreneurship and innovation services unit, the Aalto Center for Entrepreneurship (ACE), coordinates activities related to the teaching and researching of technology transfers, intellectual property rights, business start-ups and growth-oriented entrepreneurship. Its objective is to shape the scientific and artistic activities of Aalto University into business success stories as well as to serve as a catalyst for ambitious entrepreneurs.

New business concepts are supported by helping in the drafting of business plans and market surveys as well as by securing the funding needed for the establishment of a company. An important tool in the early stages is the Aalto Venture Garage,

*Aalto Center for  
Entrepreneurship  
has entered into a  
partnership with  
Stanford University.*

where students, researchers and entrepreneurs who have already made their bones can develop business concepts into functioning firms.

ACE has entered into a partnership with Stanford University School of Engineering's entrepreneurship unit, the Stanford Technology Ventures Program (STVP). The partnership aims to foster innovations, create jobs and businesses as well as to shape Aalto University into Europe's leading entrepreneurship-oriented university.

"Partnership provides enormous opportunities for Aalto's students, researchers and companies," says Will Cardwell, who heads ACE. STVP Executive Director Tina Seelig says that the strong culture of entrepreneurship among Aalto students provided a central reason for forming the partnership: "We admire the way in which Aalto's students have influenced the evolution of the university's culture."

*Timo Herttua and Tuomo Riekkii participated in the student-founded Aalto Entrepreneurship Society's Summer of Startups programme. Their business idea Dealmachine is a web-based CRM programme that utilises game dynamics.*

## Building a pyramid of prosperity

The Base of the Pyramid (BoP) concept refers to user-oriented innovations that benefit income-poor citizens of emerging markets. The BoP project of the Aalto University School of Economics searches for business models that can be applied in emerging markets.

The aim of the project is to build a cooperation network to support sustainable business activities as well as to produce tools for user-oriented innovation. The project examines ecologically sustainable solutions to the problems of poverty in cooperation with user communities.

Besides being socially beneficial, poverty-reducing innovations can also be profitable business ventures. The business concept of a responsible innovation is to provide a product or service that has been developed to resolve a social defect or environmental problem.

The BoP project Aalto is coordinating will run for two years. It involves the testing of new

business models and the development of a cooperation network through concrete pilot ventures.

Aalto is responsible for three pilots: the development of low-cost diagnostics in India, the



promotion of the textile industry of Brazil and innovative entrepreneurship programmes in Afghanistan and Nepal.

The Plexus project, which supports innovative entrepreneurship, is based on the many years of groundwork laid down by the Innovation Democracy organisation at the University of Kabul. This project is now being expanded to Nepal. The Plexus pilot venture develops innovative pedagogies to support entrepreneurship and trains the teachers of Kabul and Tribhuvan universities in experience-based learning. The goal is to educate students about innovative entrepreneurship so that they'd enjoy better opportunities for finding employment and earning a livelihood after graduating.

*The BoP project in India focuses on the development of low-cost diagnostics.*



## Educating executives

Aalto-owned companies, which provide management development services, merged in April to form a new firm called Aalto Executive Education. Its mission is to build a better world through improved leadership. Aalto EE wants to educate a new generation of executives.

Aalto EE introduces a multidisciplinary approach and innovative new learning methods to management development. These are applied in, for example, the Aalto MBA and Aalto Executive MBA programmes, the AaltoJOKO scheme and a new management-development project called Leadership Lab.

Aalto's MBA programmes are based on the past MBAs offered by the Helsinki School of Economics and the Helsinki University of Technology. The first joint programme is the Aalto Executive MBA. This high-profile training programme for corporate executives focuses on the challenges of today's new leadership requirements and takes

advantage of a number of multidisciplinary study periods.

AaltoJOKO provides information and insight for the diverse and effective development of the individual's own leadership abilities as well as the organisation as whole. It is based on the JOKO



programme's strengths, which were honed over its 40-year history.

The Leadership Lab is Aalto University's spearhead project in management development. Its goal is to achieve a breakthrough in the development of human leadership capabilities. Leadership Lab combines scientific research, experimental application and pedagogic innovation. It forms an inspirational environment for visionary efforts and the implementation of strategy, helping leaders evolve and recalibrate their skills.

Aalto Leaders' Insight, a new discussion forum aimed at decision-makers and corporate executives was launched in autumn 2010. It provides opportunities for interaction and the exchanging of ideas across sectoral boundaries with the aim of nurturing debate on leadership in the future.

Aalto EE generates a turnover of about €10 million and its staff is about 50 strong. It owns a subsidiary in Singapore that was established in 2000.

*The premises of Aalto Executive Education are located at the Domus Gaudium building in Töölö district in Helsinki. Its Latin name means 'a house of joy' or 'delight'.*





## Making internationality an everyday aspect

Aalto wants to make internationality an integral aspect of all activities. This strategy places special emphasis on international partnerships, student and staff mobility, student recruitment and the development of an international campus. A dedicated service unit has been established to promote these matters.

The aim is for Aalto University to acquire about ten international strategic partners, who will participate in broad-reaching cooperation. In addition to these, Aalto will enter into special partnerships for other specific reasons, such as student exchanges.

Aalto's first strategic partner is Tongji University, whose Shanghai campus is now home to the Aalto-Tongji Design Factory. Plans for broader cooperation are steaming ahead.

The cooperation with Stanford University was also strengthened in 2010. Aalto researchers have for quite some time been participating in the PhD workshops of the Stanford-affiliated Scandinavian Consortium for Organisations Research (SCANCOR). These two universities also organise a joint course, which focuses on product development and design thinking.

Aalto Center for Entrepreneurship has also started to cooperate with Stanford's corresponding business start-up support functions. The aim of this cooperation is to foster innovation and

new businesses as well as to build Aalto into Europe's leading university in the development of entrepreneurship.

Aalto is currently exploring all of the partnerships and networks that have been created by its schools. The objective is to establish uniform criteria to enable improved management, development and evaluation of partnerships.

### More mobility

One traditional measure of internationalisation is student exchange. At present, about a quarter of Aalto students participate in an exchange at some stage of their studies. The aim is to raise this ratio to 50% by 2015. The university supports exchange participation by providing grants and wants to ensure that all students enjoy equal opportunities for mobility to overseas academic institutions. The international mobility of Aalto employees is also the focus of support.

About 500 foreign nationals worked at Aalto University in 2010, while some 1,600 degree students were non-Finnish. The university has cooperated with the University of Helsinki to secure apartments for use by visiting international employees.

Aalto has a strong will to attract more international students and faculty members, and is now

working to improve their operating prerequisites and implementing measures that will ease their integration. These actions will enable international students and employees to serve as fully functioning members of the Aalto community.

The objective is to shape Aalto University into an interesting place of study, which is able to attract the best talents from all over the world. Marketing efforts emphasise Aalto University more than the individual English-language degree programmes. Marketing is conducted online in particular, in addition to which Aalto participated in almost 20 student recruitment fairs in different parts of the world in 2010.

The work of the International Relations unit has gotten off to a flying start. During the first year of operations, the focus was on exploring the shared needs of a new university as well as the establishment of common operating models. The new Aalto University is of interest to the world – this keen curiosity was demonstrated by some 20 large delegations, which visited the university during 2010.



## Mobility 2010 (2009)

Includes exchange students, free-mover students, trainees and all levels (Bachelor/Master/PhD)

■ Aalto students participating in exchange 2010: 874

■ Aalto students participating in exchange 2009: 762

762

874

■ Exchange students at Aalto 2010: 867

■ Exchange students at Aalto 2009: 804

867

804

## Aalto presents itself to the world

Aalto University was strongly present at the 2010 Shanghai World Expo and the many events arranged around it. In all, Aalto University realised 15 projects as part of the Aalto in Shanghai totality. The theme of the World Expo, Better City – Better Life, formed the point of departure for all Aalto projects.

Aalto University has entered into a partnership with Shanghai-based Tongji University. The joint Aalto-Tongji Design Factory (ATDF) commenced operations at Tongji campus in May 2010.

ATDF continues the traditions of the original Otaniemi-based Design Factory: it provides opportunities for open-minded, applied cooperation between universities and the corporate sector. ATDF encourages dialogue and joint ventures between students, teachers, researchers, industry and commerce.

ATDF also contributed to the foundation of the new Sino-Finnish Centre, an organisation that promotes cooperation between businesses and academia in Finland and China. The establishing

of this organisation reveals how important China's role is in Aalto's internationalisation strategy.

The finest universities and businesses of Finland and China as well as a host of other top international academic institutions will participate in the activities of the Sino-Finnish Centre and the ATDF. This will help shape the Sino-Finnish



Centre into an internationally significant hub of teaching, research and innovation activity.

Other Aalto in Shanghai projects included the Aalto LAB workshop, which focused on identifying responses to social challenges, as well as the Helsinki Higher Education Days project, a presentation of institutes of higher learning located in the greater Helsinki area that also focused on cooperation between different universities. Aalto on Tracks took one hundred Aalto students, staff members and cooperation partner representatives on a leased train from Helsinki to the World Expo in Shanghai. The student-organised journey provided a unique and diverse learning experience.

Aalto University also participated in Kirnu, the Finnish exhibition pavilion. Students from the Aalto University School of Art and Design were involved in the creation of the world's largest textile wall, which was on display on the second exhibition floor of Kirnu. Aalto students also designed the uniforms worn by Kirnu's guides.



## Different perspectives, fresh insights

Brazilian Carla Perrupato commenced her studies in Aalto's Creative Sustainability Master's degree programme in autumn 2010. The international and multidisciplinary programme consists of lectures, seminars and a practical training component that is performed in cooperation with businesses, organisations and municipal authorities.

Perrupato was interested in the programme specifically because of sustainable development. She wanted to explore the challenges we are facing and the debate that these give rise to as well as study how people from different backgrounds approach these problems.

"I want to help find solutions to the challenges of sustainable development. In order to do so effectively, I must study the subject diligently,

developing a profound understanding of its various aspects. I expect the programme to introduce me to different perspectives and fruitful debate, which will enable me to test my own ideas against those of others."

Perrupato says that the programme has been rewarding and challenging in a positive way.

"We are a very motley group, with students coming from a lot of different countries and a wide variety of backgrounds. Each of us introduces a unique contribution to our debates, which have been fruitful. The visiting lecturers have also been very good: their stories and experiences, research and other work have been of great benefit to our learning."

Perrupato has already lived in Helsinki for a while and studied at the School of Economics. She is full of praise for the peacefulness, beauty and magnificent infrastructure of the city. She identifies multiculturalism, practicality and communality as the strong points of Aalto University. Even though Aalto is big, it is easy to approach: maintaining contact with, for example, the professors is an uncomplicated affair.

*The students of Creative Sustainability programme puzzle over such problems as the aftercare of earthquakes.*



## New ideas for developing academic organisation

Aalto University's HR Services unit focused on four larger totalities in 2010. The unit participated in the creation of new career systems, provided support for academic leadership and internationalisation as well as helped modernise the service organisation.

The first application rounds of the new career system attracted plenty of hoped-for interest, with many top Finnish and international researchers submitting applications. The HR Services unit has participated in the development of the tenure track career system for professors and lecturers, helping establish shared operating models. HR Services has also provided assistance to the departments in various application process phases.

Even internationally, it is unique for the HR function to work in such close cooperation with academic staff. The substantive expertise related to tenured positions comes from the heads of the different schools and departments, while HR Services helps realise maximally efficient processes. Another example of new thinking in this field is that career paths and associated criteria are also being established in the service units.

The launch of Aalto University is a large-scale change process. A management system has been established for the new university and much thought has been put into the principles underlying leadership and decision-making.

The role played by academic leaders, department heads especially, is crucial. They are experts who have to be provided with opportunities for deepening their expertise. At the same time, they must provide inspirational leadership. This academic leadership and its development have been supported in many different ways. For example, the Aalto Leaders' Dialogue forum enables the university's senior management and department heads to deliberate topical leadership-associated questions and themes.

Internationalism is an aspect of all operations at Aalto; in this area, HR Services is cooperating closely with both International Relations as well as the other service units. A central objective is to boost international recruitments and mobility.

Recruitment is made easier when the services and resources on offer to researchers are in good order and overseas recruits can be settled into Finnish society as flexibly as possible. These

operating prerequisites are the focus of constant development.

The fourth major area of operations has involved the building of our own service organisation and the provision of support to the reorganisation of other service units.

HR Services plays an increasingly strategic role at Aalto University. This also calls for new kinds of competence within the service organisation. The organisation has been built to provide employees with opportunities to transfer from one school or department to another, assuming new professional responsibilities in a fresh environment. This operating model has introduced lots of fresh ideas and has facilitated the dissemination of best practices.

*The management of Aalto University meets regularly at the Aalto Leaders' Dialogues.*

## Tenure Track

■ Fixed term

■ Permanent

1A

1B

2

3

**1A. Assistant Professor**  
First term (3-5 years);  
fixed-period

**1B. Assistant Professor**  
Second term (4 years);  
fixed-period

**2. Associate Professor**  
Permanent or fixed term

**3. Full Professor**  
Permanent term

**Distinguished Professor**  
(Aalto Professor)

## Support for different career stages

Aalto's tenure track career system offers the best researchers a clear and supported career path towards a tenured professorship. This career system demonstrates Aalto's strong commitment to supporting the academic careers of talented researchers: the aim is to enable scientists to focus on world-class research.

The career system provides support for the personal, professional and academic growth of recruited researchers.

The system is open and transparent. The profiles of the positions are described in great detail, and the career advancement is based on clear rules, evaluation criteria and incentives.

Recruits can, depending on their experience and competence, enter on any of the career path's three levels, which are:

- Assistant Professor, first or second term
- Associate Professor
- Full Professor

*\*Since 2011, the Department is part of the School of Science.*

*The doctoral thesis is often the first stage of the researcher's career. Doctor of Technology Liisi Schulman took part in the ceremonial conferment of degrees at the School of Science and Technology in October 2010. She was accompanied by the 6-month-old Ulla Schulman.*

Three aspects of performance are evaluated: research or corresponding artistic merits, teaching, and academic leadership and participation in the scientific community. Aalto University's strategy and values are taken into account in all career path evaluations.

### Risto Nieminen awarded the status of Aalto Professor

Professor Risto Nieminen was the first to be awarded the status of Aalto Professor (Distinguished Professor) at the opening ceremony of Aalto University in January 2010. This is a position awarded to leading figures in faculties that achieve internationally prominent positions in their respective fields.

Professor Nieminen is specialized in computational condensed-matter and materials physics, including nanosciences and nanotechnology.

He is also the head of COMP Center of Excellence in Computational Nanoscience at the Department of Applied Physics\*.





## FiDiPro to attract more international stars to Aalto

Finland Distinguished Professor (FiDiPro) is a joint Academy of Finland and Finnish Funding Agency for Technology and Innovation Tekes funding programme that has the goal of head-hunting professor-level top researchers to Finland. It aims to attract both foreigners and Finns who have been working abroad for a long time.

The objective of the funding programme is to establish new formats for international cooperation in fundamental and applied research as well as for corporate research and development activities. Aalto University's schools of technology support 15 FiDiPro professorships in total.

The FiDiPro programme granted two new research projects to Aalto University in 2010. Professor Xiaohong Wang of Tsinghua University

joined the BIT Research Centre\* to work on a research project focusing on the rapid manufacture of artificial tissues and Professor Gregorz Glinka from Canada's University of Waterloo joined a project at the School of Engineering's Department of Applied Mechanics.

FiDiPro also provides Finnish researchers with good opportunities for international collaboration. Cooperative relationships formed during the early part of a scientist's career are very important and help researchers position themselves within the international scientific community.

At its best, cooperation is very long-term. For example, FiDiPro Professor Hisao Yamauchi from Tokyo University of Technology works in a research group headed by Academy Professor

Maarit Karppinen who is in charge of the Department of Chemistry\*\*. Karppinen has herself served as a visiting researcher in Tokyo. Japan is one of the leading countries in materials research and the contacts Professor Karppinen established while in Tokyo have been very important for her career.

The recruitment of international researchers is a key aspect of the development of research and education at Aalto. FiDiPro is one significant tool in the effort to promote the internationalisation of the university and it helps create long-term, structural research cooperation.

*\*Since 2011, the BIT Research Centre is part of the School of Science.*

*\*\*Since 2011, the Department is part of the School of Chemical Technology.*

*FiDiPro Professor Stefan Winter is an internationally renowned researcher of the modern wood construction technologies.*





## Financial independence brings freedom and responsibility

The assets and liabilities of the three predecessor universities were transferred to the new, foundation-based Aalto University, in addition to which Aalto assumed control of the majority of the premises it utilises. The fusion aimed for corresponding benefits as are sought with mergers in the corporate world. Unification provides opportunities for substantial synergy benefits and the merged assets will introduce fresh flexibility to the finances of the new university.

A foundation-based university is itself responsible for its assets, liabilities and cash flow. This gives the university more freedom to allocate revenues according to its chosen strategy and provides it with greater incentive to enhance efficiency because this boosts the resources available for

its research and teaching activities. This calls for strong competence in financial affairs. Aalto's Financial Services unit is responsible for planning and monitoring the university's finances as well as for the management of its investment assets.

The most significant reform implemented during the first year of operations was the introduction of controller support to the schools and the departments. Controllers are familiar from the corporate sector and it is their job to facilitate the decision-making of the university's academic leaders by providing them with more information on financial facts and constraints. Another important achievement was the defining of an investment-activity strategy for the university and the commencement of actual investment activities.

International competition is intensifying and Finnish universities must continue their efficiency-enhancing efforts. Developing support processes and sharing them between different universities will help allocate more resources towards core functions. Aalto University can avail of the assistance of a financial services centre, which was formed even before the merger and handles the bookkeeping of Aalto and other universities. The pooling of resources enables to produce services with maximal professionalism and cost-effectiveness.

## Investment activities promoting world-class research and education

Universities are among the world's oldest institutions and their activities are exceptionally long-term in nature. Accordingly, their investment philosophy, goals and decisions differ from those of other institutional investors.

The purpose of Aalto University's investment activities is to provide additional funding for high-standard education and research. Investment returns promote the independence of the university's decision-making and enable it to steer resources into strategic focal areas. Financial independence provides greater freedom to focus on long-term objectives, i.e. the creation and dissemination of fresh knowledge.

A key consideration in the employment of Aalto's substantial capital resources is the safeguarding of the operating prerequisites of future generations as well. A core issue determining the success of asset management is how capital growth is balanced with the disposal of returns.

The Aalto University Board uses the endowment strategy to define the principles, goals, roles and responsibilities of the university's investment activities as well as to determine the annual allocation of funds between different investment classes. The realisation of investments is the responsibility of the Director of Finance. An advisory investment committee consisting of outside experts also provides assistance in asset management.

The majority of Aalto University's investment assets consists of private donations collected in

2008-11 as well as a matching capitalization sum paid by the Finnish State. At the close of 2010, the market capitalisation of Aalto University's investment assets stood at about €470 million. The real estate holdings of the university consortium are not counted as investment assets.

As required under the Foundations Act, the university's funds are invested safely and in a manner that generates returns. Investments are diversified into different asset classes and geographical areas. Long-term thinking, risk management and social responsibility are emphasised in investment activities. The primary goal of the first few years is to safeguard the investment capital. All of the asset managers used by Aalto University endorse the UN Principles of Responsible Investing.

The intention is not to use the returns generated by investment activities during the first few years. Instead, the aim is to increase capital, as the costs of the university's strategic investments, especially the tenure track programme, will grow substantially in the coming years. The goal is that, in future, investment returns would cover 6-8% of the university's operating budget of some €400 million.

The building of Aalto University's investment portfolio commenced in spring 2010. A tendering process was organised to choose three asset managers to handle investments during the start-up phase. In June-December, the return on invested assets was 3.1%, while the annual rate of return

was 2.1%. The university's stock investments generated a return of 12% in June-December, while bond investments returned 2%.

At the end of 2010, some 90% of the university's investment assets were held in bonds and about 10% in shares. During the year, high-credit-rating corporate bonds and short-term bonds were favoured in the bond investment class. In coming years, the weight of the share class will be raised in the investment portfolio.

Aalto University's investment assets are expected to increase to some €750 million when the ongoing fundraising campaign concludes by the end of 2011. The target long-term rate of return has been set at 5.9% from 2015 onwards.

### Endowment universities around the world

Many of the world's top universities can avail of substantial investment assets and the returns these generate in the funding of teaching and research activities. Yale and Harvard, for example, covered well over a third of their operating costs with the returns generated by investment activities. The endowments of the world's wealthiest universities are very substantial: the Harvard endowment, for example, was valued at €23 billion in June 2010.

### The members of the Aalto University investment committee:

SIRKKA HÄMÄLÄINEN-LINDFORS (CHAIR)

TIMO LÖYTTYNIEMI

TIMO RITAKALLIO

MAGNUS SJÖBLOM



## Functional infrastructure enables better results

The numerous infrastructure projects ongoing at Aalto University are creating improved conditions for research, teaching and social interaction. When infrastructure works well, students and staff members can safely concentrate on their actual duties.

Aalto's IT services are a central sub-segment of infrastructure. IT services are presently undergoing a major transition that has the aim of establishing an increasingly user-oriented modern service organisation. In 2010, the design of shared university-level systems and information networks was the focus of special attention; one concrete manifestation of this work was the allocation of an e-mail address with the aalto.fi suffix to all Aalto University students and staff members.

"The focal point in IT will shift from the running of administration services and routines towards a clearer emphasis on providing support to research and teaching. Dedicated customer managers have already been appointed for the different sectors: a different kind of competence is required for teaching-oriented systems than for solutions that provide support for research, for example," says Vice President Jorma Kyyrä, who is in charge of infrastructure issues at Aalto University.

Among other things, IT enables the establishment of shared platforms that provide effective support for learning and facilitate smooth exchanges of information between teachers and students. Correspondingly, dedicated cooperation platforms, which maximise the user-friendliness of aspects like user administration and data security, can be established for major international projects.

A decision was taken in 2010 to provide funding for three substantial research and education infrastructure procurements. Different units received five million euros in total to make these procurements. Recipients included the Low Temperature Laboratory as well as the School of Art and Design's Media Centre Lume.

The findings of Aalto's research assessment exercise influenced funding decisions. The areas of emphasis identified in this exercise will continue to attract infrastructure funding in the coming years as well.

At the turn of the year, the Academy of Finland also granted four million euros in infrastructure funding for Aalto University's research activities. In particular, this funding targeted research areas that are of strategic importance for Aalto.

The library of Aalto University was reorganised in 2010 to provide support for cooperation

between different fields. The idea is that all of the library's three locations will provide services to students and staff members of all Aalto schools as well as to other users.

The library also supports the monitoring and indexing of scientific indicators such as publication and citation amounts. In addition, the library will play an important role both in the campus solution as well as in the design of a new learning centre, the building of which is included in the strategy of Aalto University.

The campus solution has formed one of the major themes in Aalto's first year of operation. The initial phase of its planning process involved the organisation of open campus workshops that aimed to establish parameters for future learning environments.

"Contents formed the point of departure in our approach to the campus issue. We wanted the people of Aalto to provide views on what kinds of environments would best realise the university's strategy. The location of the campus was not a substantial question in this phase – the main focus was on facilities and environments that support learning and research. These discussions turned out to be extremely fruitful."



## Aalto community involved in campus planning

A decision-in-principle regarding the Aalto University campus will be made in the summer of 2011. The preparations for the decision started one year ago with a web-based discussion probing into the views and ideas of the Aalto community on the facilities and operation environment of the future. More than 2,300 people, consisting of Aalto community members, partners and alumni, contributed to the discussion.

The online discussions pointed out clearly that it is not the premises but the people that make a campus. A campus is, above all, a community. It should be welcoming and meaningful, and it needs social innovation. Open access to facilities and user-centered planning were among the desired qualities of the new premises. The campus



brings together different people and enables encounters that generate something new.

The online discussion served as the basis for three campus workshops organised in autumn 2010 on learning environments and different campus options.

Based on this preparatory work, President Tuula Teeri made a preliminary proposal on the gradual establishment of a single principal campus for Aalto University. The discussion continued during spring 2011 in the form of, for instance, four themed working groups. The Aalto University board will make a decision-in-principle on the matter in June 2011.

*The university management took a guided tour around the Aalto campuses.  
Photo taken at the School of Chemical Technology.*

## Aalto community in motion

### A flying start for new students

The first academic year for Aalto University freshmen kicked off with events organised as part of the orientation week in August-September.

The week climaxed with the Aalto First Year Experience event, which spanned all three Aalto campuses. Its purpose was to give new student an idea of what sort of identities, entities, opportunities and people make up the university.



### UniSport provides sports centres at campuses

Aalto University and the University of Helsinki are merging their exercise services. The two will set up a joint unit called UniSport, which will provide students and staff with basic sports and exercise services from September 2011 onwards. UniSport will run sports centres at the different campuses of the two universities.

As required under government exercise policy guidelines, the two universities are engaging in this cooperation to promote young people's well-being through sports and exercise. The aim is to offer university students and staff access to a diverse network of sports and exercise venues close to their homes, workplaces or schools.



## Fundraising targets strategic partnerships

Aalto University's fundraising activities in 2010 focused on the raising of endowment capital. Once the endowment capital has been collected, fundraising will focus more clearly on the building of different cooperation forms and partnerships.

The goal is to collect €200 million for the endowment. As the State is committed to investing 2,5 times the collected sum, the endowment would then amount to €700 million in total. Fundraising has involved a lot of hard sales work. Aalto representatives have met with a large number of people from companies and various foundations as well as with private individuals. In the early part of 2011, over a hundred corporate donors had been won over, with 30 of these belonging to the major donor category.

Major donors also make the most likely long-term partners. The university's goal for the future is to form strategic partnerships with 20-30 corporations. Aalto is currently designing models for partnerships and other forms of cooperation. These will help establish fruitful and close interaction relationships with different actors of society – a goal that has been included in the strategy of Aalto University.

It is not possible to earmark funds that are donated to the endowment capital. In future, donations can be steered towards specific targets, such as student grants, support for foreign exchange programmes or infrastructure projects. The planned learning centre, which will present the results of Aalto's research to the general public in a concrete, interesting and practical manner, provides a good example of this.

### Alumni provide a wealth of potential

The great majority of Aalto's cooperation with the corporate sector relates to research projects and the development of innovations. Projects associated with recruitment and employer image in a more general sense also play an important role. Aalto's extensive networks are of great significance in this. In addition to our students, employers take a keen interest in Aalto alumni because a large number of the top achievers of Finnish business and industry have graduated from one of our schools.

Alumni have also been a significant target group for fundraising. A unique demonstration of the student body's commitment to Aalto's future and the raising of its endowment capital has been provided by the efforts of the Aalto Entrepreneurship Society, a student-established body that promotes growth-oriented business start-ups, which has been contacting alumni in association with the fundraising drive.

Some substantial donations have been received from alumni. Soliciting donations from alumni also establishes a large number of fresh contacts for the Aalto community, creating potential future benefits. The aim is that the number of registered alumni increases from the present 25,000 to 40,000.



*Elisa Oyj Ltd donated 500,000 euros to the Aalto University's endowment capital. The contract was signed by President Tuula Teeri and the company's CEO Veli-Matti Mattila. Photo: Janne Lehtinen.*

### Aalto Fundraising awarded as Best Marketing Achievement of the Year

The Aalto University fundraising campaign was awarded the prize for Best Marketing Achievement of the Year 2010 by MARK the Finnish Marketing Association and a professional marketing magazine *Markkinointi ja Mainonta*.

The prize award decision stated that the goal for the Aalto fundraising campaign was set extremely high and the results were very impressive. The campaign has been implemented in an admirably consistent manner and the campaign messages have been clear and uniform.

"The fundraising campaign exemplifies the same positive drive which has been characteristic of the entire launch of Aalto University," the decision praises.

## Major corporations donating millions

Aalto University received several donations of a million euros or more from major Finnish companies and industrial federations in 2010.

The dairy products company Valio, for example, donated three million euros to the Aalto University endowment. The company and Aalto also started a cooperation project, which has the aim of elevating Finnish marketing competence towards the top of the world. Valio and Aalto intend to focus especially on the development of consumer needs research and the measuring of marketing effectiveness.

In practice, cooperation is realised through seminars and independent projects as well as by providing students with the possibility to conduct practical work at Valio. Traditionally, Valio has

cooperated with the scientific community in the fields of biotechnology, nutrition science and milk technology.

Nokia has donated six million euros to Aalto University. Nokia says that it wants to participate in the fostering and renewal of Finland's competence capital, which has contributed substantially to the mobile phone maker's competitiveness. Nokia believes its donation will help strengthen Aalto's teaching, research standards and international competitiveness as well as promote the birth of prosperity-creating innovations.

Aalto University and Nokia have been engaged in cooperation for quite some time, as research into wireless technologies is one of Aalto's strong points. One tangible example of this expertise

is the ICT unit of the European Innovation and Technology Institute that commenced operations in Otaniemi at the beginning of 2010. The unit combines industry research, education and innovation activity into a seamless totality.

The forest industry donated four million euros. The forest-based sector thinks that it is important for Aalto to elevate its research and education to the top of the world so that it can provide better support for the renewal of the forest industry. Aalto's research activities already make use of multi-disciplinary expertise in, among other things, questions related to the sustainable utilisation of energy and natural resources.

### Aalto interests successful entrepreneurs

Aalto University has received a high number of donations from individual donors. In 2010, the largest individual donation, worth 1.5 million euros, was made by Anja and Jalo Paananen.

Jalo Paananen is member of the board in Peikko Group, a company founded by him. Paananen has

worked nearly 50 years as an entrepreneur. His ideas on leadership and the development of company operations are very similar to the strategic goals of Aalto University.

"It is always worth trying, if you have motivation and faith in your idea. You should not accept conventional ways of thinking," says Paananen.



*Photo on the right page: The major donators gathered to the President's Circle occasion in the High Voltage Laboratory in Otaniemi. The atmosphere was colorized with the student works superimposed on the screen. Aki-Pekka Sinikoski's photos on show.*





## Mentoring provides a connection with the university

Mentoring establishes personal-level interaction relationships between the university and the corporate world. The mentoring relationship between Sanja Aimola (on the left), a consultant with Mercuri Urval and an alumna of Aalto University, and recent Aalto graduate Mari Heikkilä (on the right) provides an excellent example of this.

A successful mentoring relationship is borne out of a shared desire for both parties to broaden their thinking. The final nudge for Aimola's participation came from a message about the new Aalto University School of Economics mentoring programme that was communicated via the alumni network.

"I'd been working as a consultant for three years and wanted to develop myself professionally. I'm interested in coaching, and mentoring sits well with that field of activity. I also wanted to spar a graduating student in the crucial early stages of career planning," Aimola says.

"I wanted to exchange ideas and hear what a more experienced person thought about graduation and job seeking," Heikkilä says of her reasons for applying to the mentoring programme.

The mentoring relationship between Aimola and Heikkilä commenced in autumn 2009 and continued through the academic year. The two have remained in contact also after the official programme concluded.

"At first, we talked about job hunting and considered the direction of Mari's career. She found work very quickly, and this naturally broadened the scope of our discussions," Aimola says.

"We talked about issues related to starting at a new workplace and also discussed my thesis work a lot," Heikkilä says.

The themes of discussion evolved quite naturally, with chance also contributing on occasion. One time when Aimola was unable to find a babysitter, they arranged to meet at children's adventure park HopLop. The discussion then drifted towards reconciling career and family life.

### Training for coaching

Heikkilä had the opportunity to participate in Mercuri Urval's aptitude evaluations right at the start of their relationship. "It was valuable for me to get assessed without the pressure felt by actual job seekers. It also familiarised me with the techniques and business of recruitment consultants."

"The mentoring relationship was just like I had hoped for: open, conversational and confidential. It boosted my confidence and furnished me with fresh ideas, which helped me a great deal during my graduation phase."

Aimola is likewise satisfied with the benefits she gained from mentoring.

"Mentoring helped me take a step forward in my own professional development. It equipped me with fresh potential to work in the field of coaching, for example. Fundamentally, the two involve the same issues: debating and asking good questions."



# Highlights of the year 2010



## JANUARY University inauguration

Aalto University celebrated its launch at Helsinki's Finlandia Hall on 8 January 2010. Speakers at the event included President of the Republic Tarja Halonen, Prime Minister Matti Vanhanen, Aalto President Tuula Teeri and Jussi Valtonen, Chairman of the Aalto University Student Union.

"Aalto University has been granted many liberties, but also a heavy obligation to build a world-class university in Finland. We are basing our efforts on Finnish strengths – hard work and determination – or Finnish guts in short," Aalto President Tuula Teeri noted in her gala speech.



## MARCH Preschoolers attend art education event

Dean Helena Hyvönen of the School of Art and Design celebrated her 60th birthday by inviting a group of Helsinki preschoolers to an art education event. The children participated in an vividly reciprocal event that incorporated impressive

presentation techniques. The visit concluded with the serving of cocktail-party-style savoury treats. The invitation received an enthusiastic welcome and more than 300 young visitors in two days came to pay their respects to Dean Hyvönen.

## APRIL Eight Academy Research Fellows appointed from Aalto

The Academy of Finland Research Council for Natural Sciences and Engineering appointed 19 new Academy Research Fellows. Eight Aalto University researchers, representing a comprehensive range of different scientific and technological fields, were appointed as new Academy Research Fellows.

## APRIL Record number of applications

A record number of prospective students, more than 15,400, applied for a place at Aalto University's three schools in 2010. The popularity of the School of Art and Design increased the most, with applications up 31%.

## JUNE Aalto University and Microsoft to start research cooperation

Cooperation between Aalto and Microsoft focused on two research projects in 2010. The Creating new search concepts in a home environment and Denial-of-service attack-resistant Internet services projects are being conducted by Aalto University's Department of Computer Science and Engineering, the Department of Design and the Helsinki Institute of Information Technology (HIIT), a joint research institute of Aalto University and the University of Helsinki.



## SEPTEMBER The first launch of an academic year at Aalto University

Aalto University celebrated its first opening of an academic year on 1 September 2010. The milestone was marked with several events held concurrently at different Aalto campuses. The opening gala was held at the School of Economics in Töölö and it attracted about one thousand students and staff members as well as other friends of the university. In addition, students and staff members at other Aalto University campuses throughout Finland were able to watch

the opening ceremony via live broadcast. President Teeri's speech underlined the important role students play at Aalto. "The university must genuinely care for its students and pay close attention to developing learning methods; to support this work we are currently initiating a full-scale assessment of the university's teaching activities."



## SEPTEMBER Töölö Towers to provide visitor accommodation

The Töölö Towers residential facility opened in September and will now ease the problem of providing accommodation for overseas researchers. The Töölö Towers apartments are shared by Aalto University and the University of Helsinki, and can be rented by international guests as well as researchers who are moving into Finland and need temporary housing while they settle in.



## OCTOBER Aalto University's first doctorate conferral ceremony

The Aalto University School of Science and Technology held a ceremonial conferment of doctoral degrees on 1 October 2010. The conferral was the first for the new Aalto University and the 21st in the field of technology. 365 Doctor of Science in Technology and Doctor of Philosophy degrees were conferred at the event.



## October School of Economics alumni celebrate

The Aalto University School of Economics celebrates its 100th jubilee year as an institute of higher learning in 2011. The celebrations kicked off already on 23 October 2010, when almost 1,400 former students gathered for an alumni gala. A number of graduates from different decades performed on stage, recounting some of their most legendary memories from their time at the School.



## OCTOBER Design students hit the Hirameki Design x Finland event in Tokyo

At the end of October, Aalto University design students headed for Tokyo Design Week to participate in the Hirameki Design x Finland event, which showcased Finnish design to a Japanese audience more

extensively than ever before. The design students worked for 40 hours to create the exhibition 40 Hours, in addition to which they produced the Näytös 10 fashion show.

# Key figures 2010

Aalto University

**Personnel (FTE)** 4,684

of which professors 339

Proportion of international professors and postdocs 7.5 %

## Students (number)

Undergraduate students 16,057

Postgraduate students 3,459

Proportion of international students 8.4 %

## Awarded degrees

Bachelors' 1,146

Masters' 2,312

Doctorates 184

Average credit units per student 35.7

MBA's 434, of which  
280 abroad

## Appointments and grant funding

Academy Professors 4

ERC Grants 7

FiDiPro 11

## Publications

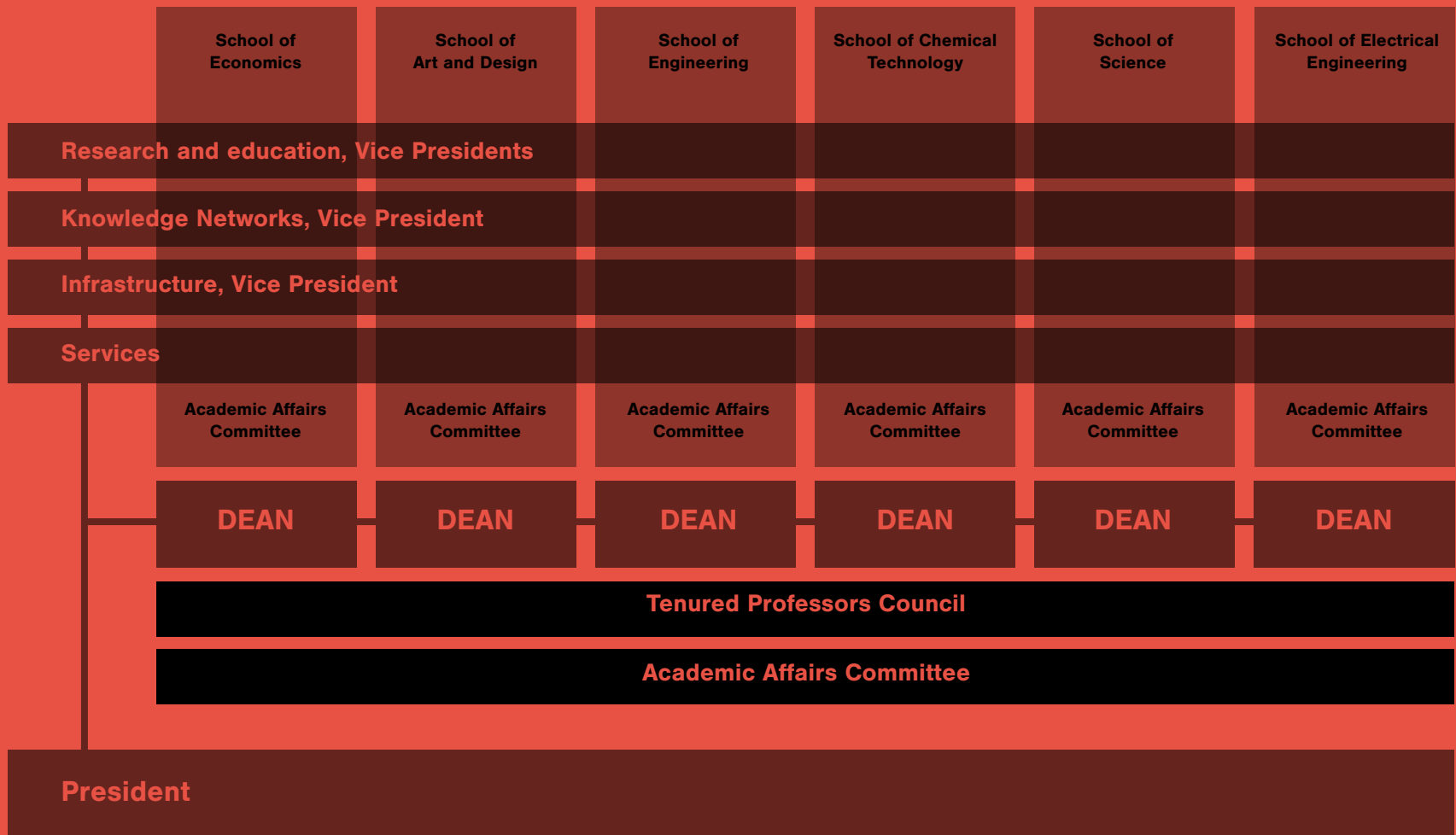
International (peer review) 2,499

International artistic publications 68

**Total funding (M€)** 400

Proportion of total grant income 28 %

Competitive research funding (M€)  
(SA, EU-FP7, ERC) 37



## Board 2010 *All members of the board have a doctorate.*

### MATTI ALAHUHTA (CHAIR)

*CEO, Kone Corporation*

### ANNE BRUNILA

*Executive Vice President, Corporate Relations and Sustainability, Fortum Corporation*

### MARJA MAKAROW

*Professor, CEO, European Science Foundation*

### ROBERT A. BROWN

*President, Boston University*

### ANNA VALTONEN

*President, Umeå University, Umeå Institute of Design*

### SAKU MANTERE

*Professor, Hanken School of Economics*

### BENGT HOLMSTRÖM

*Professor, MIT*

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