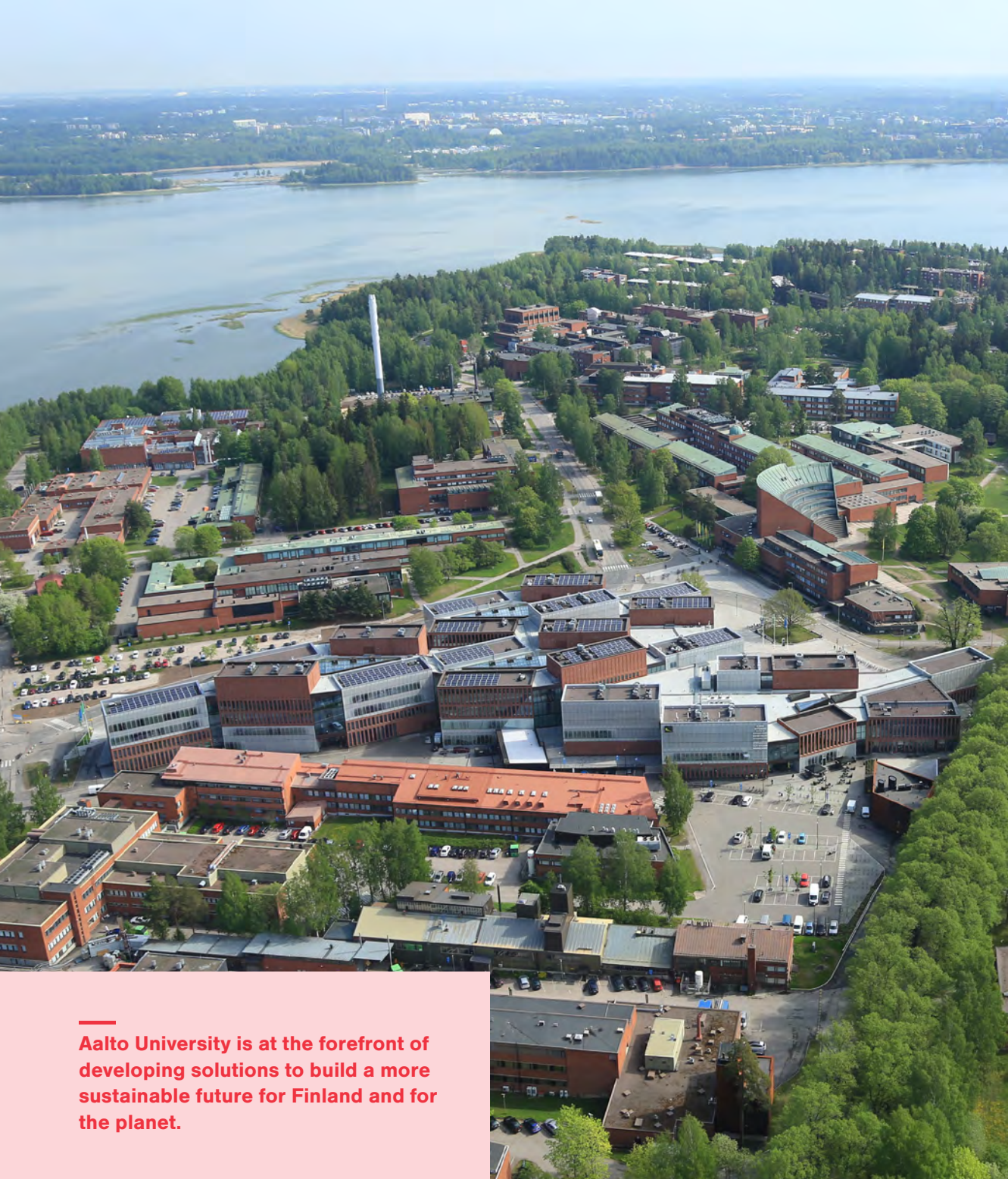




**Review for
donors
2021**



Aalto University



Aalto University is at the forefront of developing solutions to build a more sustainable future for Finland and for the planet.

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Dear Donor,



Ilkka Niemelä
President
of Aalto
University

THANK YOU for building the future with us!

We are living in the midst of considerable forces for change. The challenges of sustainable development require immediate action, while technological disruptions are affecting companies, working life and societies at a fundamental level. The landscape of higher education is changing too, as demand and competition increase, digitalisation becomes more deeply entrenched and university funding is under increasing pressure. The coronavirus pandemic is also changing the operational environment and accelerating the pace of change.

Research and education now need all the support they can get, so making a donation to a university is an investment in a better world.

At Aalto, we are helping to build a sustainable future for Finland and for all humanity. This means renewing society with research-based knowledge, creativity and entrepreneurial thinking. We are engaged in high-quality research aimed at achieving breakthroughs in and across science, art, technology, and business. We are developing strong competence clusters in the key areas of our research, and we are bringing together versatile skills and knowledge to help solve some of the greatest challenges the world faces.

We inspire and support the game changers of tomorrow on their learning paths. In part, this means taking on greater societal responsibility in degree education and lifewide learning in and across our key areas.

The coronavirus pandemic has underscored the flexibility of our community when urgent action is required. People at Aalto have shown a strong desire to help and search for solutions to new and difficult problems. Many research and development projects are now underway that were launched quickly to help solve the challenges brought on by the pandemic.

An internationally prominent ecosystem that encourages innovations, creativity and entrepreneurship has taken shape around us. This is an environment where new future experts and game changers grow, and where innovations are turning into actions, services, and products that strengthen society and the economy.

In 2020, Aalto University was the fourth-largest source of patents in Finland, and in 2019 the Aalto Startup Center was placed among the world's top five university-based business accelerators. Each year around 100 new companies emerge from the ecosystem formed around the university.

Our campus is the beating heart of the Aalto community, where we aim to offer a sustainable and inspiring environment for encounters and collaboration. I hope that soon I will be able to extend a warm welcome to our donors to visit our campus again.

As a donor, you have an important role as a member of our community and as an enabler of our operations. A very warm thank you for your participation and contributions!

Creative studies programmes at Aalto University open doors for future creators. Annaleena Hakola manages a successful design company. Kirsikka Vaajakallio develops the operations of companies around the world. Tuukka Vartiainen observes the internationalisation of Finnish film production from a unique perspective.

Bold reformers

ANNALEENA HAKOLA spent her childhood in the town of Jurva, at the heart of Finland's South Ostrobothnia region. She lived next to the Hakola Huonekalu furniture factory, founded by her grandfather in 1963.

'The whole

family grew into entrepreneurship and my father continued to manage the company,' says Hakola. 'But I followed my own path, studying graphic, furniture, interior and textile design.'

After completing her upper secondary school studies in visual arts, Hakola studied at the University of Art and Design Helsinki – now part of Aalto University.

While Hakola was working on her Master's studies, the family business was under pressure. It was 2013, and the outlook for manual production of furniture in Finland was bleak. At the same time, Hakola was learning to question things in Aalto's IDBM (International Design Business Management) minor subject programme.

'It was at this time that the idea of continuing the family business was born,' she says. 'I decided to do things completely differently from the way things were traditionally done in the sector. I realised that I could reinvent the company by applying everything I had learned at Aalto University.'

Under Hakola's management, the company completely transformed its business model and established an online shop to sell furniture directly to consumers. The company kept its existing name and continued production in Jurva.

'My studies at Aalto have been very useful in my line of work. The excellent teachers brought

international-level knowledge to the courses, which I completely absorbed. I keep returning to the notes I made during my studies,' she says.

Hakola won the EY Family Entrepreneur of the Year award in 2020, and has now grown the small family business into a successful design company that employs almost 40 people.

'We want to be pioneers in the field and show that good design, responsibility and profitability go hand in hand. The local dimension is in our family DNA. We are also entering the international market, but sustainability is our first priority,' says Hakola.

World-class service design

Writing her Master's thesis at Aalto University's Department of Design opened **Kirsikka Vaajakallio's** eyes to how much service design can benefit different organisations.

'I studied the use of service design in the development of the personnel experience, and applied design methods to promote the well-being of Palmia's employees,' says Vaajakallio, Lead Service Designer and a partner at service-design agency Hellon.

In her doctoral dissertation, Vaajakallio familiarised herself with the use of design games in creative co-design. She was one of the first people in the world to complete a doctorate in service design, and the 100th doctoral candidate at the Aalto University School of Art and Design.

'My studies opened up excellent opportunities for building a career,' she says. 'In addition to my doctoral degree, I gained practical experience and created strong networks with public and private companies that I worked closely with while completing my doctoral dissertation.'

Vaajakallio makes use of the results of her doctorate on a daily basis in her work at Hellon. The company has approximately 40 employees in Helsinki and London. A large number of Aalto



Annaleena Hakola



Kirsikka Vaajakallio



Tuukka Vartiainen

University graduates in design, engineering and business are also involved.

‘The use of gamification in areas such as organisational change is our core competence and distinguishes us from our competitors. The themes of my Master’s thesis are still highly topical today,’ she says.

Making full use of design in organisational development, Hellon is a pioneer in the field. The award-winning company has customers around the world.

‘It’s easy to work in different teams in any sector, as we were already accustomed to the multidisciplinary approach and internationalisation at the university,’ she says. ‘Seeing the big picture – as well as the hunger and enthusiasm for learning – also stem from my experiences at Aalto.’

Finding a place in film production

Film is **Tuukka Vartiainen**’s passion, so it was a natural choice for him to choose production studies at the Aalto Department of Film, Television and Scenography (ELO). It’s the only university-level department in Finland offering education in film and scenography.

‘The teachers are some of the best film professionals in the country, and you get to know a large group of amazing people who all share the same goal,’ says Vartiainen. ‘Doing projects partly in your spare time is an essential component of the programme, and assignments are structured so that you can practise failure in a safe way.’

The film industry is currently undergoing a transformation. Viewing is moving from cinemas to homes and mobile devices, as streaming services provide a continuous flow of new films and TV shows. There is plenty of work for experts in the field, with large international productions filmed in Finland, and Finnish productions being filmed abroad.

‘It is the job of film artists to turn passive dreams into an active passion. Art reminds us of the fact that life can be creative,’ says Vartiainen.



Celebrate the 150-year-old School of Arts, Design and Architecture with us!

Our academic programmes for creative professions – which began at the Sculpture School in 1871 – have changed shape over the decades. But our studies in these fields have always been geared towards pioneering societal change. This year, Aalto University’s art and design education ranked 6th in the QS World University Rankings.

Take part to ensure that Aalto University’s art and design education stays among the best in the world! By donating, you will help to:

▲ Develop new ways of thinking and solutions that enable sustainable development.

● Educate open-minded problem solvers.

■ Create an understanding that will enable companies and decision-makers to make sustainable and ethical choices.

School of Business 110 years

THE AALTO UNIVERSITY School of Business marked its 110th anniversary in January. Although the name and address of the school have both changed over the years, its goal has remained the same: to offer high-quality education and solid research data that helps to develop society.

The School of Business is now one of Europe's leading business schools and one of the most desirable places to study in Finland.

'There is great demand in society for studies in business and economics,' says **Timo Korkeamäki**, Dean of the School of Business. 'Our goal is to grow significantly in the 2020s so that we can respond to the demand and to society's need for more people with academic degrees.'

To mark the anniversary year, the School of Business has started a campaign for donations to help ensure new generations of business students can be educated without compromising on the quality of teaching and research. Launched in January, the campaign is off to a good start and has already raised donations from many donors and alumni.

'The School of Business has given me so much: education, joy, friends, attitude – and even a wife. A donation is a self-evident way to give something back,' says **Mika Suortti**, a donor and a School of Business alumnus in the class of 1984. Other greetings from donors and alumni can be read on the School of Business website.

Donations are a long tradition at the School of Business. The construction of the former main building on Runeberginkatu was also financed through donated funds.



'I would like to warmly thank all donors who have supported our school this year and in the past decades,' says Korkeamäki. 'It has been great to see how strong and widespread the support of the community is.'

The fundraising campaign will continue all year, so we encourage you to show support for the 110-year-old School of Business and the new generations of business students to come.

A!

**Aalto University
School of Business**

110



‘My father studied at the School of Business and he and my mother met at the Student Union’s song evening in the late 1960s. Without the School of Business, I would not exist. My studies and the student life gave me a magnificent grounding for my life, numerous friends (and several godchildren), and lots of memories. Thank you and congratulations to the School of Business!’

Salla Vainio
School of Business alumna 1988

**‘1911–2021–2130
History is seen by all,
the history of the future,
the best ideas and actions,
this is what we do,
on this day,
CONGRATULATIONS!’**

Marko Parkkinen
*entrepreneur, thinker,
and doer*

‘I would like to express my gratitude to the School of Business. It has given me an excellent foundation for my working life and opportunities for a great career that keeps moving forward to the top of Finnish commerce and industry. Without the School of Business this would not have been possible. Thank you!’

Mikko Nieminen
CEO, School of Business alumnus, class of 1993

Science and art never stop

Leave a meaningful legacy for future generations by gifting Aalto University in your will. Your endowment will support high-quality research and help to achieve breakthroughs in science, art, technology, economics and at their intersections. You can endow the field of your choice.

For more information, please contact:

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From idea to innovation and commercialisation

Aalto University is a multidisciplinary community of game changers creating breakthrough research innovations. Aalto supports researchers in becoming successful entrepreneurs in many different fields.

AALTO UNIVERSITY has an innovation ecosystem unlike anywhere else in the world, with a wide range of support mechanisms that help to transform research ideas into successful businesses. In 2019, the Aalto Startup Center was named as one of the top five university-based business accelerators in the world by UBI Global. Aalto also offers patenting services that allow innovations to be commercialised by companies so they can be used in society.

‘Aalto University carries out leading research that produces innovations aimed at revolutionising many different fields,’ says **Janne Laine**, Vice President of Innovation at Aalto University. ‘We have an internationally distinguished ecosystem that encourages entrepreneurship and is a driving force in the establishment of some one hundred new companies each year.’

Aalto Innovation Services is an organisation that helps researchers to turn inventions into commercially-viable products and services. The organisation also provides support for protecting patents and transferring technology to startup companies or larger companies. The Aalto Startup Center’s accelerator strengthens the commercial conditions of emerging companies and helps them to connect with funding entities.

The number of patent applications from Aalto has increased five-fold compared to 2012. Last

year, Aalto was Finland’s fourth-largest patent applicant in terms of the number of applications submitted. Patent success stories in recent years include the Ioncell technology, which has addressed sustainability challenges in the global textile industry, and the technology linked to the construction of Finland’s first quantum computer.

The BATCircle consortium led by Aalto University aims to increase significantly the recycling of battery materials.



**Sakari
Nikinmaa**

A ground-breaking initiative for dental hygiene

In 2018, Koite Health was established at Aalto University. The company is an example of how determined work can turn a solid research idea into a commercial product.

‘Our dental hygiene product effectively eliminates the bacteria that cause cavities and gingivitis. The product is based on an antibacterial method in which the bacteria-killing effect of mouthwash is activated by light,’ explains **Sakari Nikinmaa**, CEO of Koite Health.

It all started in 2016 when Nikinmaa, then an Aalto researcher in bioinformation technology, and **Tommi Pätälä**, a heart surgeon at Helsinki University Hospital, met at the Biodesign Finland project. A year later, the pair were part of a multi-disciplinary Research to Business project funded by Business Finland and launched at Aalto.

‘Under the scope of the project, we conducted bacterial tests and were able to experiment with completely new things. The research produced good operating models that allowed our company to continue with product development,’ says Nikinmaa.

In 2020, Koite Health launched the Lumoral® light and Lumorinse® mouthwash tablets. The company is now also developing a product for treating severe gingivitis. The market is large, with more than 10 percent of people suffering from the condition. Severe gingivitis also raises the risk contracting more than 200 different chronic diseases.

‘This year we will be expanding to the other Nordic countries and next year to the rest of Europe. Our aim is to gain a foothold in the US market too. We are very confident, as we have a solution to one of the biggest infection issues in the world,’ Nikinmaa explains.

More efficient greenhouse cultivation

Pasi Herranen, a student of mechanical engineering at Aalto University, wrote his Master’s thesis on the strength properties of plywood. In 2014, he came up with the idea of a plywood element that is extremely energy efficient and completely mould free. The trick is a vacuum created inside a birch plywood element (VIS, Vacuum Insulation System). The product idea was refined and when two business students joined Herranen, the partners decided to aim for the greenhouse market.

‘In 2018, the development project was transferred to Aalto, which made it possible to launch the Research to Business project funded by Business Finland. We were then able to scale the VIS technology on an industrial level,’ says Herranen.

In summer 2021, the group will establish a company aimed at revolutionising the entire greenhouse vertical-cultivation sector. Their innovation is a room built from VIS elements and protected from sunlight, making it possible to optimise growth conditions to save energy, water, soil and nutrients. By creating optimal environmental conditions all year round, crop yields can be increased.

‘The VIS technology will make it possible to build extensive local food production plants in large cities. Whereas vertical cultivation halls are now built from reinforced concrete and sandwich elements, VIS is a low-emission wood product,’ says Herranen.

Aalto has assisted in applying for patent protection for the VIS technology in Europe, the United States, Canada, China, Japan, Australia and Brazil.

‘The cross-disciplinary atmosphere in Otaniemi has enabled the encounters that startups need. Now we can set off to do great things aimed at changing the world,’ he says.



**Pasi
Herranen**



**Mari
Lundström**

Finland's five billion euro battery markets

Finland is well placed to become a major international player in the battery industry. The EU has predicted that the value of the European battery market could reach EUR 250 billion by 2025. The aim of the BATCircle consortium, headed by Aalto University, is to create a battery market in Finland valued at a minimum of EUR 5 billion.

The BATCircle project has strengthened cooperation in the European battery industry and Finland's position in the circular economy for batteries – a market with high value potential. A total of 23 companies, four universities, two research institutes and two cities took part in the initial project, which ended in spring 2020. The aim is to continue this endeavour in the BATCircle 2.0 project.

'As part of this project, Aalto will invest in the development of battery recycling. Aalto's strong

expertise in this area stems from long industrial cooperation in the field of metallurgy,' says **Mari Lundström**, Director of the BATCircle consortium and Assistant Professor at Aalto.

A few years ago, the global recycling rate of lithium was less than five percent. The EU Battery Directive will increase the recycling rate to 35 percent in 2025 and 70 percent in 2030.

'Recycling must be both economically and environmentally viable. Research will develop metal recovery techniques and model the environmental footprint of technological innovations,' she says.

Lundström believes that the battery sector's business models will change dramatically. For example, the digitalisation and tracing of the composition of battery metals will provide opportunities for new business activities in connection with the ownership of batteries.

From bioinnovations to breakthrough solutions

Aalto University's new Bioinnovation Centre is aimed at accelerating the transition to a circular economy and bioeconomy through creating opportunities for sustainable economic growth in Finland. The Jane and Aatos Erkko Foundation granted EUR 10.5 million to Aalto University for setting up the state-of-the-art infrastructure at the cross-disciplinary learning and research centre, which will open its doors during 2021.

'The decision to support the bioinnovation centre is a new type of strategic opening for the foundation. The foundation has high expectations for the centre to achieve its goals, produce breakthrough solutions and extensively utilise research results', says **Hanna-Mari Peltomäki**, Representative of the Jane and Aatos Erkko Foundation.

'We are extremely grateful to the Jane and Aatos Erkko Foundation for the support, which will enable taking a great leap in the development of Finland's bioeconomy and circular economy expertise. The bioinnovation centre will provide Finland and the world with the most recent research knowledge in its field, top-class experts and product concepts that combine high-quality design and technology in a sustainable manner. By awarding such a significant grant, the foundation is making a bold and visionary investment in sustainable development. We highly appreciate this', says **Ilkka Niemelä**, President of Aalto University.

Donated professorship strengthens Finnish ownership competence

THE OWNERSHIP PROFESSORSHIP to be established at the Aalto University School of Business will integrate ownership as a fixed part of academic research and teaching.

The professorship strengthens Finnish ownership expertise and the culture of ownership by producing high-quality research data to support societal discussion and decisions.

‘There is surprisingly little top-level research of how ownership impacts the operations and success of companies as employers, taxpayers and engines of growth,’ says **Timo Korkeamäki**, Dean of the School of Business. ‘The new professorship fills this gap and also serves as a trendsetter for research and teaching related to ownership.’

First of its kind

Having written a book on ownership, the originator of the professorship project is **Tero Luoma**. He has been working with **Lari Raitavuo**, one of the owners of Ensto Investment, to find backers for the project.

‘As we were unable to find an ownership professorship anywhere in the world, we had to create one,’ says Luoma.

‘A steering group was established to examine seven universities to find the best location for the professorship. Aalto University stood out due to its ambition, internationality and ability to integrate the professorship extensively into other teaching and research,’ he says.

The professorship has received an enthusiastic reception, with numerous foundations, companies and individuals already supporting it with donations.

‘We strongly believe that the expertise and actions of owners have an impact on the success of a company,’ says **Philip Aminoff**, Chairman of the Board at Helvar Merca, which has supported the professorship. ‘We hope that the professorship will provide a deep understanding of the role

of good and competent ownership in the national economy to the benefit of our country.’

The ownership professorship has also been opened to online donations so that anyone who wishes to support the growth of ownership expertise in Finland can do so.

‘The online donation campaign will allow both private donors and organisations to support this important project with an amount suitable for them,’ says Korkeamäki.

‘Supporting the ownership professorship reflects Finnish ownership. Anyone can support the professorship with a small sum. Together, we can achieve something big,’ says **Sari Lounasmeri**, CEO of the Finnish Foundation for Share Promotion.

Warm thank you to donors who have already supported the professorship: Aho Group, Algot, Confederation of Finnish Industries (EK), Conficap, Ensto Invest, Erkki Paasikivi foundation, Finnish Foundation for Share Promotion, Foundation for Private Entrepreneurs, Fredman Capital, Gerako, Hartwall Capital, Helvar Merca, Isodin, Jenny and Antti Wihuri Foundation, Juuri Partners, Katko, Kaleva Mutual Insurance Company, Luoma Tero, Maki.vc, Mandatum, Novamator, Oras Invest, Otava, Paananen Jalo, Planmeca, Pontos, PwC, Saastamoinen Foundation, Security Trading, Seedi, Sinituote, Stanton Chase, Taaleri, Technology Industries of Finland Centennial Foundation, Thominvest, TT Foundation, TWP Group, Varova, Yksityisyrittäjien Säätiö Foundation.

Collaboration and continuous learning

Professors of practice bring inspiration, a wealth of practical experience, and a wide network of contacts.

RISTO SARVAS educates socially aware and agile digital experts.

Anna Mikola integrates waste-water treatment into the circular economy to

create a growth platform for new innovations. Their five-year professorships have both been established with donations received by Aalto.

‘The workplace of the future needs multi-skilled people who can adapt to change and are not afraid of uncertainty,’ says Professor of Practice Risto Sarvas. He leads Aalto University’s Information Networks study module, which combines business and IT expertise with understanding of societal phenomena.

Sarvas is a respected and award-winning teacher who is continually developing new teaching methods. In the Information Manipulation course, students play the bad guys from James Bond movies and think about different ways to disrupt society using information technology.

‘We learn to better understand how to influence with information when we spend some time pretending to be the bad guys lurking online. At the end of the course, students come up with ideas for combating the villains’ evil plans,’ Sarvas says.

Sarvas opens the doors between the university and working life. Approximately 40 companies, public actors and organisations participate in the teaching. There are many forms of cooperation, ranging from practical project work to student mentoring and visitor lectures.

‘Ideas are exchanged and bounced around by all those involved,’ he says. ‘The students are the university’s treasure trove and the experts of the future. They also have a lot to offer to people who are far on in their careers. Recruitment becomes

easier too when students get to know prospective employers during these courses.’

Some courses operate with an open door policy. The course in Facilitating Change was so popular that the sign-up had to be closed once the number of workplace representatives grew to hundreds.

Learning must be maintained

In his teaching, Sarvas emphasises that entities must be understood as a whole, and that the ability to act in the midst of uncertainty is very important.

‘The future is shrouded by fog. So the ability to handle uncertainty is an important work community skill.’

It is also essential to understand how to organise and act as part of a larger group.

‘Social skills are not just the icing on top of technical engineering skills, but rather a core competency in themselves,’ says Sarvas. ‘You can’t read everything from books. You also need to get your hands dirty and work on something together with other workplace representatives.’

Learning does not end with a degree. Companies and organisations live in the midst of changes brought about by global challenges.

‘From the point of view of company competitiveness, it is essential to maintain staff competence and organise oneself around continuous learning,’ he says.

What has the professorship taught you?

‘The young people in our degree programme are just the best,’ says Sarvas. ‘It’s great that every year we get to send out into working life dozens of socially and ethically aware Bachelors and Masters of Science in Technology.’

Risto Sarvas' professorship has been established within the Department of Industrial Engineering and Management at the Aalto University School of Science. Donations for the professorship have been received from Accenture, Accountor, CapMan, The Boston Consulting Group Nordic AB, the City of Espoo, Futurice, Inventure, KPMG, Reaktor, Sofigate, and the Technology Industries of Finland Centennial Foundation.



New technologies for wastewater treatment

Sewage treatment plants are becoming versatile resource plants. Before, wastewater was just purified, but now valuable nutrients and energy are being recovered too.

‘The fight against climate change is strongly linked to the way societies handle their water. New technologies can reduce the carbon footprint of wastewater treatment and promote the circular economy. At the same time, new business activities are being created in the field,’ explains Anna Mikola, Professor of Practice for Municipal Wastewater Treatment.

‘In the research projects being carried out, even a small waterworks can effectively achieve big things when the university, companies and waterworks join forces,’ she says.

One part of Mikola’s research is the removal of contaminants such as microplastics and pharmaceuticals from wastewater.

‘In addition to harbouring antibiotic residues from the human body, wastewater also ends up containing bacteria that are resistant to antibiotics. The risks of the growth of these bacteria must be brought under control,’ says Mikola.

Improving the world

The NPHarvest process developed at Aalto produces recycled fertiliser from wastewater and



‘Risto genuinely listens to students to try and understand how they experience instruction and to develop the courses continuously. I got some very good personal support from Risto for my Bachelor’s thesis.

In his teaching, Risto utilises plenty of his knowledge about working life. Guest lecturers, project topics and course teachers have come from around the corporate world. This strengthens students’ experiences of their own identities and enhances their future employment prospects.’

*Ilona Rahnasto
Student of Information Networks*



Anna Mikola's professorship has been established within the Aalto University Water and Environmental Engineering research group at the Department of Built Environment in the School of Engineering. Donations for the professorship have been received from Helsinki Region Environmental Services HSY, the Land and Water Technology Foundation, the Development Fund of the Finnish Water Utilities Association, HS-Vesi, Vaasa Water, Mikkeli Waterworks, Lappeenranta Energy, Kuopio Water, Porvoo Water, Jyväskylä Region Treatment Plant, and Turku Region Treatment Plant.

saves both energy and natural resources. The technology has been piloted in Finland and will now be tested out in the circular economy district of Helsingborg, in Sweden.

Processes for recovering phosphorus from wastewater are also being developed in Paris, a city of over 10 million inhabitants. This Aalto-led project involves a number of companies and includes waterworks from both Finland and France.

'If Finnish companies want to succeed, it is important for them to understand the needs of other countries. This insight needs to come as early as the research stage,' says Mikola.

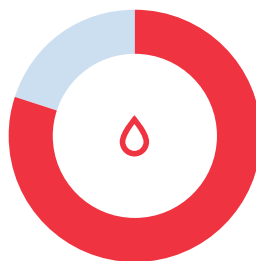
There is plenty of demand for water sector experts. Even today, almost 80 percent of the world's wastewater is discharged directly into the environment. Aalto is equipping world-class experts to combat this.

Mikola never has any second thoughts about the meaningfulness and significance of her work:

'I am in my dream profession, one where I can truly make the world a better place,' she says. 'What's more, the fact that the treatment of wastewater combines expertise from so many fields makes the work even more fascinating.'

In her teaching work, she always takes great pleasure in seeing how a student's eyes light up when they get enthusiastic about something, such as their own Master's thesis.

'Every year, I get to see freshly graduated Masters of Science in Technology setting out to continue developing their field,' she says.



Almost 80% of the world's wastewater is discharged directly into the environment.



'Anna's professorship of practice played a decisive role in my coming to Aalto as a doctoral researcher. She is a recognised figure in the field and a true professional who is endlessly interested in new trends and in developing the field. Her extensive networks provide excellent starting points for conducting meaningful research to the benefit of all parties involved in the collaboration.'

*Maria Valtari
Doctoral Student*

Aalto assists in handling the coronavirus crisis

THE DIVERSE SKILLS and knowledge at Aalto University have been needed during the coronavirus pandemic. Many significant research and development projects are underway in the search for solutions.

Aalto's first research projects to tackle the effects of the pandemic were launched around the start of the crisis in March 2020.

Assistant Professor **Ville Vuorinen**, an expert in fluid dynamics, rolled up his sleeves and on a tight schedule brought together a consortium of four research organisations that set out to study how the novel coronavirus spreads through the air. Vuorinen's research group is now developing open-source software to enable faster modelling of the movement of airborne particles among large numbers of people and in public spaces.

'People at Aalto have a clear desire to help and to search for solutions – even to problems that are difficult to solve,' says **Ossi Naukkarinen**, Aalto University's Vice President for Research. 'A rapid response to the coronavirus situation was also made possible by the Aalto Health Platform network for well-being research. It's run by **Markus Mäkelä**, who quickly helped groups of experts find each other and develop ideas for new projects.'

Towards the end of 2020, a joint Nordic project was launched in which the coronavirus situation and future epidemics are being modelled more extensively than before. In addition to studying the spread of communicable diseases, data and models can be used to compare different kinds of vaccination strategies. The project in-

cludes Aalto experts in stochastics, network science and computational physics.

Joint research by Aalto University and the Helsinki University Hospital (HUS) is being conducted to determine whether electroencephalography (EEG) can be used to predict serious breathing difficulties in coronavirus patients. A two-year project that began in January 2021 utilises machine learning in the identification of high-risk patients.

The economic crisis caused by the coronavirus pandemic requires detailed situational awareness and rapid analysis from political decision-makers and civil servants. The Helsinki Graduate School of Economics (Helsinki GSE) – formed by Aalto University, the Hanken School of Economics and the University of Helsinki – set up an economic situation room as soon as the crisis broke out. Its purpose is to produce information that supports economic decision-making. The situation room is managed by Helsinki GSE Academic Director and Aalto University Professor, **Otto Toivanen**.

Many other research projects related to the coronavirus pandemic are underway at Aalto University. For example, expertise in architecture is helping in situational planning and in managing the safe use of facilities. Other new projects are constantly being launched.

'Close-knit and continuous interaction between fundamental and applied research lie behind Aalto's coronavirus research. Both are needed amid the crisis as well,' says Naukkarinen.

Curious and daring youngsters

With unlimited curiosity you can explore, experiment, get inspired and find answers to questions like: ‘Who am I going to be when I grow up?’ Aalto University Junior offers art, technology and business experiences to all curious and daring primary, secondary and upper-secondary pupils.



Veli-Matti Ikävalko

WORKSHOPS, afternoon clubs, summer camps, researcher visits and ‘virtual help’ – Aalto University Junior is all these things and more.

Supported by donated funds, Aalto University Junior offers

exciting and enjoyable classes that bring children and young people into the realm of arts, technology and business. There is no doubt as to the impact of the activities; straight after completing a workshop the children often ask when they can come again.

‘An enthusiastic atmosphere forms in the groups as they get involved in the tasks. When children start talking, experimenting, discussing and considering solutions, we are truly at the heart of the learning process,’ says **Veli-Matti Ikävalko**, Manager of Aalto University Junior.

In March 2020, coronavirus restrictions meant that Aalto Junior had to shift to online teaching. The results have been excellent.

‘We went on to social media, where we were able to reach children and young people with science-based tasks and brainteasers,’ says Ikävalko. ‘This got quite a positive buzz going and the questions from young people came flooding



in. One particular video clocked up 100,000 views. We also offered contact teaching through virtual workshops and theme weeks.’

Despite the shift to remote teaching, some 15,000 children, young people and teachers from around Finland participated in Aalto Junior’s activities during 2020. Workshops and other events are provided in both Finnish and Swedish. Aalto Junior is also a member of the national inter-university LUMA Centre network.

Creating the spark

Aalto Junior is a way of bringing the research world and university activities into the lives of children and young people who wouldn’t otherwise have access to academic thinking. As it is free of charge, Aalto Junior is open to all.

Young people face big questions when thinking about their future and what they will do as adults. Choosing a profession is not easy.

‘We try to support young people and inform them about studies at Aalto University,’ says Ikävalko. ‘Primary schools and upper-secondary schools can book a researcher to attend one of

the students' classes to give a short science lesson.'

Aalto Junior's events fill up quickly. Cross-disciplinary activities attract and inspire both girls and boys to dig deeper into art, technology and business. During Aalto Junior's latest autumn holiday camp, primary school pupils thought about the structure of an atom, designed a logo for a space tourism company, and created animations.

Summer camps typically fill up with upper-secondary school students who get to delve into design thinking and entrepreneurship.

Aalto Junior's afternoon clubs combine science and art in a fun way, allowing the students to explore the world from a different perspective. In the Family Day workshops, for example, students can learn how electricity works, practice making biodegradable plastic, and try creating animations on an iPad.

What would you like to learn next?

Lifewide learning at university begins as a child and teenager, and then continues throughout one's life. Because the world and ways of doing things are constantly changing, it's not enough just to make do with old studies and qualifications.

Aalto University's lifewide learning path offers both courses and entire degree programmes and qualifications. We will guide you and help you recognise your learning needs to ensure that you always have the skills that set you a step ahead.

Lifewide learning is an opportunity – make the most of it!

To learn more, visit
lifewidelearning.aalto.fi/en

100,000 alumni in more than 80 countries

AALTO UNIVERSITY offers alumni diverse opportunities for lifewide learning and networking:

- ▲ Over 40 alumni associations organise activities for alumni.
- ◆ The Alumni Network Board integrates the views of the alumni into the university's long-term development, and supports the activities of alumni associations.
- ▶ Alumni agents support students and strengthen local networks around the world.
- The Career Design Lab helps to shape sustainable career paths as working life undergoes changes.
- The mentoring programme brings together Aalto alumni and current students so they can learn from one another.
- The Alumni Circle offers alumni a digital meeting place.



'Aalto University has provided a great growth platform for developing into a multidisciplinary expert. The further I have progressed in my career and the more interdisciplinary my job description has become, the more important the lessons learned at Aalto have become. The ability to hold discussions and work with professionals in different fields has been crucial. Aalto has given me lifelong friends, a professional support network and the resources to work in the international market. I hope that new members of the Aalto community will also get all of this.'

Hanna Poranen

Master of Arts and Economics 2015, Strategic and Business Designer, Design Company Inventas / Oslo

My Dear University

The lessons and memories of one's student days remain for a lifetime. Aalto University alumni are proud of their alma mater and keen to see their donations contribute towards the university's ongoing success.

foundation pillar of the new Helsinki University of Technology through the streets of the capital. This impressive stunt sped up the university's move to Otaniemi.

Linnoinen has good memories of his professors and of factory excursions in Finland and Sweden. His career began with work on outboard motor design at Valmet's factory in Jyskä.

In 1968, he was tasked with setting up production at Saab-Valmet's car factory in Uusikaupunki. The knowledge was brought from Sweden and the first Saab 96 produced in Uusikaupunki was ready in 1969. Many years later, Linnoinen retired as Managing Director of the factory after having held the position for 25 years.

'The work placements I did during my studies were important for developing my expertise. In factory work, you learn to cooperate with people,' he says. 'Five things are needed for success: knowledge, skills, willpower, teamwork and passion. When people master all of these, things go smoothly.'

Technological know-how is needed to ensure the future success of the Finnish industry.

'Everything starts with education,' he says. 'I am proud to see that great work is being done at

ON MAY DAY of 1956, mechanical engineer student **Juhani Linnoinen** and hundreds of other technology students dragged the

Aalto – work that brings new insights and inventions. That's why I donate to Aalto.'

Bricks for the student village

When **Helena Kautola** began her chemical engineering studies on the Otaniemi campus in 1974, she became the third generation of her family to study engineering. Kautola, her father and her grandfather all did factory work placements abroad during their studies.

'My father carried bricks for constructing the student village from the ruins of the Soviet Embassy after it had been bombed in 1944. He also donated to the construction of Dipoli and received a numbered key in return,' Kautola recalls.

What Kautola remembers most from her own master's studies in engineering are the excursions to domestic and foreign companies, as well as the enjoyable and fun laboratory work done together with other students.

'Our course had a great team spirit and the students have continued to stay in touch throughout their careers,' she says.

In 1990, Kautola defended her doctoral dissertation on bio-process engineering at what later became Aalto University. She also put together degree programmes at both Seinäjoki University of Applied Sciences and Häme University of Applied Sciences, where she currently works as Principal Research Scientist for Biotechnology and Food Processing Technology.

Kautola is a Docent at Aalto University and has served as a mentor for many years. She points



**Juhani
Linnoinen**



**Helena
Kautola**



**Jukka
Gustafsson**



**Mika
Koskinen**

out that donations to Aalto help to keep Finnish science at a high level.

‘As the funding patterns change, universities increasingly need support from alumni,’ she says. ‘If each Aalto alumni were to make a small contribution, it would in total provide a lot of support for the university.’

Part of a distinguished network

Jukka Gustafsson considers himself to be like the Disney character Gyro Gearloose – someone with a continuous passion for new experiences and for developing new things. Studying in Otaniemi in the 1970s opened the doors to an active student life and gave Gustafsson a deep understanding of how metallic materials work.

‘In the metallic engineering guild, I was able to get to know the companies in the field,’ he says. ‘My strongest and fondest memories are the excursion to Sweden and the laboratory’s Tuesday sauna evenings after we had done the Laajalahti run together.’

In Otaniemi, he felt from the beginning that he was part of a distinguished network.

‘It’s great that Aalto’s current students have even better opportunities than before, with students of business, technology and creative arts now mixing together on the same campus.’

Gustafsson’s international career has included application development for the processing industry, service construction and international business management. He is grateful for the good education he received and is currently an active mentor for students in different fields.

‘All alumni should definitely try mentoring. A mentor has a lot to offer when young people are thinking about career options and planning their future,’ he says.

Gustafsson keeps track of Aalto’s lectures and events, as he finds them to be a good opportunity to keep his knowledge up to speed and to meet old friends.

‘I donate to Aalto because the story of its development is fascinating to me,’ he says. ‘The residents of Espoo are fortunate to have Aalto University as an important force for the city’s development. Aalto and Espoo are both strong players in Finland.’

Promoting exports through a diplomatic career

Mika Koskinen fondly remembers his years of study at the School of Business, which he joined in 1986:

‘In addition to being active in student clubs, I participated in student exchanges in Strasbourg, France and in Bergen, Norway,’ he says. ‘I also have good memories of the fun KY disco evenings and the traditional autumn balls.’

Koskinen graduated in 1991 as a Master of Science in Economics and Business Administration. In his career at the Ministry for Foreign Affairs, he has lived in The Hague, Paris, Dublin, Madrid, Lima and New York. In the last two cities he worked as Head of Delegation.

‘Even though my career has been outside the business world, my business studies have served me well within the operating environment of the Ministry for Foreign Affairs, where export promotion is a key element,’ he says. ‘The academic and entrepreneurial way of thinking has been of help in many situations.’

In Koskinen’s opinion, the high level of teaching has always been a key asset of the School of Business. He is also very pleased that in Aalto University the students have great opportunities for multidisciplinary studies.

‘My good education opened up an interesting career for me. By donating, I would like to express my gratitude to this fine old seat of learning. It is also a pleasure to participate in Aalto’s active alumni activities,’ says Koskinen.



Boosting entrepreneurship

Approximately 70% of Master's theses are done in collaboration with companies.

EVERY YEAR, up to 100 new companies are established by the Aalto community. This is half of all the companies founded at universities in Finland.

Over the past six years, more than 3,000 students have taken part in the Aalto Ventures Program that offers instruction in entrepreneurship. The startup and tech event, Slush, reached global recognition in the hands of Aalto students.

The Aalto-based startup community A Grid is one of Europe's largest community spaces. It brings more than 140 startups, small businesses, creative entrepreneurs, accelerators and other partners together under the same roof at the Aalto campus.

The aim of Aalto Innovation Services is to convert research results into positive societal impacts through commercialisation. Typically, more than 150 inventions are published and about five spinout companies are set up annually.

Aalto Startup Center is an accelerator that focuses on technology companies in particular and integrates research-based projects with business activities. Some 40 early stage startup companies are involved, 10 of which operate under ESA BIC Finland which specialises in space technology.

Aalto Entrepreneurship Society is Europe's largest and most active student-led entrepreneurship community. It participates in educating and inspiring the next generation of entrepreneurs. Europe's largest student entrepreneurship event, FallUp, brings together students, startups, other companies and head-hunters.

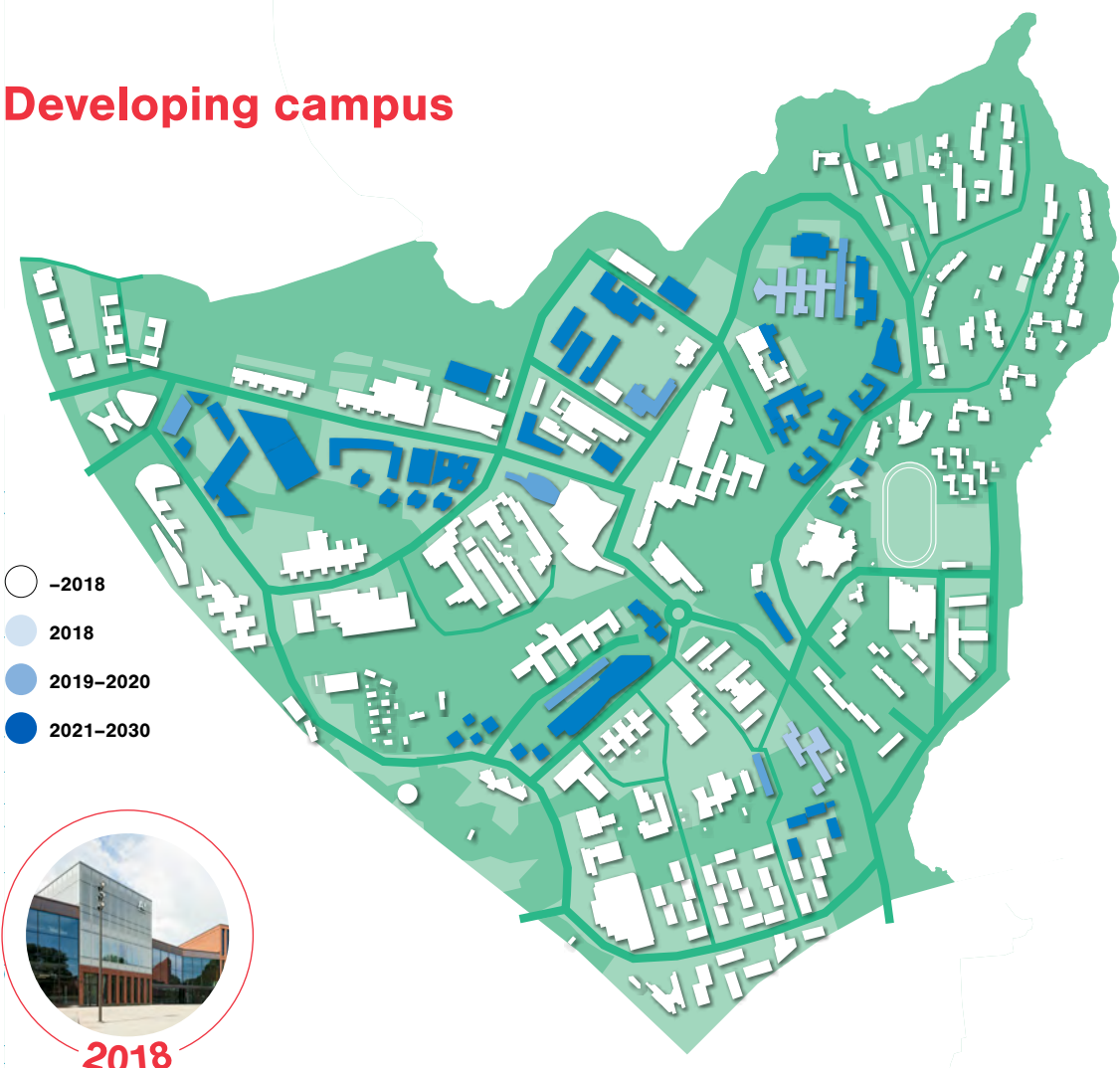
The university's research group for strategic management and growth entrepreneurship is one of Europe's leading actors in its field. The unit provides students with learning experiences that open up international career opportunities.

Diverse business collaboration

Aalto has a total of 2,500 business partners. The goal is to build significant, long-term strategic partnerships with companies and public operators. Aalto's strategic partners are ABB, Neste, Nokia and Saab.

The collaborative activities include research, teaching, theses, course projects and presence at the campus. Approximately 70 percent of Aalto Master's theses are done in collaboration with companies.

Developing campus



School of Arts, Design and Architecture (Väre), shopping centre A Bloc and startup community A Grid opened.



Campus outdoor area improvement began. Aalto University Töölö renovation completed. Renovation of the old shopping centre in Otaniemi began.



School of Business building opened. Renovation of Aalto University Töölö began.



Construction of Aalto Works, Student Centre, Otakaari 2A & B, Otakaari 5L and residential buildings.



Development of university buildings, new student housing, residential and office buildings.

Now is an excellent time to donate



The Finnish government is running a matching funding campaign where it will provide capital to Aalto to match donations received by the university. The matching funding campaign began in 2020 and will continue until 30 June 2022. The government funding will be added to the university's foundation capital.

The initiative will increase the impact of a donation with a multiplier for each euro donated during the campaign. A donation of less than EUR 10,000 is eligible for matching funding when it is allocated to the university in general. A donation of EUR 10,000 or more is eligible for matching funding when it is allocated to Aalto University or one of its three fields of education: business, art and design, or technology.

Donations to the university totalling EUR 850 or more over one calendar year are tax-deductible.

By donating, you will support Aalto University's work in promoting a strong and internationally successful Finland.



'If one wants to make a donation to help Finland succeed, the question is how to get the maximum value for money. A donation always has leverage, and a donation to a university has the most extensive possible leverage. Competence creates future success. A donation to Aalto also supports the reform of university activities. The government's matching funding will further extend the leverage.'

Risto Siilasmaa
*F-Secure founder and
Chairman of the Board*

How Aalto invests responsibly



Iivo Paukkeri



Marianna Bom

ASSETS DONATED to Aalto University are invested in responsible funds.

‘Funds that commit to the principles of responsible investment have access to our investment portfolio. For example, the assessment of environmental impacts should be a natural part of any investment decision,’ says **Iivo Paukkeri**, Head of Investments at Aalto University.

A key responsible-investment measure is carbon intensity. This is calculated as the ratio between a company’s greenhouse gas emissions and its turnover. Aalto’s long-term goal is a carbon-neutral investment portfolio.

The university’s investment team closely monitors the activities and responsible credentials of the funds in Aalto’s portfolio. The team looks at the indicators reported by the funds themselves, as well as ESG (Environmental, Social and Governance) data collected by third parties on carbon intensity and any violations of international norms. Portfolio companies are also screened individually.

‘Our investment activities are transparent, and our administrative operations are organised in accordance with the principles of good governance,’ says Paukkeri. ‘In the future, we will also be communicating and reporting more openly on responsibility and providing information on areas such as the portfolio’s carbon intensity.’

No compromises are made on investment returns

Investment activities must be both profitable and responsible.

The objective of Aalto’s investment portfolio is to achieve an annual return of 5–6 percent. In this regard, things have gone well: in 2019 the return was 15.5 percent, and the portfolio also withstood the shocks of 2020 for a total return of 3.7 percent.

In the future, the financial industry will increasingly be focused on how to effectively

achieve both profitability and responsibility objectives in managing portfolios.

‘The popularity of responsible investment is growing in global financial markets,’ says Paukkeri. ‘The issue has been highlighted by recent major events and changes, such as the coronavirus pandemic. Also, EU legislation has been introducing more responsibility-related reporting requirements.’

Use of donated funds

Donated funds are used both for the long-term development of the university and for immediate operative needs. If desired, donations can be directed towards a specific field of science or professorship.

‘The return on capitalized funds is used for the university’s long-term development. Only the real return is used for teaching and research. This preserves the value of the donations over time,’ explains Aalto University’s CFO, **Marianna Bom**.

Returns from income-generating funds are used for the university’s short-term needs in a manner agreed upon with the donors.

Donations in hybrid funds and the return from them are used to finance professorships for a specified longer period of time. Such donations can be used, for example, to establish a 20-year tenure track professorship.

Aalto is constantly striving to develop different opportunities for donors from a wide range of groups to participate in the development of the university.

‘This year, a new donation option will become available. It will allow alumni to donate to the university on a regular basis, such as once a month,’ says Bom.

Read more about our investment activities at:
aalto.fi/en/aalto-university/endowment-and-investment-strategy

Aalto University's key figures

In field-specific international comparisons, Aalto is ranking among the best in its key areas (see the picture: Rankings in key research areas).

In 2020, QS World University Rankings placed Aalto 9th in the world and 3rd in Europe among universities founded less than 50 years ago.

In the Times Higher Education University Rankings 2021, Aalto ranks the 35th most international university in the world. Among Nordic universities, Aalto came second.

Aalto ranks 47th in the world in responsible consumption and production in the Times Higher Education University Impact Rankings 2020. The ranking is based on the United Nations' Sustainable Development Goals. Aalto also made it to the top 200 in four other goals: Sustainable industry, innovation and infrastructure; Sustainable cities and communities; Clean water and sanitation; and Climate action. More than 1,200 universities participated in the assessment.

There are about 22,000 universities in the world.

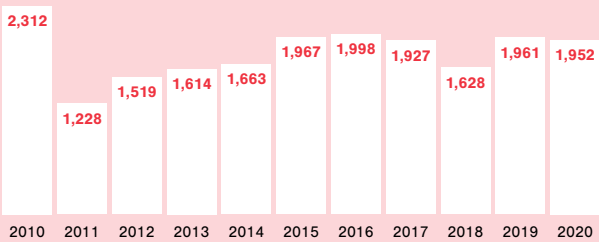
Aalto University's annual board report, financial statements and sustainability reports: aalto.fi/en/aalto-university/key-figures-of-2020-and-reports

Degrees 2020

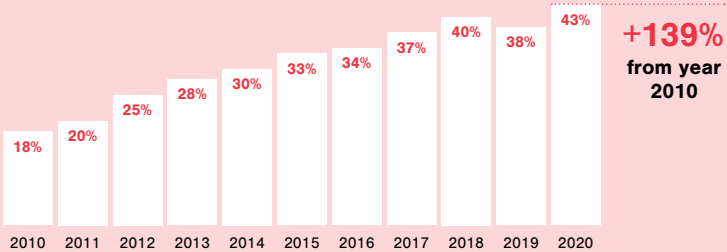


Master's degrees 2010–2020

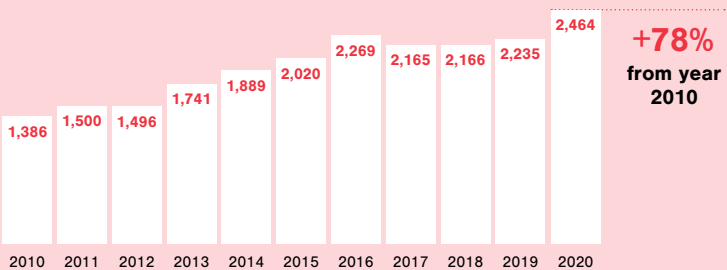
Degree reforms and their transition periods have affected the number of Master's degrees in 2010, 2011 and 2018.



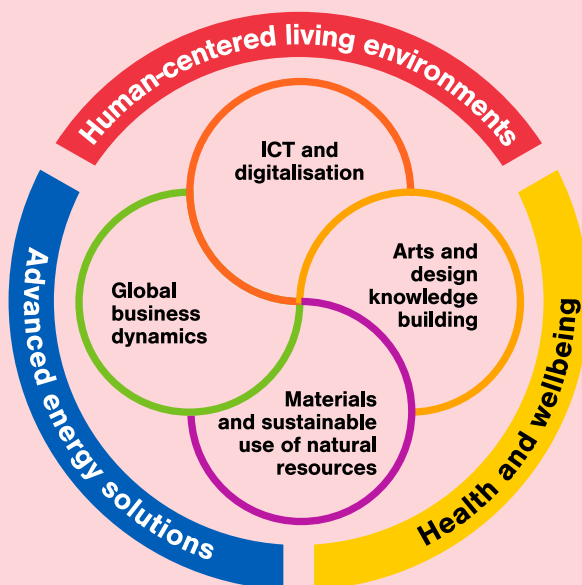
International faculty 2010–2020



International peer-reviewed articles in scientific journals 2010–2020



Rankings in key research areas



● Arts and design knowledge building

QS: Art & Design 6 (2020: 7)

● Human-centered living environments

QS: Architecture/Built Environment 42 (2020: 41)

QS: Marine/Ocean Engineering 35 (2019: –)

● Health and wellbeing

ShanghaiRanking: Medical Technology 101–150 (2019: 101–150)

● Materials and sustainable use of natural resources

ShanghaiRanking: Mining and Mineral Engineering 76–100 (2019: 76–100)

QS: Materials Sciences 98 (2020: 101–150)

● Advanced energy solutions

ShanghaiRanking: Electrical & Electronic Engineering 76–100 (2019: 76–100)

QS: Electrical and Electronic Engineering 79 (2020: 101–150)

Us News: Electrical and Electronic Engineering 81 (2019: 78)

● Global business dynamics

ShanghaiRanking: Management 27 (2019: 32)

ShanghaiRanking: Business Administration 24 (2019: 29)

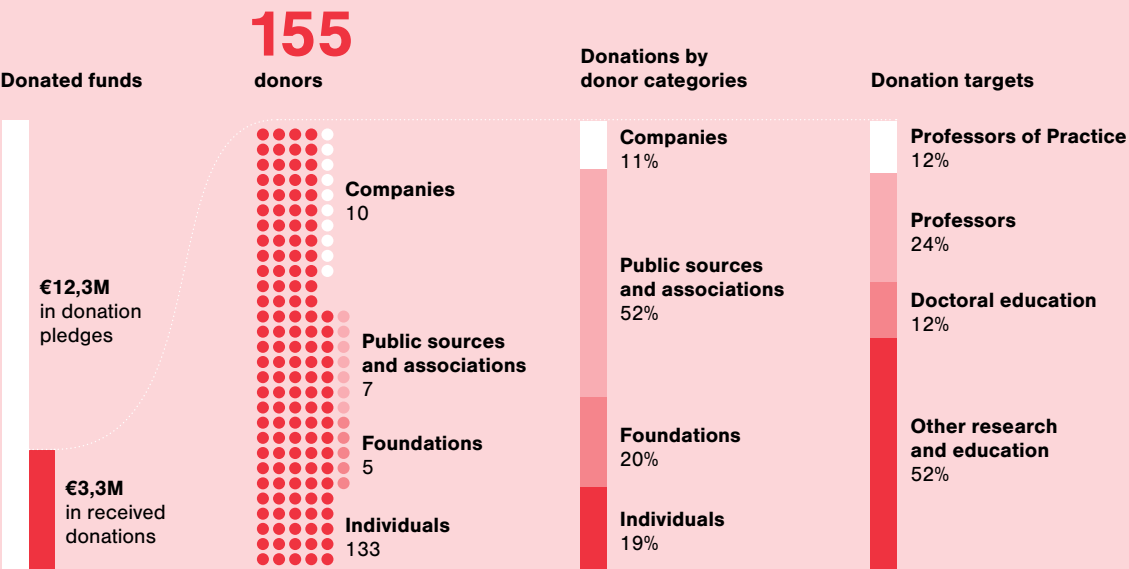
● ICT and digitalization

ShanghaiRanking: Telecommunication Engineering 34 (2019: 22)

ShanghaiRanking: Computer Science & Engineering 51–75 (2019: 47)

US News: Computer Science 56 (2019: 33)

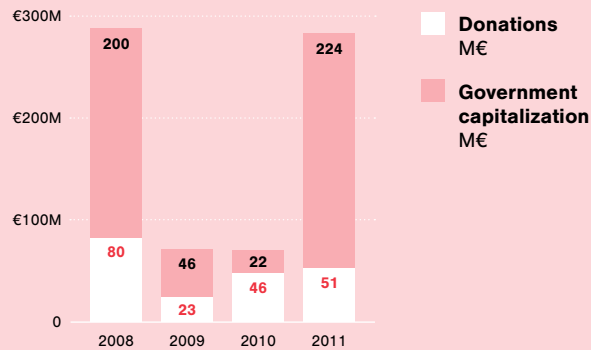
Donations to Aalto University in 2020



Received donations 2008–2020

Establishment of Aalto University and the first fundraising campaign 2008–2011

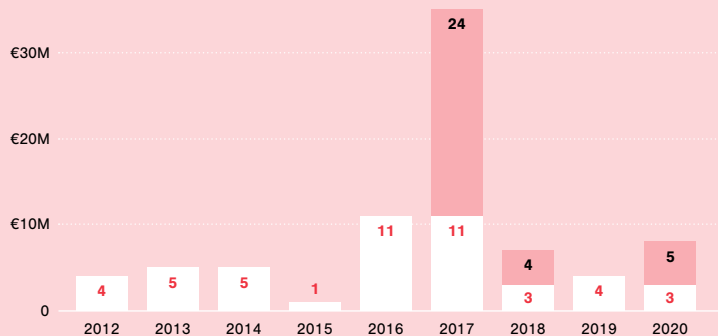
In addition, the management of the funds of Helsinki University of Technology, Helsinki School of Economics and University of Art and Design were transferred to Aalto University in connection with the establishment of Aalto University in 2010.



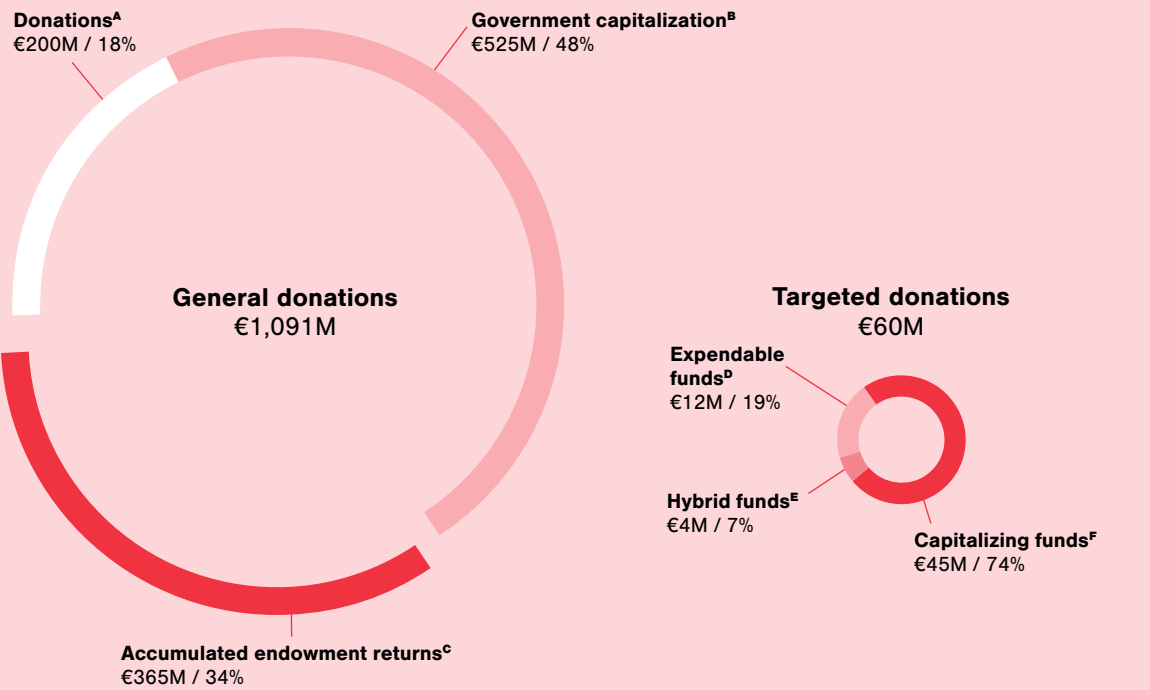
Donations 2012–2020

Donations
M€

Government capitalization
M€



Donation funds in total 2020



The goals of the endowment activities are to preserve the real value of the endowment capital and to provide steady and predictable income to fund university operations. Preserving the real value of the endowment capital secures the university's financial capacity across generations. See also: aalto.fi/en/aalto-university/endowment-and-investment-strategy

The average annual return on the endowment portfolio has been 4.9% after expenses since the inception of operations. The endowment portfolio's return in 2020 was 3.7% (2019: 15.5%) after expenses. At the end of 2020, 26% (2019: 30%) of the portfolio was held in fixed income instruments, 60% (2019: 57%) in equities and 14% (2019: 14%) in alternative risk.

- A** Donations for the long-term development of the university.

B Government capitalization was received €492M in the first fundraising campaign 2009–2011 and €24M in the second fundraising campaign 2015–2017. In the fundraising campaigns, the government capitalized universities according to the donations collected. Government capitalization also includes €4M received as a part of the key projects in knowledge and education in 2018. As part of the third fundraising campaign in 2020, a government capitalization of €5M was received on the basis of research impact criteria.

C The item includes the accumulated endowment returns fund of €324M and the endowment profit of €41M in 2020. The endowment profit and loss from previous financial year, including change in the fair value of investments, are transferred to the accumulated endowment returns fund, from which funding is transferred to the ordinary operations of the university by the decision of the university board. In the long term, only real return is used to fund university operations, and accumulated inflation adjustment preserves the value of the capital over time.
- D** Donations are used for the current needs of the university as agreed with the donor.

E Donations and their returns are used to fund professorships for a long but finite term.

F Donations' returns are used for the university's long term purposes as agreed with the donor. The value of the donation is preserved over time by using only the real return of the donation. A fixed nominal return based on long-term return expectations approved by the university board is transferred yearly to capitalizing donations. The nominal return is currently 5%, from which 2.5% preserves the value of donated funds over time.



Aalto University

**For more information about
donating to Aalto University:**

aalto.fi/donate

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aalto.fi



aalto.fi
[aaltouniversity](https://twitter.com/aaltouniversity)