Review for donors

JUNE 2019
The School of Business moved to Otaniemi campus on 15 February 2019. The building consists of alternating brick and glass modules that form a diamond shaped cluster lobby at the centre of the building.
AALTO UNIVERSITY is a community of bold thinkers. Educating new professionals and engaging in extensive collaboration with companies and other stakeholders are our key pathways to societal impact.

We are building an innovative future through our seven key research areas: ICT and digitalisation; materials; art and design; global business; energy solutions; built environment; and health and wellbeing.

Our academic results are on a strong upward trend: last year, Aalto awarded a record of 263 doctorates while the number of Aalto publications among the most cited 10% increased by 12 percent.

The Otaniemi campus has gradually developed into a unique collaboration hub in Europe as the School of Arts, Design and Architecture relocated to their new premises at the heart of the campus in the summer of 2018, and the School of Business followed in February 2019. Furthermore, in early 2018 Otaniemi also became home to A Grid, one of the largest centres for growth companies in Europe.

Aalto University has become the epicentre of a nationally significant and internationally competitive vibrant innovation ecosystem, where several companies are born every year.

The university’s daily life is characterised by internationality and cultural diversity: we have students from more than one hundred countries and 40% of our academic staff come from outside Finland.

Every day, we at Aalto work hard to solve the great societal challenges that need to be tackled to build a better future, and pull together as community to create a great future for this university.

Developing this multidisciplinary scientific community would not have been possible without the continued and generous support of our donors and alumni, industry partners, foundations, and other organisations.

Thank you for joining us in building an innovative society!

Ilkka Niemelä
President
Active and International Network of Experts

Aalto University has over 90 000 alumni, of which 40 000 are already members of the alumni network, and over 7 500 have registered in the new Aalto Alumni Circle. Our alumni are spread over 80 different countries.

Our mentoring programme brings the current students and alumni together and provides its participants with mutual benefits and collaborative opportunities.

The Aalto alumni network board represents the alumni and brings forward their views on the university’s long-term development, such as strategy work. The board also supports the establishment of new associations for groups or geographical areas where alumni activities are not yet in place.

‘Aalto offers a wide variety of high-quality education in different fields. Students do not have to graduate through a single, identical study path, but the countless combinations of study options allow everyone to create their own specific one. It’s also nice how often one encounters fellow students in professional life.’

Minna Rissanen
M.Sc. (Econ.), Aalto University 2016
Business developer, Nordea

Developing Campus

2010 – 2017
Open Innovation House opened. Renovations of Otakaari 1, Harald Herlin Learning Center, and Dipoli completed.

2018
School of Arts, Design and Architecture building Väre, shopping centre A Bloc, and startup community A Grid opened.

2019
School of Business building opened in February. Töölö building renovations began in May.

2020
New student housing and office buildings. Improvement of the campus green areas begins.

2021 – 2022
Development of other core university buildings continues. Student Life Centre construction begins.

2023 – 2035
Development of other university buildings and new residential buildings continues.

Valuable Excellence in Key Research Areas

ICT and digitalisation
ShanghaiRanking: Telecommunication Engineering 28 (2017: 31)

Global business dynamics
ShanghaiRanking: Management 36 (2017: 49)
Business Administration 34 (2017: 51–75)

Advanced energy solutions
ShanghaiRanking: Electrical & Electronic Engineering 51–75 (2017: 76–100)

Human-centred living environments
QS: Architecture/Built Environment 42 (2018: 46)

Arts and design knowledge building
QS: Art & Design 7 (2018: 9)

Health and wellbeing

Materials and sustainable use of natural resources
ShanghaiRanking: Mining and Mineral Engineering 51–75 (2017: 46)
Educating Game Changers

In 2018, our students graduated with:
- **263 doctoral degrees**,
- **1 628 master’s degrees**,
- **1 218 bachelor’s degrees** and
- **289 graduates from the MBA and EMBA programmes**

In field-specific university comparisons, Aalto has risen to the top 100 universities in its key areas and in most areas up to the top 50 in the world. For example, the QS World University Rankings placed Aalto’s art & design 7th.

The QS World University Rankings Top 50 Under 50, which features the world’s 150 best universities under 50 years old, placed Aalto 9th worldwide and 3rd within Europe. In the Times Higher Education University Rankings, the university was ranked the 50th most international university in the world in 2019. There are about 22 000 universities worldwide.

The international Times Higher Education University Impact Rankings assess universities against the United Nation’s Sustainable Development Goals (SDGs). Aalto University ranked 5th in partnership. In the overall ranking, measured by social and economic impact, Aalto University ranks 19th.

Creative Community for Startups

**EVERY YEAR**, between 70 to 100 companies are founded in the Aalto University ecosystem which accounts for half of the Finnish startups that originate from universities.

Entrepreneurship has become more popular than ever and in the last 5 years, over 3000 students have participated in the Aalto Ventures Program, which offers education in entrepreneurship.

The world-renowned startup event Slush was created by Aalto students to great success and in 2018, the event attracted over 3100 startups, 1800 investors and 20 000 visitors.

One of the largest community spaces in Europe, A Grid, houses over 100 startups, small enterprises, creative entrepreneurs, accelerators and other partners at the Aalto campus in Otaniemi.

Aaltoes – Aalto Entrepreneurship Society – is the largest and the most active student-run community of entrepreneurs in Europe. Aaltoes builds and inspires the next generation of entrepreneurs. They also host FallUp, the largest entrepreneurship event for students in Europe, bringing students, startups, corporations and headhunters together.

Aalto University’s Institute of Strategy and Venturing is one of Europe’s leading institutes in its field and is widely recognised for its excellence. It provides students with learning experiences that will open international career opportunities.
Creative vibrations at the heart of campus

Being ahead of the curve in major social changes allows us to use art for something new and nationally significant. Breaking new ground takes courage. The Aalto University School of Arts, Design and Architecture is designing a new look for the future.

‘ENCOUNTERING art in the everyday opens up new perspectives and allows you to look at the world from a different angle. Facing the unexpected is a pathway to new opportunities’, says Anna Valtonen, Aalto University Vice President, Art and Creative Practices. The largest school of its kind in the Nordic countries, the School of Arts, Design and Architecture is one of the world’s most prestigious international schools in providing higher education in arts, media, design and architecture.

‘We have been widely recognised for our expertise in textile design and fashion. We also study the properties of 3D surfaces and the use of digitalisation in urbanisation and landscape architecture, and develop social and health care services through architecture and design’, continues Valtonen.

One of our research focus areas is Human digital, where the rapidly digitising world of media and audio-visuality meets the human, opening up a whole new world.

‘The creative disciplines play a key role in digitalisation, which is rattling the foundations of societies. We offer new angles on and tools for making digitalisation visible and tangible in everyday life.’

Unique experts for the job market

Aalto University is educating game changers for a rapidly changing society.

‘We give our students the tools for learning more, taking their turn at the reins and asking new questions. We want to give them the ability to recognise the current situation and do something about it.’

At Aalto University, art and science meet technology and business.

‘Our students have the freedom to tailor a degree for themselves that we could not have
planned for them. This means they are equipped with a unique combination of skills once they enter the job market.’

One example of the interdisciplinarity of Aalto are University-Wide Art Studies (UWAS), which offer opportunities for creative thinking to all Aalto students. Students who have had an opportunity to reflect on their field in relation to arts often become more versatile experts in their disciplines.

‘The point of teaching is not to give all students the very same skills, but to help them find their own core competencies. I would like to see this mindset gain ground in both the public and private sector: to have the courage to look at things from new and emerging viewpoints, such as storytelling, brand building and experientialism.’

**From cellulose to evening gowns**

The changes in the surrounding world allow the creative fields to take on a role of heightened importance. The mission of the university is to look to the future, and donated funds are crucial in allowing us to fulfil that mission.

‘Donations allow us to stay at the cutting edge of research and to make rapid advancements in emerging fields, getting results when we need them the most. If Finland wants to boost its international competitiveness, now is the time to focus on the creative fields.’

Donated funds have allowed the School of Arts, Design and
Architecture to establish several Professor of Practice positions. Their diverse backgrounds have given our teaching and research a needed push on our way towards change.

For companies, research and artistic activities may open up new horizons and operating possibilities.

‘Universities have an opportunity to focus on developing innovations over the long term, and through cooperation with industry, we can open up entirely new prospects for companies, too.’

A great example of ground-breaking cooperation is Ioncell cellulose fibre. While its manufacturing process could not have been developed without Aalto University’s expertise in chemical engineering, it took more than engineering skills to make the dress of birch that Jenni Haukio, the First Lady of Finland, chose to wear at the Finnish Independence Day Reception on 2018.

‘What made the dress possible was the combination of our expertise in chemistry, design, textile design and fashion. This allowed us to turn cellulose into fibre, the fibre into thread, and the thread into textile and textile into clothing. Aalto now has the whole chain of expertise required for making designer clothes out of Finnish wood.’

In the best case scenario, Ioncell is looking to revolutionise the Finnish cellulose industry. ‘Ioncell can become a major Finnish pioneer in creativity and processing materials. Instead of selling cellulose by mass, we can use the same wood material to produce high fashion in an environmentally sustainable manner.’

Väre invites people to work together

The Aalto University School of Arts, Design and Architecture moved from Arabia in Helsinki to Otaniemi in Espoo when its new main building, Väre reached completion in summer 2018. The building was the outcome of an
international architecture contest which received 189 entries from around the world.

‘It was amazing that although the entries were assessed anonymously, Verstas Arkkitehdit, an agency composed of Aalto alumni, won the contest.’

Väre is made up of light-filled diamond-shaped sections, which can be partitioned in different ways to meet the varying needs of teaching and studying. Even the vice president works not in the isolation of a personal office, but in a team space where there is room and opportunity for an exchange of ideas.

Väre’s first floor, accessible directly from the adjacent metro station, has areas open to the public, while the ground floor has 15 workshops for e.g. 3D printing, mechatronics, woodwork, textile printing and photography. The workshops are open to the whole Aalto community, inviting its members to try out new things and make new connections.

‘We have recently combined the 3D printing technology used in engineering with cutting-edge expertise in ceramics and design to produce a 3D ceramic printer. Such innovative tools can change the way we think: what if we could produce unique ceramic products for anyone in the future?’

Aalto University is the first Finnish university to adopt the ‘Percent for Art principle’, meaning that about one percentage of the building’s construction costs are used on purchasing art. In Väre, this means arranging changing exhibitions and having works of art on permanent display.

Since the move of the School of Business next to Väre in February 2019, all the core functions of Aalto University are based in Otaniemi, Espoo. The relocation of Aalto Studios to Otaniemi in 2017 made the campus also home to a new type of media centre combining teaching, research and product development.

‘Aalto Studios invites not only members of the university community, but also other stakeholders and companies to brainstorm and develop everything from games and films to the virtual reality of the future.’

If you don’t try, your risk of success is minimal.
Working together for water

The world will soon run out of water. The Majakka Graduate School in Water Science and Technology is setting out to tackle such issues fearlessly and break the mold of traditional ways of doing dissertations, as its students aim for goals beyond their oral defences.

Global water crises are a fact. Professor Olli Varis and post-doc researcher Maija Taka run the Majakka graduate school that promptly tackles water issues.
THE WORLD is full of water, but only a fraction of it is sufficiently clean, fresh water that is vital for life. Water crises are a fact. Agriculture devours water, while population growth and environmental issues are driving people into cramped slums with often chaotic water resource management. Wars and their refugees add to the scarcity of water, while climate change threatens to bring drought also to our doorstep here in Finland.

‘Water supply and management are such intricate interconnected issues that they can really give you a headache. However, we have no choice but to address these issues’, says post-doc researcher Maija Taka from the School of Engineering.

Daily choices matter: bear in mind that the water footprint of beef is 10-fold compared to pulled oats and producing the cotton needed for a T-shirt takes 2700 litres of water.

Realising that tackling these issues takes prompt action, the Land and Water Technology Foundation (Maa- ja vesiteknikan tuki ry) donated 2 million euros to Aalto University’s Water & Development Research Group, thus guaranteeing the graduate school Majakka an operating period of five years.

Majakka, (‘lighthouse’ in Finnish), lights the way: the research areas of its six doctoral students vary from the water safety of city slums to the role of virtual water in global trade, with fieldwork conducted as far away as Cambodia. ‘Finnish expertise in water technology is in high demand’, says leader of Majakka graduate school Olli Varis, Professor for Water Resources Management.

From dissertation to working life

One of the key principles of Majakka is ‘getting out of Ota-niemi’, i.e. making sure that research findings, rather than gathering dust on the pages of a doctoral dissertation, are used in real-life local decision-making, as they have been in, for example, as far as the Mekong River area in Southeast Asia.

‘You have to formulate the results so that they are ready for use by local operators. It is extremely motivating to know that you are solving a real-life issue and someone is waiting for your results’, says Taka.

The graduate school’s international advisory group plays a key role in ensuring that results are transferable and tangible enough. The doctoral students of Majakka have their eyes set on goals beyond their doctoral defence.

‘The dissertation is only one indication of the work done over four years. During that time, our students also gain vital skills for their future expert role, such as leadership, organisational and presentation skills’, says Varis.

The students are encouraged to build networks and take responsibility, also in international arenas. ‘Our goal is to have all students do a part of their research work at a renowned university abroad’, Varis continues.

Unwavering support from start to finish

Too often, doctoral students seem to be left alone in the thesis writing process, because the thesis advisor is too busy. ‘Especially at the start of the process, having too much freedom is a risk. You need someone to say: “You should do this, start from here, and tell me if you need help”’, says Taka, who coordinates the group. ‘I walk the group through the process and they know I’m there if they need me. The group members are also a great help to each other, both in the research work and as mental support.’

As it may take up to two years to get the first article of an article-based dissertation published, the graduate school’s practices include setting interim goals for the students and discussing them weekly. They also have a host of multidisciplinary activities where “everyone learns from everyone”, such as a reading circle for discussing scientific articles or a shared session for tackling coding challenges.

Five years to focus

Time and money are often tight in research work. Funding periods are so short that there is little time for creativity when you have to soon start thinking about submitting new applications.

‘We are fortunate to be able to focus on research for five years and have a long-term vision. This doctoral program is every researcher’s dream’, rejoices Taka.

Sometimes you have to slow down enthusiastic students a little. ‘When you love your topic, you want to learn everything about it, but you can’t include it all in your thesis. A good thesis has to have a clear scope’, Taka concludes.
Maria Clavert, Professor of Practice in Technology Education, encourages young people who want to change the world to study technology, as it can enable real change.

‘IN SCHOOL, I never saw technology and engineering studies as any kind of option for me. I had the preconceived idea that technology is only about machines. I was more interested in people, so I turned to education studies’, explains Maria Clavert, who has a doctorate in education and is now a professor of practice in technology education at Aalto University.

She has since realised that people and technology are not an either/or proposition. Nor can technology really be developed unless one understands the end user, i.e. the person. Technology is gaining ground in all fields, and Finland increasingly needs high tech experts who are at the top of their field.

At the same time, the value of mathematics and natural science subjects in the eyes of young people has long been in decline. Few are interested in mathematics or physics.

Technology experts will be needed in the future, however, to address the challenges and issues facing society.

‘The pool of experts also needs to become more diverse. We need young people with different backgrounds, views and experiences. I highly recommend technology studies to girls and boys who want to affect the course of global development’, Clavert explains.

In her work, Clavert is involved in influencing the study path decisions of students, from elementary school to university studies, as well as in developing education in the technology fields.

Establishing the professorship of practice in technology education was made possible by a donation from Jane and Aatos Erkko Foundation. The five-year professorship is located administratively under the Aalto School of Engineering’s Design Factory, a multidisciplinary research and learning environment for product development.

Breaking stereotypes
According to PISA studies, Finnish girls are second best in the world in the maths and natural sciences. Despite this, they tend not to apply for technology studies; only a fifth of MSc graduates in engineering are women.

‘As Finland’s largest university of technology, Aalto bears its responsibility for that the potential of these young people does not go untapped. The more multifaceted and diverse the community we have developing the products and services of the future, the better the solutions we will have,’ says development manager Marja Niemi of the Aalto University School of Science.

One way to influence young people is to clear up some
Maria Clavert, Professor of Practice in Technology Education, wants to bring technology education to all levels of learning – from grammar school to universities and to teachers’ training.

Donation from Jane and Aatos Erkko Foundation enabled establishing the professorship of practice in technology education.
common misconceptions. Technology is not studied only for technology’s sake: many different kinds of skills are needed in the field.

Teaching in primary school can already influence how young people think about their own possibilities for pursuing studies. Greater understanding about technology education can also be offered to high school teachers on questions such as: How should natural science subjects be presented in the classroom? What are the practical applications of math? What can be achieved with physics?

‘Young people often make choices based on the associations they get from adults concerning different fields. Adults may unwittingly persuade young code crackers and moped tinkerers to enter engineering studies, while steering mathematically gifted girls away from math and towards other alternatives. It is this kind of thinking we are trying to change,’ Clavert explains.
‘We are also trying to raise awareness of what impact technology can have. Technology can provide solutions for almost any formidable challenge in the world. Many young people are conscious agents of change and have the vision and the will to do good things, such as finding ways to rein in climate change,’ reports Niemi.

Teaching beyond borders
To keep Finland’s talent for innovation high, universities must look at their own teaching. Clavert wants to invest in the development of the core courses in Aalto and take full advantage of the opportunities for the multidisciplinarity that the university offers.

‘One goal of my work is to identify best practices for teaching. We already have a number of courses where problem-solving, application of knowledge and crossdisciplinary collaborative teaching is coming together quite nicely. A good example is Sähköpaja (electro-shop), a course that combines entrepreneurialism with user-centredness’, reports Clavert.

The aim is to bring teachers from different fields together to plan the teaching. Instead of breaking down basic education into narrow areas for courses, the bigger entities can be worked on together, focusing more on the application of practical knowledge.

Inspiring activities for children and young people
Aalto University is raising awareness of its research and education in science and technology in a number of ways. The first-ever Shaking Up Tech event was held in Otaniemi on the International Day of the Girl, 11 October 2018, bringing to campus some 200 female high-schoolers from all over Finland. Participants came to find inspiration for studying technology and knowledge about the field.

The event was well-received and served as a pilot for a more extensive project of the university, aimed at encouraging young women to take up technology studies. Shake Up Tech will be a recurring event in the years ahead.

Aalto University Junior, for its part, is bringing technology teaching to the daily lives of children and young people of all ages, through various kinds of courses, clubs, camps and study visits – as a source of inspiration, a support for teaching and for one’s own enjoyment. Aalto University Junior seeks out enquiring minds and fosters the urge to experiment as part of the LUMA Centre Finland network.
ECONOMICS PROVIDES FOR
the common good

2.5 million euro donation enables a professorship in urban economics.
Economics is much more than just euros and the maximisation of profit. The Helsinki Graduate School of Economics provides the expertise needed for everything from public procurement bidding to parental leave arrangements.

WHAT do climate change, daycare and the frequencies used by teleoperators have in common? What is the common denominator between the Bank of Finland, the prime minister, corporate leadership and the Finnish Competition and Consumer Authority? The answer is they all rely on economics and doctors of economics to provide information for decision-making. Finland is facing a shortage of experts in this area.

Helsinki Graduate School of Economics (Helsinki GSE) seeks to strengthen and expand Finland’s economics research and raise it to the upper echelons of the world rankings. Helsinki GSE is a graduate school and research unit founded in 2018 by Aalto University, the University of Helsinki and Hanken School of Economics.

‘Since spring 2018, we have been actively raising funds, recruiting new professors, and planning teaching and research that transcends institutional borders’, reports Aalto University professor and Helsinki GSE academic director Otto Toivanen. Helsinki GSE intends to establish 15 new professorships between 2018 and 2020. The goal is to achieve a clear increase in the number of students graduating with a master’s or doctoral degree.

Doctors of economics provide crucial information to support societal decision-making. Helsinki GSE educates leading experts in economics which we lack here in Finland’ says professor Otto Toivanen.

Data aids understanding
With the increasing data from digitalisation, economics as a social science is touching upon an ever-expanding range of research questions. ‘Economics has an expert ability to uncover the cause-and-effect relationships hidden in immense amounts of data. With the help of our material, we create methods and approaches that support decision-making in society.’

Competencies in economics are needed over a broad spectrum that includes urban housing markets, social and healthcare reform, and preparing for auctions to sell the airwave frequencies used by teleoperators. ‘Our work is seen in decision-making in the public and private sector, for example, in the organisation of daycare and public transportation. A recent doctoral dissertation in economics dealt with the effects of parental leave on the employment of mothers.’

Economics is strongly engaged with the issues of our day. A recent Nobel laureate, William Nordhaus, examines the interactions between climate change and the economy. ‘How we move about and how we heat our homes, for example, affects the state of the climate. Economics is useful when various kinds of regulations and guidance are needed, and for forming an understanding of how markets operate.’

New professorship in urban economics
With the founding of Helsinki GSE, Finland gained its first chair in urban economics, as Aalto University associate professor Tuukka Saarimaa took up his post last autumn. The professorship is funded through donations by the cities of Helsinki, Espoo, Vantaa and Kauniainen, the Finnish municipality foundation (Suomen kuntasäätiö), Keva (public-sector pensions administration) and MuniFin municipality finance. Altogether, the donations total 2.5 million euros. Saarimaa’s post has a dual location, at the School of Engineering Department of Built Environment and at the School of Business Department of Economics.

‘Saarimaa’s professorship will create a unique bridge between two Aalto schools and two quite dissimilar fields of learning. I hope this will be a model for future professorships.’

Urban economics will come to assist cities as they strive to develop under conflicting pressures. Urbanisation contains a host of mutually interacting issues such as the income distribution, welfare, economic growth and the impact of housing on climate change. Bridges between disciplines are needed in order to tackle such large-scale and nationwide challenges.

By a recent joint 2.5 million euro donation from the Saastamoinen and Jenny and Antti Wihuri foundations, Helsinki GSE will get a new professorship in data sciences. The professorship will be located at the Aalto University School of Business. ‘Although our name is Helsinki GSE, our efforts include contributions from the whole of Finland. It is our national responsibility to educate economics professors in Finland along a broad front to meet the demands of the private as well as the public sector’, Toivanen concludes.
Aalto University’s pro forma operative deficit in 2018 was €18 million. The pro forma operative income totalled €347 million, from which the university funding granted by the Ministry of Education and Culture accounted for €219 million. Pro forma operative expenses were €365 million, from which personnel expenses accounted for 62%, and facility expenses for 14%. The operative deficit was covered by the use of accumulated returns from the investment portfolio of the university. The pro forma deficit of investment and financing activities totalled €64 million, mainly due to the mandatory adoption of the IFRS9 accounting method that requires the reporting of any changes to the market value of the investment portfolio in the income statement. Following the year-end, the value of the investment portfolio of the university has recovered with the financial markets developing in a positive direction.

Aalto University Group’s balance sheet totalled €1671 million at the end of the financial year.

### Key Figures of Aalto University’s Finances

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### Donations Build the Future

Donations to Aalto University are used to promote free research and scientific and artistic erudition to provide higher education based on research and to educate students to become the game changers of the future.

Aalto University is committed to complying with the values and principles of responsible fundraising and we act respectfully towards the university community, the donors and the beneficiaries. Fundraising at Aalto is open and transparent and we report on the donations, their usage, administration, costs and returns.

By donating to Aalto University, you support research and work on behalf of a stronger Finland that succeeds in international competition.

Donations to the university are tax-deductible.

TEXTS
Marjukka Puolakka, Aalto University

LAYOUT
Terhi Korhonen

PHOTOS
Aalto University
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