

# Helsinki News



University of Helsinki  
turns 375 looking  
forward

Helsinki celebrates  
Jean Sibelius anniversary  
with new information

1/2015

## University of Helsinki: At the forefronts of science

*The University of Helsinki celebrates its 375th anniversary by challenging the best minds to tackle global challenges with groundbreaking new ideas.*

the flagship project of the anniversary year and a globally unique undertaking to create future well-being.

Helsinki Challenge underscores the wide range of expertise and excellence that the University of Helsinki possesses today. This multi-disciplinary university is among the academic elite of the world. It has repeatedly been placed among the top 0.1 percent of the world's 17,000 universities. Shanghai Academic Ranking places the University of Helsinki in 73rd position, and the university has announced an ambitious goal to be among the 50 best research universities in the world by 2020. Already the university ranks 46th in medical education and research.

The University of Helsinki has 11 faculties, 35,000 students including 5,000 doctoral and 2,000 international students, 4,400 teaching and research staff, and 200,000 alumni all over the world. The university operates on four campuses in Helsinki including one in the city centre.

The university was founded as the Royal Swedish Academy in Turku, Finland in 1640. It was moved to Helsinki in 1828, 16 years after Helsinki was made capital of Finland, which was then an autonomous Grand Duchy of Russia. Throughout its history and through Finnish independence in 1917, the university has played a central role in building Finnish society and well-being.

What kind of moral decisions do we expect intelligent machines to make? Should a robotic car break traffic laws to avoid collision when a human driver makes a mistake?

Could genes be reprogrammed to find a permanent cure for inherited blood disorders? How to do this safely?

Another 18 major challenges and ideas how to solve them were presented by 20 research teams in a public event at the University of Helsinki in late January – the launch of the programme celebrating the university's 375th anniversary this year. The challenges and proposed solutions make up Helsinki Challenge,

## World-leading research at University of Helsinki

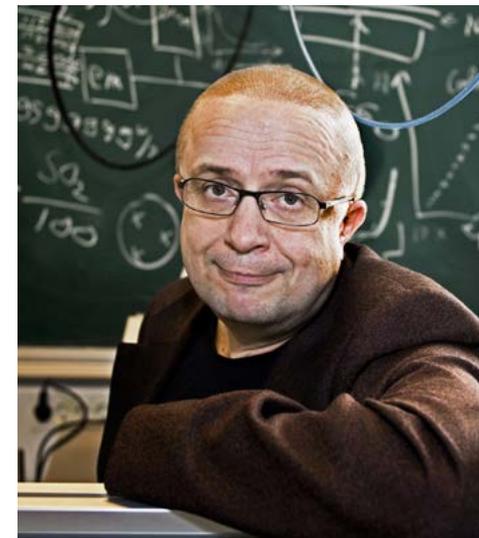
Finnish research excellence is focused in the Academy of Finland's spearhead programme Centres of Excellence. Each one of the 14 Centres of Excellence is in the top five percent of their fields globally. The University of Helsinki is home to 7 and participates in 3 of the centres. They represent a wide range of fields ranging from geosciences to molecular cancer biology.

## How aerosols affect climate change

What impact do small airborne particles – aerosols – have on the climate? This is one of the hottest questions tackled by climate researchers in search for ways to help slow down climate change and improve air quality.

Academy Professor **Markku Kulmala** at the University of Helsinki's Physics Department is at the helm of world-leading research in aerosols and their influence on climate change. The Centre of Excellence led by him studies aerosols and the interactions between the biosphere and atmosphere. The findings bear direct relevance to the understanding of climate change. Dr. Kulmala's team has won international awards and produced revolutionary findings. He is the world's most frequently quoted researchers in geosciences.

Dr. Kulmala has expanded his reach to China, planning an air-quality observation station located near Beijing. The goal is to better understand factors affecting air quality. "We cannot solve the air-quality problems in China, but we can offer concrete help to find solutions," he says.



Dr. Markku Kulmala

## New treatments for leading causes of death

Academy Professor **Kari Alitalo** at the University of Helsinki's Institute of Biomedicine directs a Centre of Excellence that strives to provide new treatments for cancer and cardiovascular diseases, which are the leading causes of death in the western world. Current cardiovascular and cancer therapies are often insufficient, unsuccessful or not suitable for all patients.

Dr. Alitalo's team seeks to reveal new disease-related functions of endothelial growth factors (growth factors affecting the inner lining of blood vessels) and their cell signalling in cancer and cardiovascular diseases. The team seeks to establish preclinical models of effective therapy based on the new knowledge.



SafePreg Helsinki Challenge team

# Helsinki Challenge

Mind-blowing ideas for the benefit of the world

Glycyrrhizin is a sweet-tasting constituent of liquorice root used widely in the food industry as a sweetener. In Finland alone, 400 food products contain glycyrrhizin. Pregnant women should avoid glycyrrhizin because it can severely harm the fetus, causing many problems later in life including lower cognitive function, behavioural problems, higher stress responses, higher body weight and advanced pubertal maturation. Nevertheless, many pregnant women consume glycyrrhizin, usually unknowingly.

*SafePreg* is a project at the University of Helsinki to protect fetuses against glycyrrhizin.

The project team is developing a barcode reading application available for smartphones that allows women to know if a food product contains glycyrrhizin. The app could be developed further to include all substances harmful for an unborn baby.

*SafePreg* is one of the 20 semi-finalist projects selected for the Helsinki Challenge competition from more than 140 proposals to create ideas for a better world. The winners of the prize – 375,000 euros, that is, 1,000 euros for each year of the university's existence – will be announced in November 2015. In the mean-

while, the teams participate in a coaching programme to refine their ideas.

*Helsinki Sleep Factory* tackles a major problem affecting about 15 percent of adolescents: noticeable difficulties in falling asleep and waking up at normal times. Sleep deprivation adversely impacts their school attendance and learning, energy levels and emotional well-being. Helsinki Sleep Factory combines sleep research, technology and social media to create a motivating, empowering and personalised virtual sleep programme for adolescents to improve their sleep-wake rhythm.

*Climate Whirl* approaches the enormous challenges of climate change and air pollution from the perspective of public information. The project combines art and science to build a comprehensive and visual platform meant to help the public and policy makers to understand the scientific principles of climate change and air pollution.

*Biodiversity Now!* looks at what we can do to prevent loss of biodiversity. The team is developing an offsetting scheme to counteract harmful effects of land use. The goal is to steer human activity to areas where its impact can be offset, making valuable natural areas less attractive for development.

*Lab Impact Africa* seeks to increase the number of laboratories and to improve their services in Africa. The project team harnesses Finnish expertise in microbiology to create laboratory modules that can be adapted to local needs.

*Genetic Correction of Inherited Hemoglobin Disease* seeks a permanent cure for inherited blood disorders. The team works on one of the world's most common and difficult genetic diseases, beta-thalassemia.

*Engaging Future Workplace* rethinks workplaces, as they are faced with new technologies and increasingly digital methods of communication.

## University of Helsinki

Better than

**99%**  
of the world's universities

**6,000**  
degrees annually

**35,000**  
degree students,  
6% international

**8,000**  
55% employees 13% international  
teaching and research staff

**200,000**  
alumni all over the world

# The world celebrates Jean Sibelius

This year marks the 150th anniversary of the birth of **Jean Sibelius**. This Finnish composer acquired mythical proportions in Finland already during his lifetime and has been hailed as one of the most famous Finns of all times. The anniversary is celebrated worldwide with Sibelius' music, exhibitions, talks and websites. A number of orchestras present the complete Sibelius symphonic cycle. Among them are the Seattle Symphony with the most extensive Sibelius festival in the United States, and the Berlin Philharmonic performing in Berlin and London.

Helsinki celebrates Sibelius 150 with new information and exhibitions on the composer's life in Helsinki. Sibelius lived most of his life in the Helsinki region and achieved the greatest accomplishments of his career in Helsinki.

## Sibelius 150 jubilee events in the Helsinki region

**1 March – 4 October.** *Aino Sibelius*. An exhibition at the Sibelius home Ainola presenting the story of Jean Sibelius' wife Aino.

**Summer.** *Sibelius Finland Experience*. A series of daily concerts at Helsinki Music Centre.

**10 June – 6 September.** *The*

*World of Jean Sibelius*. A musical exhibition at Helsinki City Hall. The exhibition sheds light on the composer's relationship to Helsinki.

**16 October – 13 March 2016** *Composer Jean Sibelius 1865–1957*. An exhibition at the National Museum of Finland. Sibelius' music leads visitors

to the life of the composer. **22 November – 3 December.** 11th International Jean Sibelius Violin Competition. The final round will be held on 1–3 December at Helsinki Music Centre and feature the Helsinki Philharmonic Orchestra and the Finnish Radio Symphony Orchestra.

### Legendary Finnish composer

Jean Sibelius (8 December 1865 – 20 September 1957) represented the later Romantic period. He played an important role in the formation of the Finnish national identity. This role culminated in his tone poem *Finlandia*, one of his best-known works. Sibelius' seven symphonies form the core of his works. Other celebrated works by Sibelius are the *Karelia Suite*, *Valse Triste*, the *Violin Concerto*, *Kullervo*, *The Swan of Tuonela* and *Lemminkäinen Suite*. Sibelius lived with his family – his wife **Aino** and six daughters – in the Ainola Villa near Helsinki from 1904 to his death. Today Ainola is a museum open to the public.  
[www.sibelius150.org](http://www.sibelius150.org), [www.sibelius.fi](http://www.sibelius.fi)

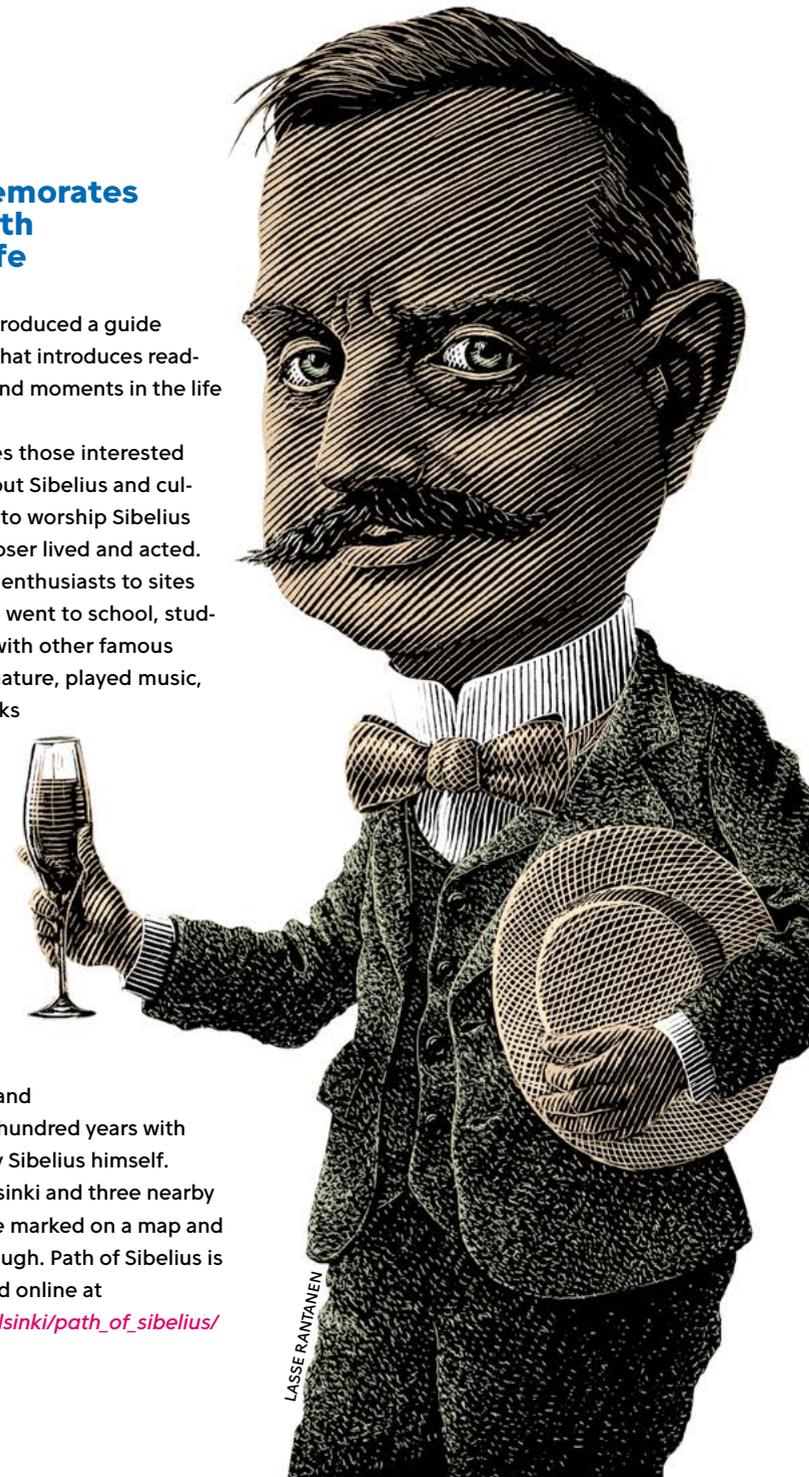
### Helsinki commemorates Jean Sibelius with a guide to his life

The City of Helsinki has produced a guide entitled *Path of Sibelius* that introduces readers to important places and moments in the life of Jean Sibelius.

*Path of Sibelius* serves those interested in learning new facts about Sibelius and cultural travellers who wish to worship Sibelius at sites where the composer lived and acted. The guide takes Sibelius enthusiasts to sites where Sibelius was born, went to school, studied, composed, partied with other famous Finnish artists, enjoyed nature, played music, premiered his major works and lived his family life.

In addition to the well-known monuments to the composer, the guide leads readers to lesser-known monuments. One of these is a musical tribute to Sibelius at Helsinki's Kallio Cathedral, which has played the composer's Bell Melody at noon and 6 p.m. daily for over one hundred years with cathedral bells chosen by Sibelius himself.

The guide covers Helsinki and three nearby communities. All sites are marked on a map and can be easily walked through. *Path of Sibelius* is available both in print and online at [www.e-julkaisu.fi/visit\\_helsinki/path\\_of\\_sibelius/](http://www.e-julkaisu.fi/visit_helsinki/path_of_sibelius/)



LASSE RANTANEN

## Study supports a railway tunnel between Helsinki and Tallinn

A new pre-feasibility study on fixed transport links between Helsinki and the Estonian capital Tallinn recommends a rail link built into a tunnel to connect the cities under the Gulf of Finland. The distance between the cities is 80 km. The tunnel would connect to the junctions of the current public transport systems in both countries. The main factor speaking in favour of a rail link is the short travel time allowed by railway transportation. A prerequisite for the project is the realisation of the Rail Baltic connection through the Baltic countries to Warsaw.

The study projects that the tunnel could be completed after 2030. The current cost estimate for the tunnel and related transport arrangements is €9–13 billion, part of which would be covered by income generated by the tunnel operation, but 40–50 percent of the cost would have to be covered from public funds.

## Helsinki named UNESCO City of Design

UNESCO has conferred City of Design status to Helsinki as part of the UNESCO Creative Cities Network. The Creative Cities Network supports

worldwide co-operation and communication between cities. The members of the network recognise the added value that the creative sectors bring to sustainable urban development.

The application for the status submitted to UNESCO by the City of Helsinki focused on Helsinki's commitment to utilising design in developing a better city, as laid out in the city's strategy. The new status continues Helsinki's and Finland's design tradition and the work initiated in 2012, when Helsinki was World Design Capital 2012 together with four other Finnish cities.

## Helsinki to become Northern Europe's Health Capital

Helsinki seeks to profile the city as the Health Capital of Northern Europe on the basis of the Helsinki area's major strengths in life sciences. According to a new study commissioned by the City of Helsinki and University of Helsinki, the Meilahti medical and Viikki biosciences campuses of the University of Helsinki and the Otaniemi campus of Aalto University, together with their partnering organisations, form one of the largest concentrations of life sciences in Northern Europe. Life sciences are some of the fastest growing economic sectors globally.



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