

33rd World Cultural Council Award Ceremony

Commemorative Brochure



RIGA TECHNICAL
UNIVERSITY

Celebration of 154th Anniversary
of Riga Technical University

Welcome note for the 2016 WCC Award Ceremony, Riga, Latvia



The World Cultural Council (WCC) was delighted to accept the invitation of Riga Technical University's (RTU) Rector to hold its 33rd Award Ceremony at RTU in Riga, Latvia.

It is particularly appropriate to hold the Ceremony in RTU, which was founded in 1862 – the first technical university in what was then the Russian Empire. The University symbolizes a commitment to the application of knowledge for the benefit of society. It has always welcomed students of any nationality or religion, regardless of social background. And today it is a dynamic university, with a wide network of international collaboration and co-operation. RTU students spend time in other institutions all over the world, including Mexico, home of the WCC.

This year the WCC will be recognizing the work of two remarkable scholars, with the Albert Einstein World Award of Science and the José Vasconcelos World Award of Education. These awards are given for exceptional contributions to the intellectual life of the world, and to innovative approaches to education.

As part of the 2016 Annual Award Ceremony, the WCC will also reward and encourage nine highly promising Latvian researchers with Special Recognition Diplomas.

The WCC is committed to the recognition of achievements in scholarship, creativity and altruism. It believes that science, education and the arts hold the key to the future of humanity. They are the building blocks of culture. It is, then, a special privilege to hold the Award Ceremony in the beautiful city of Riga, Europe's City of Culture in 2014.

A handwritten signature in black ink that reads "Colin Blakemore". The signature is written in a cursive, slightly slanted style.

Professor Sir Colin Blakemore
President of the World Cultural Council



I am proud that Riga Technical University (RTU) will celebrate its 154th Anniversary on the 14th of October 2016 simultaneously with the 33rd World Cultural Council (WCC) Award Ceremony. Each anniversary of RTU marks not only a milestone in the development of the university, but also commemorates the establishment of higher education in the present territory of Latvia. Nowadays RTU, a modern and prestigious university, is internationally recognized as one the leading science and innovation universities in the Baltic States. RTU is a landmark in Latvia not only for being the largest university, but also for its contribution to the nation's development. In order to honour this event, RTU Design Factory will be opened during the celebration and I am excited about the opportunities that it will bring to the students and their entrepreneurial spirit.

During the Award Ceremony dedicated to granting the Albert Einstein World Award of Science and the José Vasconcelos World Award of Education nine excellent researchers from RTU will receive WCC Special Recognitions

for their educational and scientific contribution to society. I would like to congratulate all award recipients for their success and invite you to share this moment together with us in the National Library of Latvia where the event will take place.

I believe that the World Cultural Council's vision of promoting culture, scientific values and goodwill throughout the world is very much aligned with values of RTU. Therefore I would like to invite you to the 33rd WCC Award Ceremony and we will do our best to provide you with an outstanding experience of Latvian culture and Riga Technical University.

A handwritten signature in dark ink that reads "Leonids Ribickis". The script is cursive and elegant.

Prof., Dr. habil. sc. ing. Leonids Ribickis
Rector of Riga Technical University

The World Cultural Council



The World Cultural Council (WCC) is an international organization based in Mexico. Members of the Council are eminent global scientists and personalities and include numerous Nobel laureates. The objectives of the WCC are to promote scholarship, art and culture and to foster fraternity among people, nations and governments, based on mutual respect for ideology, religion, race, and gender.

One of the means of achieving these objectives is by granting the Albert Einstein World Award of Science, the José Vasconcelos World Award of Education and the Leonardo da Vinci World Award of Arts to outstanding individuals or organizations whose work has had a significant and positive impact on the cultural enrichment of mankind.

In rewarding outstanding individuals, the World Cultural Council pays tribute to their remarkable achievements as well as their relentless persistence. Their hard-earned breakthroughs in the fields of knowledge, learning and creativity have rendered an invaluable service to mankind and improved the well-being of all of us who share this planet.

The WCC annually organizes an Award Ceremony at which these recognitions are conferred. Each ceremony is held in a different country with a renowned university or academic institute acting as host. This year it is our pleasure to celebrate the Award Ceremony together with the 154th Anniversary of Riga Technical University.

We consider such an event to be an excellent opportunity for disseminating the outstanding achievements of the awardees and celebrating the inspiration that they bring as role models for new generations.

The Awards 2016

The Albert Einstein World Award of Science is conferred on eminent scientists, individuals or institutions whose remarkable achievements have benefited mankind and can serve as an inspiration for future generations.

The José Vasconcelos World Award of Education is bestowed on a renowned educator, an authority in the field of teaching, or an individual who has promoted education policies and has had a significant influence on the advancement of culture or well-being of mankind.

The Science prize is awarded annually, whereas the Education and Arts prizes are granted every second year. Each award consists of a Medal, a Diploma and an Award Cheque of US\$ 10,000.

The importance of these awards is bolstered by the fact that the jury is comprised of world-renowned personalities in their respective fields, including various Nobel laureates.

In rewarding outstanding individuals, we pay tribute to their superior and remarkable achievements as well as their relentless persistence. Their hard-earned breakthroughs in the fields of knowledge, learning and creativity have rendered an invaluable service to humanity and improved the welfare of all of us who share this planet.

The Albert Einstein World Award of Science

The Albert Einstein World Award of Science was created as a means of recognition and encouragement for scientific and technological research and development. It takes into special consideration research which has brought true benefit and well-being to mankind.

The winner of the award is elected by the Interdisciplinary Committee, which is composed of world renowned scientists, including various Nobel laureates.



The José Vasconcelos World Award of Education

The José Vasconcelos World Award of Education has been established as an acknowledgment of those who have the all-important labour of teaching the underlying basis of our present civilization.

It is granted to a renowned educator, an authority in the field of teaching, or to a legislator of education policies who has had a significant influence on the advancement of the scope of culture for mankind.





Professor Edward Witten



Professor Edward Witten, Charles Simonyi Professor, Institute for Advanced Study, Princeton, USA, has been selected as the winner of the ALBERT EINSTEIN World Award of Science 2016.

Members of the Interdisciplinary Committee highlighted Professor Witten's visionary research that affects our fundamental understanding of all physical interactions. His outstanding work has opened new fields of research that transcend disciplinary boundaries.

Professor Witten's achievements fulfil the criteria for the ALBERT EINSTEIN World Award because of their remarkable contribution to human thought and scholarship. The World Cultural Council acknowledges his persistence, breakthrough creativity and commitment to learning as an invaluable service to mankind and as an inspirational example for future generations.

Edward Witten's research is distinct, not only for its calibre but also for its deftness in navigating the perceived divide between pure physics and mathematics, enriching both fields in new and unforeseen ways. His landmark achievements in bridging these contrasting disciplines has made him a world scientific leader.

Probably best known for his seminal contributions to superstrings as a candidate theory for the unification of all known physical interactions, Witten played an influential role in the 1980s, showing how to derive semi-realistic models of particle physics from string theory. In the following decade, his work on duality and the strong coupling behaviour of string theory was highly significant. He is also known for numerous results in quantum field theory and the Standard Model of particle physics, sometimes using string theory methods.

Professor Witten's contributions to mathematics have also been noteworthy. He is known, among other things, for his novel approaches to Morse theory, the Jones polynomial, and the positive energy theorem of General Relativity; for his work on the intersection theory in moduli spaces; and for the Seiberg-Witten invariants of four-manifolds and their relation to Donaldson invariants.

He is a member of numerous academic societies, including the American Academy of Arts and Sciences, the American Philosophical Society, the National Academy of Sciences, the Royal Society of London and the Académie des Sciences of the Institut de France.

Professor Witten has won numerous awards, the most recent being the Isaac Newton Medal of the Institute of Physics (2010), the Fundamental Physics Prize (2012), the Kyoto Prize in Basic Sciences (2014), and the APS Medal for Exceptional Achievement in Research (2015).

Witten is the author of over 300 scientific papers and is the first and only physicist to have been awarded a Fields Medal, the highest honour that can be bestowed on a mathematician.

“Most people say that it is the intellect which makes a great scientist. They are wrong: it is character.”

Albert Einstein



Professor Kalevi Ekman



The JOSÉ VASCONCELOS World Award of Education 2016 will be awarded to Professor Kalevi Ekman, Professor of Machine Design, School of Engineering, Aalto University, Finland. This prize recognizes his international and productive humanistic approach to education and his visionary and inspiring ideas on the Design Factory Concept as outstanding educational methodology.

The prize further acknowledges Professor Ekman's relentless efforts as a mentor and teacher and his passion for fostering learning, multidisciplinary and cross-cultural cooperation.

Kalevi Ekman is the visionary founder and driving force behind the Global Design Factory Network, which currently links ten design factories on five continents. For 20 years "Eetu", as he is known, has pioneered methods designed to engage students in the education process, foster multi-disciplinarity, spark entrepreneurship, promote teamwork and enhance multiculturalism.

The roots of the Design Factory Concept date back to 1997 when Professor Ekman began exploring ways of bringing industrial design students together with machine design students to solve real-life challenges provided

by industrial partners. Collaborative work continued and Aalto Design Factory was eventually founded in October 2008.

The actors involved in the Design Factory Network represent diverse fields, ranging from science, engineering, business and design, through to the arts and humanities.

For students, the Design Factory provides a holistic experience characterized by real-life challenges in an enthusiastic atmosphere, with genuine teamwork and daily international collaboration. For the business community, it is an innovative environment for incubating and implementing new ideas. Meanwhile, for researchers, the Design Factory offers unique opportunities to conduct open-ended research initiatives challenging the industrial status quo.

Aalto Design Factory is open 24/7 and is specially laid out to foster human interaction. A kitchen, coffee area and even hugging point encourage dialogue. A live web video link continuously connects the Design Factory in Finland to its global network partners.

The success of the Design Factory can be partially measured by the fact that the methods and spaces have been duplicated on five continents, in countries as diverse as China, Australia, Chile, Switzerland, Korea, Portugal, the Netherlands and the USA.

Annually, some 40 courses involving 1200 students include projects at Aalto Design Factory. More than 10,000 guests, including heads of state, visit it each year. Numerous scientific publications and masters and doctoral theses are written every year on its pedagogical methods.

In short, the work of "Eetu" Ekman is starting to change the face of higher education by motivating and empowering individuals, placing a premium on soft skills and human values. His work has inspired hundreds of university educators and thousands of students across the globe.

"A true education is not complete without the drive that can only be spurred by a great intent, a high ideal."

José Vasconcelos

Riga Technical University

Riga Technical University (RTU) is the largest technological university in the Baltic States with a rich history and clear future vision aimed at promoting excellence in student academic results, research, and global issues in cooperation with industry and foreign partners.

RTU was established in 1862 as a multi-discipline polytechnic higher educational institutions. It was devised following the model of the most advanced technical universities of that time – Zurich and Karlsruhe, and became a foundation that allowed Riga to develop into a remarkable industrial centre in Europe at the beginning of the 20th century.

RTU has sustained its role in the education system of Latvia. Nowadays, RTU is an accredited, internationally recognized European university that implements academic and professional study programmes of advanced quality. The University is proud of its cultural traditions and scientific achievements. Notable alumni of the university are esteemed scientists, like Nobel prize winner Wilhelm Ostwald and world-known chemist Paul Walden. Today the university excels with state-of-the-art infrastructure, cutting-edge research and innovation.

RTU carries out research in the fields that are essential for the national

economy of Latvia, and educates and trains highly qualified specialists that are in great demand and competitive in the international labour market.

To provide the studies that meet contemporary quality requirements and ensure advanced research, at present RTU has been implementing the construction of the joint territorial complex in Kipsala, where modern academic and research premises are being gradually equipped and effective cross-disciplinary cooperation is being promoted. In order to facilitate the accumulation of progressive ideas and development of a creatively restless international environment, RTU attracts the best members of academic personnel and industry representatives from Latvia, as well as foreign specialists and students, in the implementation of the study process and research work. RTU welcomes students to share with them the knowledge that is necessary to promote the development of Latvia and the entire world.

Riga Technical University is proud that Professor Leonids Ribickis is a new member of the Interdisciplinary Jury of the WCC based on his academic achievements and scholarship.

World Cultural Council Award Ceremony and RTU 154th Anniversary Ceremony Programme

Thursday 13 October

Faculty of Architecture
and Urban Planning

- 17:00** **Public lecture**
"Passion-based learning"
Prof. Kalevi Ekman,
2016 Jose Vasconcelos
Award Winner
- 18:00** **Opening Ceremony**
of RTU Design Factory
and Rector's Reception
- 20:00** **Visit**
"Exploring RTU Design
Factory"

Friday 14 October

Ziedonis Hall,
National Library of Latvia

- 9:00** **Registration**
- 10:00** **Plenary Session**
of RTU 57th International
Scientific Conference
- 11:00** **Keynote speech**
"Light Rays and
Black Holes" by
Prof. Edward Witten,
2016 Albert Einstein
Award Winner
- 12:00** **RTU Award Ceremony**
The Scientist of the Year
and the Young Female
and Male Scientists of
the Year 2016
- 17:00** **The World Cultural
Council Award
Ceremony 2016**
- Albert Einstein
World Award of Science
 - José Vasconcelos
World Award of
Education
 - Special Recognition
Diplomas
- Musical performances
by:**
- RTU Male Choir
"GAUDEAMUS"
- RTU Female Choir
"DELTA"
- RTU Mixed Choir
"VIVERE"
- RTU Brass Band "SPO"
- 18:30** **Gala Dinner**
(attendance by
invitations only)

2016 Special Recognition Diplomas of the World Cultural Council

As part of the 2016 Annual Award Ceremony, the World Cultural Council will also reward and encourage nine highly promising Latvian researchers with Special Recognition Diplomas.



Elina Gaile-Sarkane

Professor Gaile-Sarkane has designed and taught numerous highly popular courses for MBA students. She has been the leader of several international projects, including projects within the EU Leonardo da Vinci Innovation Transfer Programme, dealing with the cutting edge of management knowledge and skills. The winner of RTU teaching and orating awards for eight consecutive years, Professor Gaile-Sarkane also acts as an expert for the Latvian Council of Science.



Talis Juhna

Talis Juhna, Professor of Water Technology, has established one of the most advanced water research laboratories in the Baltic States. His research has attracted more than 7 million euros and focuses largely on protecting drinking water in urban settings from microbiological contamination. His discoveries have challenged over 100 years of accepted thought and we now see water security and treatment in a completely different light, enabling us to reduce diseases caused by contaminated water.



Janis Grundspenkis

As a scientist, Professor Grundspenkis' main contributions have been to establish a structural modelling approach for complex heterogeneous technical systems to solve problems of model synthesis and analysis. He has additionally developed intelligent tutoring and knowledge assessment systems. In 2010 he received the Honorary Diploma from the Latvian Ministry of Education and Science for the training of young scientists which is one of his many awards.



Guntis Kulikovskis

Guntis Kulikovskis holds a PhD in Theoretical and Applied Mechanics; he is a mechanical engineer with a huge interest in robotic systems. As a Head of the RTU Design Factory, he is bringing industry and the university together to spur product development and innovation. Last year, for example, RTU's Design Factory and scientists developed a unique water treatment system as well as an electronic device for a smart sock. He and his team have already secured nine national patents and two international patent applications.



Janis Krastins

Professor Krastins is an Academician of the Latvian Academy of Sciences; he has a prolific record as a professor, researcher, project leader and author in the field of architecture. His portfolio includes the design and/or restoration of numerous buildings in Riga and all over Latvia. Professor Krastins has also conducted research into the value of historical buildings and published his results, including highly praised monographs on Art Nouveau in Riga and Liepaja.



Maris Turks

Full member of the Latvian Academy of Sciences since 2014 and winner of the "Gustavs Vanags" Prize (in Chemistry) this year, Professor Turks leads prolific research into multiple fields of organic synthesis, which has resulted in several patents and pharmaceutical-driven scientific publications. The novel methods used by Prof. Turks and his students are bringing about exciting progress in fields ranging from fluorescent sensors to anti-inflammatory, antibiotic and anti-cancer agents.



Oskars Krievs

As a leading Researcher at the Institute of Industrial Electronics and Electrical Engineering, Professor Krievs has participated in over 25 projects in the field of power electronics, power flow control and renewables. His work in power filters won the excellence reward of Siemens Latvia. He took part in creating the first hydrogen fuel cell powered electrical kart in Latvia, and is already the author of five national patents.



Igors Tipans

Author of more than 100 scientific and methodological publications in mechanics and teaching of mechanics and one of the founders of "Baltic International Center for Human Education", Professor Tipans' experience spans a 40-year career at RTU. In addition to his prolific research in modelling biological systems, he has taught mechanics-related courses to over 7,000 local and international students. He has furthermore managed the study process in Latvia for 1600 international students from 73 countries.



Kaspars Kalnins

Professor Kaspars Kalnins leads RTU's testing facilities in advanced composite structures, seeking greater efficiency in product design. His team has built prototypes for major partners such as Airbus and Volvo, while research collaboration has extended beyond Latvian companies to international institutes like German Aerospace. His highly original projects for students and schoolchildren motivate them to innovation in technology and design.



Riga Technical University Faculty of Architecture and Urban Planning



Drawing Room at the RTU Faculty of Architecture and Urban Planning



Riga Technical University Laboratory at Lab House



National Library of Latvia



Old Riga



The Gulf of Riga

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By 3 October

For more information visit:

www.wcc2016.rtu.lv

For further information on the
World Cultural Council visit:

www.consejoculturalmundial.org

Read more about

Riga Technical University at:

www.rtu.lv/en