




GEDC/2019 SANTIAGO CHILE

Engineering minds, hearts and hands:
Impact with a purpose

Hosted by:

Escuela de Ingeniería
Pontificia Universidad
Católica de Chile

www.gedc2019.org | 20-23 October 2019



A message from the **GEDC2019** host

Welcome to our University and country!

We are very excited to be the hosts of such an important event that will get together, in Latin America, engineering leaders worldwide.

This is the 11th Global Engineering Deans Council (GEDC2019) conference, and we are deeply committed to make this event an experience for you, taking advantage of the interesting local geographic and cultural setting. During the event, we will discuss how to move our institutions forward, motivated by our purpose to contribute to a more equitable, inclusive, and sustainable development of our countries and societies. Engineering schools play a key role in the creation and progress of knowledge, but also in influencing society through innovation and entrepreneurship, the true engines for development. Furthermore, we foresee that engineering will play an increasingly important and significant role in the way society and people will deal and interact with technology in the future. This is the reason of the conference motto, "Engineering minds, hearts and hands: Impact with a purpose". It conveys the importance of connecting the traditionally well-developed left side of our brains with our right side, bringing various dimensions of creativity, emotions, and the capacity to mobilize people into action.

Every year, the GEDC conference generates a unique space and opportunity to share front end experiences, challenges, and learnings. Aimed not only at a strong international community of engineering schools, but also as a true source of ideas for continuous improvement of our schools and universities. This year we will follow a very active and participative methodology with only a few keynote presentations to motivate discussion and deliberation.

I would like to thank the members of the executive committee and the leading team of GEDC, who trusted in the proposal of PUC Engineering. We will do our best effort in making this meeting a very effective investment of time and resources, hoping in an enjoyable, pleasant time for all of you in our country. As dean of PUC Engineering, I look forward to receive you, share, and live this great experience together.

With Warmest Regards,
Juan Carlos de la Llera M.
Dean

GEDC/2019 SANTIAGO CHILE

20 - 23 October 2019 | Santiago, Chile
Hotel Santiago
operated by Mandarin Oriental Hotel Group

The Global Engineering Deans Council (GEDC)'s vision is to enhance the capabilities of engineering deans to transform their institutions in support of societies in a global economy. Its mission is to serve as a global network of engineering deans, and to leverage on the collective strengths, for the advancement of engineering education, research, and knowledge transfer to society. This network includes over 500 leaders and stakeholders representing over 40 countries from all continents.

At the GEDC 2019 Conference in Santiago, Chile, we will bring together engineering leaders from all over the world to address the way this discipline can make a meaningful impact in our societies. The conference motto is **"Engineering minds, hearts and hands: Impact with a purpose"**. There will be a special emphasis in the integration of more comprehensive views of knowledge, from the humanities and social sciences to our more conventional approaches in the natural sciences and engineering.

The conference will create important discussion through workshops and plenary sessions regarding three main subjects, which are all interdependent.

Transforming Society through Engineering

Although the role of Engineering in human history has been large and decisive, we can certainly say that it will be even larger in the future. Everything is currently being transformed by technology, and in most cases, positively transformed. Engineers are trained and prepared to imagine, propose, and implement significant changes in our living conditions. Therefore, it is critical that such development comes with a more comprehensive understanding of the current dynamics in society, which are becoming quite challenging.

To transform our society in positive terms, Engineering and engineers must develop and master other languages beyond those of science and technology. More inclusive languages that care about the wellbeing of people and the public good. Indeed, our true measure of success is no other than generate impact by transferring our limited resources from less valued human activities into others of greater value for people and society. Engineering has a great responsibility in this well-known creative deconstruction process through advancing research and innovation in relevant areas to address local, regional, and global concerns. A special focus in this GEDC conference will be placed in interdisciplinary challenges of sustainability, critical to Latin America and elsewhere, such as resilience to natural hazards, health, energy, water, and food.

Skill Diversity for a Better Engineering

Engineering is a discipline historically considered to attract the best talented people in math, science, and technology. It seems relevant to discuss how to project a promising future for engineering by attracting also skills that we do not find in the usual student profile, and who may not be brilliant performers in standardized tests and other highly selective mechanisms. Although we are all part (and sometimes proud) of this historical selection process, there is little doubt that more diversity will imply more talent.

The gender issue, an endemic concern in the admission of most engineering, math, and science students in the world, leads finally to a fatal disadvantage for most STEM disciplines. Larger diversity in engineering schools, with no name attached to it, is an urgent need to remain as a discipline that appeals to the best of human talent. We would like to see that the focus of the GEDC discussion includes, of course, the motivation and hurdles of women into STEM careers. It should also involve a more precise, broad definition of the talents we should be looking for today in our engineering schools.

A natural first step is to improve effective mechanisms of inclusion to attract students from different cultural, geographical, socioeconomic backgrounds and help them become successful.

However, another relevant question is to identify what type of talent will be required soon in addition to the highly, praised stereotype of the fast deductive thinker. The revolution of new engineering disciplines to respond to various human interests and concerns will also shape these new requirements for engineering talent, and we would like to anticipate this future discussion during GEDC 2019.

Courageous, Entrepreneurial Engineers

How prepared are our engineering schools to teach new engineers, courageous enough to think differently and dare to challenge the limits of knowledge, technology, and society in general? Do our internal curricular and incentive structures favor this kind of thinking, attitude, and skills? Becoming an engineer is different depending upon the cultural, economic, geopolitical, and social contexts we all live in. There is no question on how important it has been for society the entrepreneurial minds of engineers who pushed the limits of human imagination and abilities throughout history. Does the academic severity of our discipline encourage the entrepreneurial skills of our students? Can we do both?

Entrepreneurs need to deal constantly with uncertainty, and be able to take some risks. At the same time, pursue their dreams, develop leadership skills, think out of the box, and often combine both hemispheres of their brain. Usually they fail in the process, and because of that become resilient. They are a great

example to others who attend higher education. Societies and colleges have completely overlooked the power and role of students while in the process of their education as agents of change to their own schools and societies. It is a period in which their minds are literally exploding in capacity, creativity, and will. A fertile ground to plant the seeds of a courageous attitude toward life in general, but primarily into engineering practice.

Engineering students can truly change the world in many ways; they do not have to wait too much to do it. The aim for GEDC 2019 is to discuss how can we encourage them to think big, find the inspiration to aim high in understanding and solving global concerns, and to get involved at a young age with the public good.

Pontificia Universidad Católica de Chile

The level achieved by several academic institutions in Chile has made it an attractive country to visit, to study and to carry out research. There has been a steady increase in the influx of international students and academic mobility in and out of Chile's higher education institutions.

Chile has a number of natural laboratories and a large increase in domestic and foreign investment in science and technology. Moreover, there has been important stimulation in innovation, with joint work between the public and private sectors. Also, increasing advanced human capital through research, is something universities, especially Pontificia Universidad Católica de Chile (PUC), take very seriously.

PUC's mission is to reach excellence in the creation and transference of knowledge and educational training of people. Over 130 years, its values can be seen in our graduates, who have been educated to lead in several realms of the country. The QS Latin America University Rankings 2018 placed PUC as the top ranked university in Latin America, and 132nd worldwide.

PUC is well known for its organizational abilities, the excellence of its academic staff, and the extraordinary quality of its students. At the same time, it has acquired international reputation for its benefits and scholarships. These have generated a strong demand among national and international students.

The University's leadership in research and graduate programs has quite a considerable influence in the scientific community in Chile as well as Latin America. Research is carried out in all fields within the university, which has 35 PhDs covering a wide range from the Arts and Humanities to the Sciences and Technology. The over 4,000 students enrolled in graduate programs come primarily from Chile and the rest of Latin America. Over 20 percent of our graduate students are international and come from 32 countries. PUC has more than 800 ongoing research projects, and publishes annually almost 2,000 articles in top quality journals indexed in Web of Science. These research activities at PUC create a stimulating educational and intellectual environment.

PUC is an internationally recognized institution, which aims to carry out research with global impact. In order to do so, it works in strong partnerships with several other universities across the globe. With over 13 hundred Ph.Ds graduated from PUC, and its continuous commitment to the pursue of excellence, our university seeks to help create a critical mass of professionals and researchers in Chile who shift the country's economy from one based on natural resources to one based on knowledge and innovation.

School of Engineering

In its 127 years of history, this school has trained over 13 thousand highly skilled professionals, which have created strong national impact working as social leaders, researchers, entrepreneurs and innovators in technology and science.

This School plays and will play, a main role in driving Chile's future economic and societal development. Besides our strong commitment with a more inclusive and equitable society, the School of Engineering aims to generate pioneering applied research that places us as a relevant global player with many schools around the world, by pushing together the boundaries of knowledge and creating effective solutions that improve people's life conditions. Is this double and simultaneous vision, towards the inside and outside of the country, which is the current driver of the development of our school. Engineering schools in Latin America need to take this very seriously and do their best to be part of the global game in research and technological development. The skills and talents in our continent are present as they are anywhere else in the world, and we have no justification to not devote them in favor of humankind. It is just a matter of priorities and focus.

We plan to become an open innovation hub built from science and technology for the university, the country, and hopefully the region. And we want to do it with other engineering schools in the world, because we know everyone is needed in order to tackle global shared concerns. If such was not the case, the world would have already solved the many pending critical issues that still affect so many children, communities, and inhumane living conditions of so many. By means of becoming creators of applied knowledge, and articulate it effectively with the most urgent needs and problems of our society, we hope to do our share of the effort we all have to make to eradicate extreme poverty conditions in the world, and provide hope and access to basic human rights to those who live in marginal and critical conditions, which have always been in the center of the caring minds, hearts and hands of an engineer.

Venue:
Hotel Santiago

One of the most exciting hotels in South America, Santiago Hotel operated by Mandarin Oriental Hotel Group enjoys a high reputation for style, service and outstanding facilities. Located in the exclusive neighborhood of Las Condes, and with a range of award-winning restaurants, beautiful rooms and an outdoor pool, it can be a perfect choice for you to stay in Santiago.

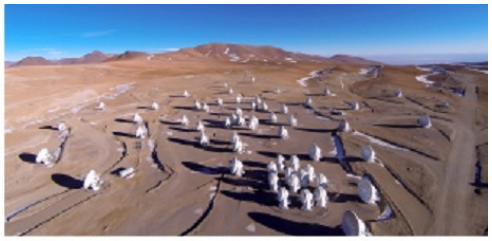
Check the event webpage for different hotel options, including a variety of budgets. All hotels within walking distance from the Venue.

PRELIMINARY PROGRAM

OCTOBER 2019

SUNDAY T20	MONDAY 21	TUESDAY 22	WEDNESDAY 23	THURSDAY 24	FRIDAY 25
	Opening ceremony	Conference picture	Plenary session	Day visits/ Santiago/ Trips in Chile	Day visits/ Santiago/ Trips in Chile
	Plenary session	Plenary session	WP-5		
	WP-1	WP-3			
Conference Registration	Plenary session	Plenary session	Plenary session		
	WP-2	WP-4	WP-6		
Reception at the University	Welcome Dinner	GEDC Airbus Diversity Award Gala	Closing ceremony (and wine tasting)		

This is a tentative program, for the up to date version visit the event webpage.



Technical Visits

The Conference Organization team is preparing technical visits that will be updated frequently in the webpage of the event. These visits will have a separate registration process, limited spots and possibly an additional cost. Some of the confirmed visits are:

Visit to El Teniente.
Located in Machalí, 50 km away from Rancagua and 2 hours away from Santiago, El Teniente is the world's biggest underground copper deposit. This is the southernmost mine owned by the state owned company COLDELCO. It began to be exploited in 1905 and already has more than 3.000 kilometers of underground galleries. A city within a mountain.

Visit to Paranal Observatory.
Located at 120km south of Antofagasta city, in the Atacama Desert, Paranal is the home of the ESO Very Large Telescope (VLT). The VLT has stimulated a new age of discoveries, with several notable scientific firsts, including the first image of an extrasolar planet, tracking individual stars moving around the supermassive black hole at the center of the Milky Way, and observing the afterglow of the furthest known Gamma-Ray Burst.

Visit to ALMA observatory.

ALMA Observatory is an international astronomical facility located in the Atacama Desert, 45 minutes away from San Pedro de Atacama, in one of the highest and driest places on Earth. ALMA operates the largest radio telescope in the world, composed by 66 high-precision antennas, in order to study the light of some of the coldest objects of the universe. This achievement is the result of an international association between Europe (ESO), North America (NRAO) and East Asia (NAOJ), in collaboration with the Republic of Chile.

Conference Registration

GEDC Member

Early Bird (through August 20)	USD 695
Regular (after August 20 - October 20)	USD 795

Non Member

Early Bird (through August 20)	USD 790
Regular (after August 20 - October 20)	USD 890

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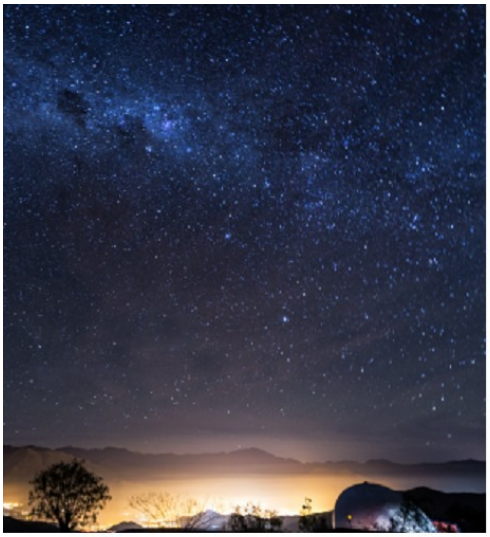

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