IT'S ON

The future of higher
education starts now

Challenging conventional thinking

13 UNIVERSITIES

FOREWORD

LEAD THE CHANGE

As we entered 2020, European citizens have never been so technologically advanced, knowledgeable and healthy as any generations before. At the same time, these citizens are facing profound challenges which cannot be tackled by individuals. Therefore, we started working on a joint European University: the ECIU University. This is more than just a nice project: we are united by a common belief that the only way to solve these common big challenges is by tackling them in cocreation with our societal and industry partners.

In 2030, students and life-long learners will study and work together in finding solutions for future challenges. They will have the unique opportunity and freedom to pick from an abundant set of relevant micro courses offered by universities and companies across Europe. Artificial Intelligence systems will support the learners in matching their competences and passions with educational content.

In the ECIU University, learners and employees will join teams upon their intrinsic motivation and competences. They will work together at different international locations via telepresence. At the same time, our learners will be inspired by our unique campus and research facilities. Our flexible educational offer will incentivize our learners to come back throughout their lifetime to deepen their knowledge, shape their competences and keep challenging themselves.

ECIU member universities are known and recognized for their innovative approaches in learning, teaching, research and innovation. We have always collaborated with our surroundings and with the ECIU University we have the brave ambition to lift this up to the European level. ECIU University unites an impressive amount of research capacity, infra structure, partnerships and talents. The biggest challenge is to use this potential and to get the organizations to work together on all levels.

We do that, as characterized in our DNA, in an entrepreneurial and ambitious way and together with our surroundings. Setting up a new European University should be seen as a collective start up; where we try out new activities, experiment with innovation and challenge ourselves. We co-create our future. A brave endeavor which will be difficult at moments and some innovations we try out might fail. But ECIU is par excellence a group of universities which will never stop pioneering and will lead the change, because we know by experience that solving challenges is about challenging ourselves as well.

ECIU University - It's on.

Sander Lotze,
Project Director ECIU University

Aalborg University	Universitat Autònoma de Barcelona	Tampere University	Kaunas University of Technology	University of Twente	Tecnológico de Monterrey	University of Trento
01	**03**	**05**	**07**	**09**	**11**	**13**
	02	**04**	**06**	**08**	**10**	**12**
	Linköping University	Dublin City University	University of Aveiro	INSA Group	Hamburg University of Technology	University of Stavanger

7 THEMES

Science · Innovation · Entrepreneurship · Cooperation · Mobility · Education · Regional development

u today

'This is our opportunity to radically innovate our education'

The world is changing at a rapid pace and education is not an exception. 'We can't just lean back. We need to stay ahead of the game,' says Olga Wessels, Head of ECIU Brussels Office. She explains why she believes that the European Universities Initiative, and the ECIU University in particular, are the way forward.

In your opinion, why is it important to create European Universities?
Wessels: 'There is so much good in the idea of universities working closely together. The world is facing many challenges and these challenges don't care about country borders. We need to work together to tackle them and universities have a key role to play. Universities are the centers of knowledge, there is a lot of expertise and bright minds. ECIU University will bring this expertise closer together and reach-out to society to connect to real-life issues. ECIU is not a new alliance. We have been working together for more than twenty years and the network has made every member university stronger. We share expertise, experience and implement each other's best practices. The ECIU University is a perfect opportunity to step-up our collaborations.'

What should be the main characteristics and objectives of European Universities?
'According to the European Commission, there are three main characteristics. Firstly, European Universities are alliances of partner institutions across Europe that are based on a joint, long-term strategy. Alliances need institutional commitment from the highest level to every faculty and department. Secondly, there should be joint curricula delivered and 50% student mobility. Lastly, European Universities should work towards a European degree, jointly offered by the alliance partners. So students would not get a degree from one specific university but from the entire alliance. This is our opportunity to radically innovate education. We need to do that in order to stay relevant in the future.'

Does the ECIU University have any unique characteristics that set it aside from other European Universities?
'Of course, I think we are the best out of the seventeen funded universities. I'm very happy to work for ECIU. We have a super clear brand. We are the challenged-based university with a clear focus on the Sustainable Development Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. We are making education more flexible. A degree is no longer that important. It is about tackling societal challenges that you also personally find important and interesting. At the ECIU University, you can build your own learning path. We are at the forefront of innovation. And we have a big advantage. We are not new kids on the block. We have collaborated for more than two decades. Now we just need to step up our ambition, but we already have trust among our partners and we know each other, which helps to deliver on our ambitions.'

How can we make sure that the ECIU University and other European Universities are a success?
'I believe there are three keys to a successful European University. To start with, we need support from Europe and its member states. We are very bold in innovating education, but we need the national governments to be bold as well, to support us in getting accreditation and so on. And we need them to move fast, because we are moving very fast. Secondly, European

Text
Michaela Nesvarova
Photo
Jean-Yves Limet

Universities are perfectly placed to create a strong European research area. We need European support for research collaborations. Lastly, we need clarity. We are running a pilot but we can't use students as test cases – because regular educational programmes last at least four years, while we only have three years in the pilot. The European Commission has our a long-term commitment, but we need the same from them.

Do you believe this represents the future of education?
'Yes, I honestly do. The European Universities' Initative is a prestigious and revolutionary EU initative, with a lot of political attention and a relatively big budget of €5 million euro per funded alliance. It is really an honour to be part of this EU higher education revolution as ECIU. In twenty years, universities will need to be super international and connected with their partners. Education will change drastically. We can't just sit around. We need to adapt. This is the way forward.'

Concept of a European University explained

'We will future-proof our students'

Professor Brian MacCraith, President of Dublin City University, and Eugenijus Valatka, Rector of Kaunas University of Technology, strongly believe in the concept of a European University. The two board members talk about co-creation, impact and the future of higher education.

Brian MacCraith

Eugenijus Valatka

'This is a very exciting project, because we are working towards the future of higher education,' Brian MacCraith says. 'As a consortium of universities, we have identified core elements that we think are important to shape the university of tomorrow based on components like challenge-based learning, student mobility, micro-credentials and life-long learning.'

The DCU President firmly believes that these ingredients will help ECIU to shape a new model of higher education. 'By doing so, we will future-proof our graduates who will be ready to work on the complex issues of today and tomorrow. With challenge-based learning, we invite social and industry partners to contribute to our research and education by articulating problem statements from their domains, so that our students get involved in real-life dilemmas and challenges.'

Valatka adds: 'Keeping in mind all of

Europe's expertise, innovation capacity and creativity, the European Universities can have a significant impact globally. The greatest challenges, such as climate crisis, technological breakthroughs and democratic issues, are not confined by the borders of any country or any region. Challenges are complex and common. We cannot solve them separately. We need to work together, even closer and in such a way, we have not worked before.'

'Every step along the way will be a milestone'

That is exactly what the ECIU University is all about, confirms MacCraith. 'The European University model, with its focus on mobility and European integration, provides a great opportunity for us and for our students to stay in the center of European culture. As ECIU universities, we all believe international cooperation is extremely important.'

Valatka: 'Cocreation must be activated at national and regional levels. As the President of Lithuanian University Rectors' Conference, I speak for the most of higher education institutions in Lithuania. I urge to work together closely, more than ever. This means co-working as education institutions, but also with national governments, regional and municipal institutions, industry and society at large. This way we will provide the required catalyst for education to stay relevant and to enable innovation.'

MacCraith: 'The kick-off of the ECIU University and the support of the European Union is already a success in itself. Of course, over the next three years we will hit complexities in developing the governance but that is to be expected in an ambitious pilot programme such as this. But the goal is clear: to establish and embed a standard model for the European University of the future. And every step along the way will be a milestone.'

Europe's
point of view

Vanessa Debiais-Sainton is Head of the Unit in charge of Higher Education policies and programme at the European Commission's Directorate General for Education, Youth, Sport and Culture. The unit is the lead service for European policies on reform and modernisation of higher education and the new European Universities initiative.

Vanessa Debiais-Sainton

'Europe and the world are facing unparalleled environmental, technological and societal transitions,' says Debiais-Sainton. 'This requires a smart transformation of our higher education institutions to empower people to address these big societal challenges.' The European Commission sees universities as real game-changers. 'They bring together the excellence existing in different parts of Europe and in different types of higher education institutions. By pooling together what they do best, these European Universities will increase their attractiveness and competitiveness on a worldwide scene.'

Co-create
Debiais-Sainton expects the European Universities to develop a shared and common strategy for education and, where relevant, for research and innovation. 'The objective is to empower students to be the actors of their own learning experience, by choosing what, where and when to learn within a sound and guided European curriculum, supported by the new technologies available. Another essential characteristic is the implementation of a challenge-based approach, by bringing together students from different countries and different disciplines to co-create, together with academics, researchers and local companies, solutions to the biggest challenges of our time.'

'Impressed'
According to her, the ECIU University fits this profile very well. 'I am impressed by the originality and level of ambition of your ground-breaking vision. Allowing each student to define their own learning path will undoubtedly empower them, boost their confidence and self-esteem and make them become active and engaged citizens that can each contribute to society in a unique way. I also see a great potential in your micro-credentials model to allow professionals to enhance their skills when needed and hence contributing to a smart upskill and re-skill of the Europe´s workforce. And I appreciate your challenge-based approach with strong links to the United Nations Sustainable Development Goals. For me, this is exactly what the universities of the future should be about, playing an active role in positively shaping our future world.'

Challenge-based ECIU University is born

Thursday, 7th of November 2019, saw the launch of the ECIU University, the first European University where learners and researchers cooperate with cities and businesses to solve real-life challenges.

Celebrating the status of European University given by the EU, 13 members of the European Consortium of Innovative Universities (ECIU) met in Barcelona to mark the official beginning of their innovative university model. This first joint meeting represents the first step in defining the objectives and ambitions of the university. The official kick-off was hosted by Universitat Autònoma de Barcelona.

The evening before the official signature session, the launch of ECIU University was ushered in with a meeting at the Casa Convalescència, part of the Hospital of Santa Creu i Sant Pau. In the scenery of this historical building, Màrius Martínez, Vice Rector for International Relations at UAB, kicked off the launch event. Margarita Arboix, Rector of the Universitat Autònoma de Barcelona, welcomed everyone with an opening speech. To finish, the floor was given to the president of ECIU, Victor van der Chijs. Afterwards, drinks and bites were served to toast the birth of ECIU University.

Text
Sandra Pool
Photos
Juanma Peláez

A university with societal stakeholders on board

Text
Rense Kuipers

The ECIU University is not shy in taking a novel approach to its board. Not only board members of all the member universities call the shots, seven so-called societal stakeholders also take up a pivotal role on the board. According to ECIU President, Victor van der Chijs, the new university wants 'to be fully open to society's questions and expectations.'

Victor van der Chijs

How is the board of ECIU University set up?

'Besides the rectors or presidents of the member universities, we also have non-academic members on the board, including people from industry, a social entrepreneur, two students and a local mayor. It's not that they have a mere advisory function, they are an integral part of this board.'

Why is it so important to have them on the board?

'In this pilot phase of ECIU University, we cluster our efforts around one UN Sustainable Development Goal: to make cities and human settlements inclusive, safe, resilient and sustainable. Through challenge-based learning we are working towards achieving that goal. We think this is the right way to deliver on society's expectations. Our societal stakeholders play an important role in that regard. It's not up to us as universities to decide what society needs, we think it's supposed to be the other way around.'

How does it work in practice?

'I have to admit: we have a big group.

If you count all the board members and advisors, we already had a group of about forty people attending the first board meeting. To me, this already shows the success of this concept and dedication of everyone involved. With that many people at the conference table, it's important to ensure that everyone has the freedom and space to have their say and that everyone is heard equally. I believe it adds to the quality of the discussions. Still, to be both decisive and effective, we can't all be fully immersed in everything with such a large consortium. So a lot of it boils down to trust. Luckily, at ECIU, we've known each other for quite a long time, so the trust is there. Now we're entering an interesting new phase in which we can experiment with a new type of university for the next three years.'

Is everyone ready for this experiment?

'We all know we're taking an exceptionally exciting step with our approach for a European University. It's like we're building a house together, with

everyone having their own particular set of skills and tools. All the while knowing that the concept isn't set in stone. This process requires constant attention, sharing of best practices and continuous collaboration. But I can honestly say the foundation – the commitment and shared vision – is in place. Not only for the upcoming three years, but also for at least the seven years after. We're in it for the long haul. After this three-year pilot, we want to be known as one of the leading consortia who can shape the future of education in Europe.'

> 'We want to be known as one of the leading consortia who can shape the future of education in Europe'

'I can't wait to share my experience'

Petra Vorsteher is one of the so-called societal stakeholders who are part of the ECIU University external board. She is a pioneer in the mobile industry, a Silicon Valley veteran and the international ambassador of the Hamburg University of Technology.

Petra Vorsteher

'The main reason I'm excited to be part of this board, is that I truly believe in this new educational model,' Vorsteher begins. 'This is the future of education and I want to help ECIU shape that future with this university. And it's necessary, believe me. If you look at education and research, especially in the field of artificial intelligence, the USA has the gold medal and China has the silver medal. After that, there's a big gap. I even dare to say there isn't even a bronze medal yet...'

'... Still, I do believe Europe has a big chance to not only get that bronze medal, but to push on to win gold. But we can only do it in collaboration. Through trust and by sharing knowledge and experience. To me, ECIU has already proven that this works. It was developed in an agile way, with regional universities operating on a European scale.'

According to Vorsteher the next step is ECIU University. 'I believe the ingredients to make this project a major success are in place. Using online courses and microcredits as a new recognition of learning are a real improvement over the very old model of getting a degree and that just being it. I think the true power of ECIU lies in the combination of having a strong network and forms of both online and offline education.'

'Ingredients to make this project a major success are in place'

To get this project off the ground, Vorsteher thinks it is important to get the message out and to get people to visit each other and share. Everyone in all the organisations will need to embrace this project and realise that this creates societal impact. Once people start realising how impactful this new way of working is, they will understand and will want to become part of it.'

'I'm so excited to bring my own expertise into this. I've been working in Silicon Valley since 1981. So I'm used to working locally but always having an international impact for the companies I've been working with. My expertise lies in having a local focus, but working internationally. That's always been part of my life. And I see many similarities between my background and the plans of ECIU University. I can't wait to share my experience.'

In a nutshell:

• Vorsteher has over 30 years of business experience in the US, Europe and Asia and has been working in Silicon Valley since 1981.

• In 2005, she was one of the first women globally to co-found a mobile company. This company, called Smaato, grew to become one of the largest independent mobile companies in the world.

'I want to be the student rights advocate'

**Magne Bartlett,
student at the University of Stavanger**

'The University of Stavanger asked me to be one of the student board members of ECIU University. Besides this being a very interesting learning experience for me, I've always been a big advocate for more integration of Norway and Europe. In my opinion, anything that can contribute to that, is a worthy cause to commit to. My motivation stems from making an impact. I did that first on a local level, followed by a regional, national and now on a European level.'

'I think that the concept of microcredits can be a good business model for this European university. In Norway, education is freely accessible, and I see a lot of universities offering courses to businesses and their employees under their own local umbrella. Imagine what you can do on a European level...'

'My primary objective is to make sure that all students are able to participate in one way or another, there should be no boundaries. Student rights should be front and centre, also when it comes to microcredits. I want to be the advocate for those rights.'

In a nutshell:

• Bartlett has over ten years of board experience. Including, but not limited to: representative in the student parliament of both the University of Agder and the University of Stavanger, member of the central board in the Norwegian Union of Students and student representative at the University of Stavanger's executive board.

• Bartlett wrote his bachelor thesis in the 4th semester, freeing up his entire 3rd year for a specialization in international relations, diplomacy and military history at the Hawaii Pacific University.

'We run different cities, but face the same challenges'

**Onno van Veldhuizen,
mayor of Enschede**

'All good ideas are born and implemented in a city. So if you are looking for societal impact, cities are the right place. That's why, as the mayor of Enschede, I'm very excited to be part of the ECIU board. Having a university in your city of knowledge is crucial. I am seeing that the solid borders between city and university of the past are becoming a more permeable membrane. Which, to me, is a promising development.'

'The educational concept of the ECIU University is also promising in that regard. It's something different than what we are used to. Nowadays, when students have reached their mid-twenties and graduated, they get a diploma and that's it. It's like a ready-made suit. What we need, however, is a tailor-made suit that grows with you. That's a suit that is fit for the future of education and society.'

'What mark I want to leave as a board member? I think it's important to start by being modest and seeing and listening where the energy goes in such a large consortium. What I already suggested is a meeting with all the mayors of all the ECIU cities. We run different cities, but face the same challenges. Be it in open data, internet of things and drones that will be taking up the airspace above our cities. We can collaborate to face these challenges head on.'

In a nutshell:

• In 1999, Onno van Veldhuizen became mayor of the municipality of Nieuwkoop. He was the youngest mayor of the Netherlands at that time, at age 36.

• He has been mayor of Enschede since 2015.

• Onno van Veldhuizen is also chairman of the MONT Urban Network, which consists of the cities of Münster, Osnabrück and the network city of Twente.

Who else is on the board? Please meet:

Augustinas Laimonas Bytautas

holds a Bachelor Degree in New Media Language of Kaunas University of Technology (KTU). He has had several project management positions in student committees or councils and in committees in a higher education institutions. He is a council member in the Lithuanian Students' Union.

He has developed his critical thinking in the university Rectorate where he presents and defends the interests of students. He also has good negotiation skills developed in his position as a student leader.

Bytautas has experience in local project management. He has worked as an assistant for Erasmus+ and as a project manager in KTU Student's association and KTU student organizations.

Isabel Damasceno Vieira de Campos Costa

is President of Coordination Commission for the Regional Development of the Central Region of Portugal (CCDRC), a public service role with responsibility to coordinate the environmental and territorial policies and services of the region while supporting local authorities and associations.

As President of CCDRC, she has particular responsibilities for the application and management of regional funds. She has held many roles, including as an elected official, in service to the municipalities of the region and in other areas of Portugal, such as Mayor of the city of Leiria from 1998 to 2009. Isabel Damasceno Vieira de Campos Costa has a degree in Economics from the University of Coimbra Portugal.

Daniele Finocchiaro

Is chairman of the Research and Innovation Committee at Confindustria, the Italian Employers' Federation.

Finocchiaro has more than twenty years of experience in the pharmaceutical industry, he was chairman and general manager of GlaxoSmithKline Italy, the largest pharmaceutical company in the country. He held several management positions in the main organizations of the sector, as vice president of Farmindustria and of Confindustria Verona, and as president of the chemical-pharmaceutical section of Confindustria Verona. He has been appointed by the Local Government as President of the Board of Directors of the University of Trento.

He holds a degree in International economics from Bocconi University in Milan and a Master's degree in Health economics from Tor Vergata University in Rome. He spent a year at the J. Nehru University in New Delhi, India, to carry out studies on the country's economy.

Ángeles Guiteras

Is the executive manager of Asociación Bienestar y Desarrollo (ABD) in Barcelona since 2000 and runs numerous projects and activities for people in vulnerable situations.

ABD is a NGO created in the 1980's and declared to be of public interest. It develops projects, services and programs that try to give an answer to vulnerable situations, which can lead to social exclusion. Currently ABD manages more than 70 services and projects that involve more than 100.000 people with a team of over 2.000 workers and 440 volunteers.

Ángeles Guiteras is also a lecturer in the Master's program on drug addiction at the Faculty of Pscychology at the University of Barcelona.

From left to right

Daniele Finocchiaro, Magne Bartlett, Augustinas Laimonas Bytautas, Onno van Veldhuizen, Petra Vorsteher and Bernat Jiménez de Cisneros (City of Barcelona, guest/speaker at the ECIU University Board meeting)

'Challenges are like Matroesjka's'

Using so-called Social Quest Events, ECIU University brings the outside world inside. In this way, they hope to nourish education and research with inspiring challenges. The first edition was held in February in Linköping. Ten parties pitched a total of thirty challenges related to Sustainable Development Goal 11.

The last word is far from being spoken about the very first Social Quest Event (SQE). Ideas sparked by the event continue to roll out. Discussions, too. And questions, of course. And that one question in turn leads to another. 'It's like a Matroesjka, a Russian doll,' people say jokingly. And that's just what it's like. A challenge can be dissected like a series of smaller and smaller nesting dolls. You never finish talking about it.

A glimpse into the problems

This first SQE starts with a series of presentations. Movies, slides and infographics undergo review. Stakeholders have a chat. They are delegates from municipalities, non-governmental organisations and regional development agencies. Quickly, they provide a glimpse into the problems with which they are dealing – as a municipality, as a region or as an innovation hub. Frequently heard terms include stimulating economic growth, energy transition, mobility and digitalisation.

The Östergötland Region kicks things off. This fast-growing region of Sweden, a two hours' drive from Stockholm, is struggling with residents who, for various reasons, do not use digital services. The challenge here? Digital inclusion for all citizens to avoid having these citizens experience a lower degree of service and exclusion from public debate.

Next, it's on to Lithuania. The city of Kaunas would like to be a role model for other learning cities in the country. A strategy is already in place, but a structure for performance evaluation is still needed. Barcelona, also in attendance, is dealing with very different issues, such as a structural shortage of affordable housing for middle- and low-income families. A plan of action has already been developed: the Barcelona Right to Housing Plan. The climate emergency remains an issue. Challenge enough

'Dealing with time and budget'

During the break, Andrea Brose, Head of the Center for Teaching and Learning at Hamburg University of Technology and Svante Gunnarsson, Professor at Linköping University, discuss the first session. Questions such as 'How much time can students spend on a case?' and 'Is there a financial picture behind a challenge?' are mulled over. 'Students must also learn to deal with limitations in terms of both time and budget,' says Gunnarsson.

Andrea Brose explains that challenges can be approached in various ways. 'We can divide them into parts. Group one works on the first part and the next group continues where the first group left off. In that way, you weave things together into a cohesive whole.' She says that a challenge can also take three months or a semester and that gradations can be made in the level. 'From beginner's level to top level and everything in between.'

'How are things going?' Ask Jan Axelsson, the organiser of the event. 'So far, so good. We're hearing and seeing

Text
Sandra Pool
Photo
Myung Hwa Baldini

many similarities. It's good that each participant is telling a bit about the region. That offers an added dimension.' After the break, among other topics, the presentations focus on cruise ships that are docked at the very heart of the city of Stavanger. 'As a municipality, we want to assess ways to collect, open, share and present data and facts about cruise tourism, the ships and the visitors', says Helene Odegaard of the Municipality of Stavanger.

Environmental issues are also discussed in depth. 'How can we measure and verify that local actions have sufficient effect on C02 reduction in an open economy', the city of Linköping wonders. They ponder this question with the goal in mind of becoming a carbon emission neutral city by 2025. 'We're nearly there.'

'Greater cooperation with NGOs'
The Associació Benestar Desenvolupament is an NGO from Spain dedicated to helping the most vulnerable in society. Mònica Plana Izquierdo sets out three challenges relating to access to social housing in emergency and risk situations, energy transition and female poverty reduction strategies. Jan Alexsson is pleased with the arrival of this NGO. 'They have wonderful insight into regional issues. In my opinion, academics should cooperate much more with NGOs.'

Looking back, Wilbert Pontenagel of the University of Twente says that most of the challenges have the same starting point. 'But that the results will be different everywhere.' The keynote that follows given by Sara Gustafsson concurs with that. The Associate

Professor of Linköping University talks about the role of municipalities for sustainable city development. 'Various parties within a municipality are concerned with sustainability. The municipality acts as the anchor around which all sorts of things happen.' Her research shows that it is important to develop approaches that fit the local conditions and have respect for other actors' understanding of 'sustainable development.'

Four tables, four topics
The day concludes with a workshop. At four tables, the participants discuss the topics green mobility, digital inclusion, circular economy and co-creation. 'It's really up to you now', says Jan Axelsson. At the green mobility table, it soon becomes clear that it is all about mobility, the impact on the environment

and regional growth. Questions relate to topics such as the information required. Are all the data available to start to work on a challenge? 'There must be some common information or measuring instruments', says Svante Gunnarsson. 'There are various types of information', says Filipe Teles of the University of Aveiro. These include mathematical models, but it's also about design issues, the political agenda and the sustainable development goals.'
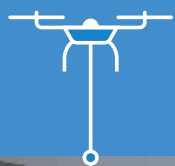
Sander Lotze, project director of ECIU, agrees: 'The content of the challenges is interesting. We still have to talk about the form. Perhaps the students themselves should take part next time?' Fortunately, there are another 32 Society Quest Events on the agenda for the coming years. More than enough time to find the right format.

The model of challenge-based learning

People all around Europe are asking to obtain relevant and state-of-the-art knowledge and skills in order to solve global challenges. Learners, researchers, industry and society can pose challenges on the ECIU University platform where challenges are listed according to the sustainable development goals of the United Nations. In the current pilot phase, the ECIU University focuses on SDG 11: make cities and human settlements inclusive, safe, resilient and sustainable.
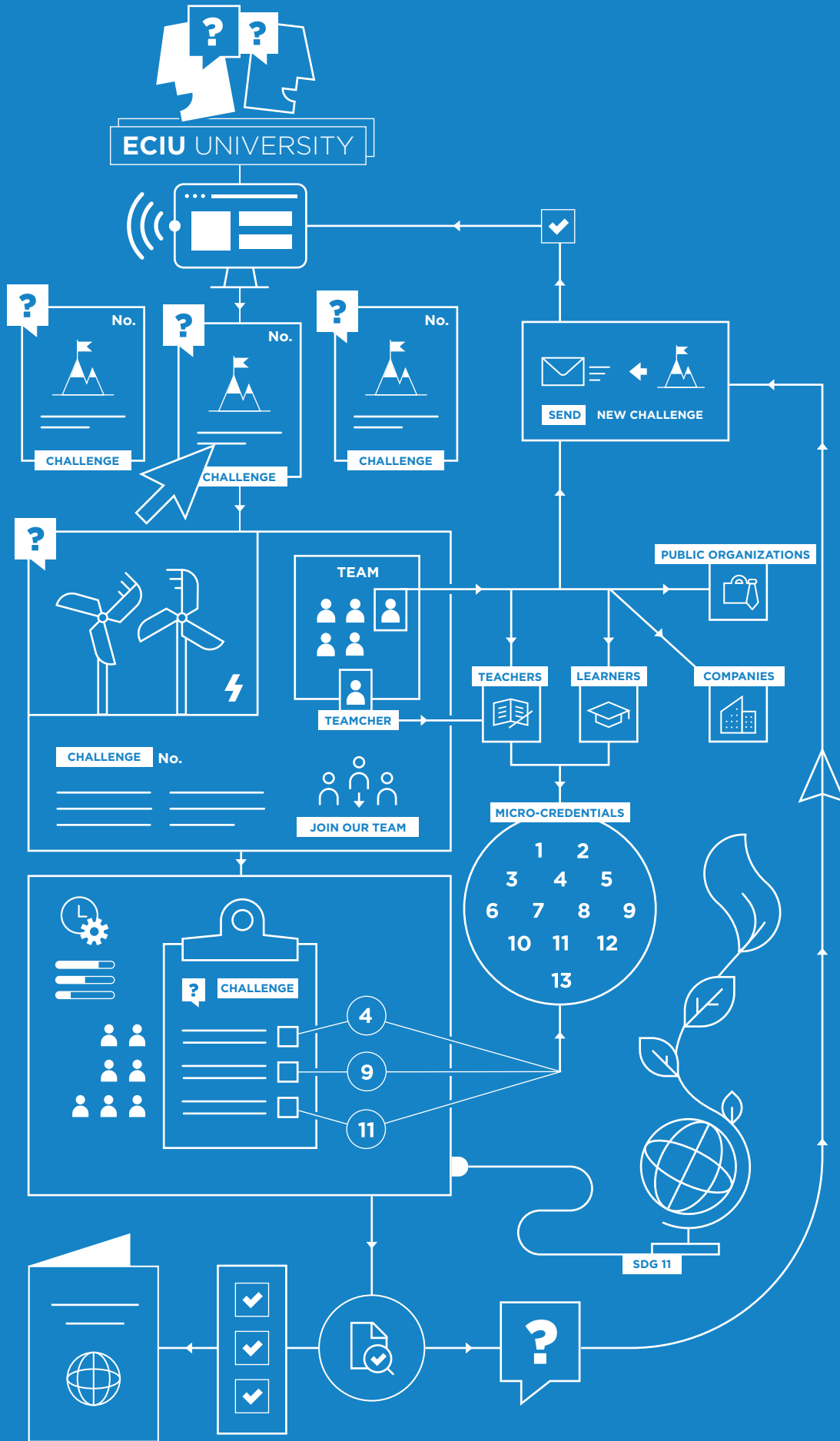
The challenges will be worked out by teams in which learners and employees from industry and society will work together, supported by training teams of teachers.

During the project, the team members notice that they lack certain skills to continue the project. Therefore, they take micro-credentials which are offered by all 13 ECIU universities. They can range from online courses to study packages at a university to summer schools to research projects.

After the successful completion, all learning will be documented in a European competence passport. Micro-credentials, as well as all skills obtained through the project are listed in the passport and can be renewed and complemented at any time. Every challenge ends with a specific outcome, which can be spin-offs, new research questions, new challenges and most importantly a better and more sustainable world.

ECIU UNIVERSITY

CHALLENGE

CHALLENGE

CHALLENGE

SEND NEW CHALLENGE

PUBLIC ORGANIZATIONS

TEAM

TEAMCHER

TEACHERS

LEARNERS

COMPANIES

CHALLENGE No.

JOIN OUR TEAM

MICRO-CREDENTIALS

1	2
3	4	5
6	7	8	9
10	11	12
13

CHALLENGE

4

9

11

SDG 11

'Finding new solutions to real-life problems'

ECIU University places the challenge-based approach at the centre of its pedagogics, research and innovation. Andrea Brose, Head of the Center for Teaching and Learning at Hamburg University of Technology, talks about the added value of this form of education.

Text
Hamburg University of Technology
Kaunas University of Technology

What is challenge-based education?
'Challenge-based education (CBE) puts relevant challenges from real life in the centre of student learning. Using teaching methods similar to the project-based and problem-based learning, this approach motivates students by letting them work in teams on a relevant topic.
'CBE profits from internal motivation and creates opportunities for finding new solutions to real-life problems. Students are in charge of their learning process and it allows teachers and other stakeholders to contribute to lifelong learning. The approach makes a difference and proposes a deep, engaging, meaningful and purposeful way of acquiring and developing the knowledge and skills needed for the future.'

What are the main strengths of this teaching method?
'Students, teachers and the whole community can profit from the work at the university and new collaborations can be developed. The learning process is now seen from both the students' and the facilitators' point of view. That can be a motivating factor for both sides. The framework of teaching is flexible enough to be optimised for different circumstances, so it can be adapted to individual needs.'

What countries have already applied challenge-based education?
'Our affiliated partner, Tec de Monterrey in Mexico, has already introduced this concept to its campus in 2008. Also, challenge-based learning has emerged in Australia, Spain, The Netherlands, Denmark and Germany. At Hamburg University of Technology there are several projects and learning settings close to the idea of CBL, for example our Interdisciplinary Bachelor Project: Open Topic.'

How does this form of education work in practice?
'The approach follows a specific structure, which consists of three main steps: engage, investigate and act. The challenge has to motivate students, here begins the engagement part. When working on the 'Big Idea', for example health or public transportation, engagement is the basis for a satisfying process. All the participants, teachers, students and external partners make sure that they agree on the final question to work on. Investigation makes sure they all are 'on the same page' and contribute with their knowledge and skills concerning the 'Big Idea'. Depending on the circumstances, it could be possible to realise own research during this phase.'

'Action is important because partners can use gained and shared knowledge to actually design and prototype new

We are living in times, where the term challenge has become our everyday reality. The challenges the world is facing today cross national borders and penetrate diverse fields of societal development: environmental protection, sustainable production, healthcare, human rights and many more. The complexity of problems makes it difficult for citizens, businesses and even national institutions to find solutions on their own.

However, the challenges also provide the opportunity for higher education to develop an appropriate educational approach that is constructed to address problems emerging from real-life situations. New learning processes need to make a difference and propose deep, engaging and meaningful way of developing the knowledge and skills for the future.

Adapting its long-standing experience and successful implementation of problem-based learning, ECIU University takes this concept one step further and places the challenge-based approach as a core for its pedagogics, research and innovation.

solutions. The implementation of the prototype and the evaluation is crucial. A final presentation in public makes sure a difference is made. The learning process is transparent for all members of the community.'

How do the Innovation of Education Labs help challenge-based education?
'These are the places where qualified instructors of any level can receive support in how to implement CBE in their classroom. Support begins with creating the learning environment and ends with the assessment phase. ECIU University will set up Innovation of Education Labs at each partner university. The Labs will be physical and virtual spaces where teachers can innovate and implement their teaching ideas, meet peers and share best practices.'

Who can participate in challenge-based education at ECIU University?
'At first, the focus will be on Master-level challenges. Students need to have at least 90 ECTS, if not, a completed bachelor's degree is required. Lifelong learners can also participate in solving the challenge either to obtain a promotion in their work field, to further educate themselves, or because it is needed for the ever increasing pace of change in the work and life.'

Can a challenge-based university become a reality?
'Yes, it can! It just needs a lot of change in the mindset of traditional education. 200 years ago Wilhelm von Humboldt created a university as we have it today. I am not saying that we are the next Humboldtians, but one has to have courage, ideas, energy and persistence.'

'In CBL, the answer is not clear at the end'

Societal stakeholders submit challenges to help structure the curriculum of ECIU University. And, as it turned out after the first Society Quest Event, those challenges come in all shapes and sizes. Thirty challenges have now been pitched. We'd like to present a number of them.

Text
Sandra Pool

Deficit of highly trained staff

Rogério Carlos of Aveiro Inter-municipal Community in Portugal discusses the shortage of highly educated personnel in his region. 'We need a better match between educational offer and labour market. There is a deficit of highly trained staff in several professional areas.' Carlos says that this is a problem throughout the region, in all municipalities. 'So it wasn't difficult to submit a challenge.' He already has ideas on possible ways forward. 'We have to involve the family and not just promote university education to potential students. It's a family matter. We need to get the parents involved in the story, too.' This means that the region has to promote the academic success of the University of Aveiro much more. It also has to increase the quality and quantity of academic results and making the educational offer more attractive and adjusted to the students' expectations.

Bridging Blois and Bourges

The dynamics of a campus stand and fall with good accessibility. The Institut National des Sciences Appliquées Centre Val de Loire lacks a solid connection between two of its campuses, the cities Blois and Bourges. This challenge is about the realisation of a regular transport system in the heart of the Val de Loire. 'There is no direct train and no highway that directly connects Blois and Bourges,' explains Marc Lethiecq of the Institut National des Sciences Appliquées. 'Students and staff need to move from one campus to the other for various events, sometimes on a weekly basis. Proper accessibility is required here to maintain and enhance inter-campus activities' According to Lethiecq, the objective is first to develop regular transport services, at least several times per day in both directions, between Blois and Bourges. 'Eco-friendly, safe and convenient for people to use. Services such as these are also expected to help attract new companies and institutions to settle in the region.'

Boosting user-centred design skills

Nicola Doppio, representative of Hub Innovazione Trentino (HIT) says that his organisation decided to launch an innovation contest: 'Which is aimed at helping small- and medium enterprises (SMEs) to innovate with their digital products, such as mobile apps, web apps or software. We do this with user-experience design talents coming from the University of Trento, as well as from design firms.'

Doppio explains that many SMEs face multiple barriers in engaging in open innovation activities with end users. 'Barriers are primarily the lack of R&D structure and skills and costs. The user-friendly experience of digital products is not optimal because designers are not involved. Our challenge is to help companies to develop and improve their products.'
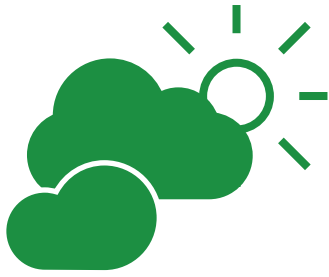
'It is a problem throughout the region, so, it wasn't difficult to submit a challenge'

With the challenges in hand, it is now important for the expert group at ECIU University to arrive at a final definition with which a challenge must comply. According to Andrea Brose, Head of the Center for Teaching and Learning at Hamburg University of Technology, not all proposals immediately lend themselves to education. 'Some issues are more consultative and other proposals deserve to be further explored.' Filipe Teles of the University of Aveiro adds: 'What we need to keep in mind is that, in challenge-based learning, the answer is not clear at the end. We know we have this problem, but we don't know what the answer is. That makes some of the questions challenges and others projects.'
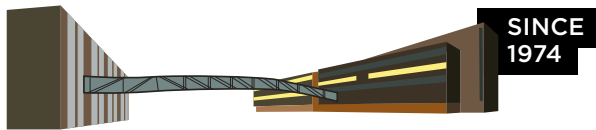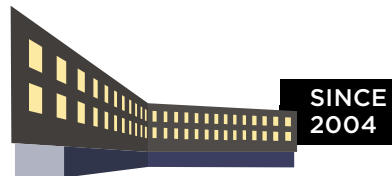
AALBORG UNIVERSITY

1

SINCE 1974

24.000 STUDENTS	5.000 STAFF

Ranked as the best European university for engineering.
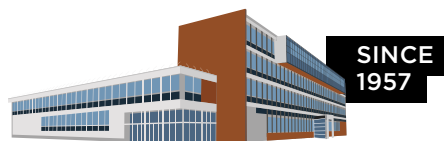
DUBLIN CITY UNIVERSITY

2

SINCE 1989

17.000 STUDENTS	3.000 STAFF

Ireland's University of Enterprise, leading for licensing and innovation partnerships with SMEs and multinational companies.
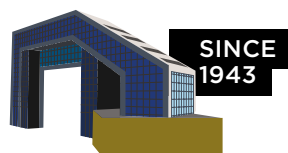
INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES

3

SINCE 1957

16.800 STUDENTS	2.800 STAFF

Since they were created, Groupe INSA and INSA Toulouse have implemented a model based on innovation and diversity, invented by one of its founders, the philosopher Gaston Berger.
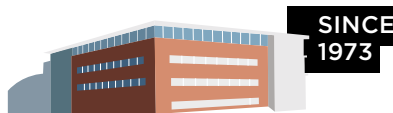
TECNOLÓGICO DE MONTERREY

4

SINCE 1943

89.641 STUDENTS	10.117 STAFF

Is in the Top 25 Undergraduate Schools (NO. 14) of the Princeton Review's Top Schools for Entrepreneurship Studies for 2018.

UNIVERSITY OF STAVANGER

5

SINCE 2004

12.000 STUDENTS	1.600 STAFF

Produces more business ideas per researcher than any other university in Norway.

The 13 universities of ECIU

Infographic made by
Marieke Abbink

Mexico, Monterrey

UNIVERSITY OF AVEIRO
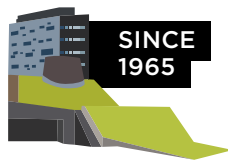
6

SINCE 1973

15.000 STUDENTS	1.650 STAFF

Best practice by the National Strategic Reference Framework Observatory, for its close cooperation with the region.

TAMPERE UNIVERSITY

SINCE 1965
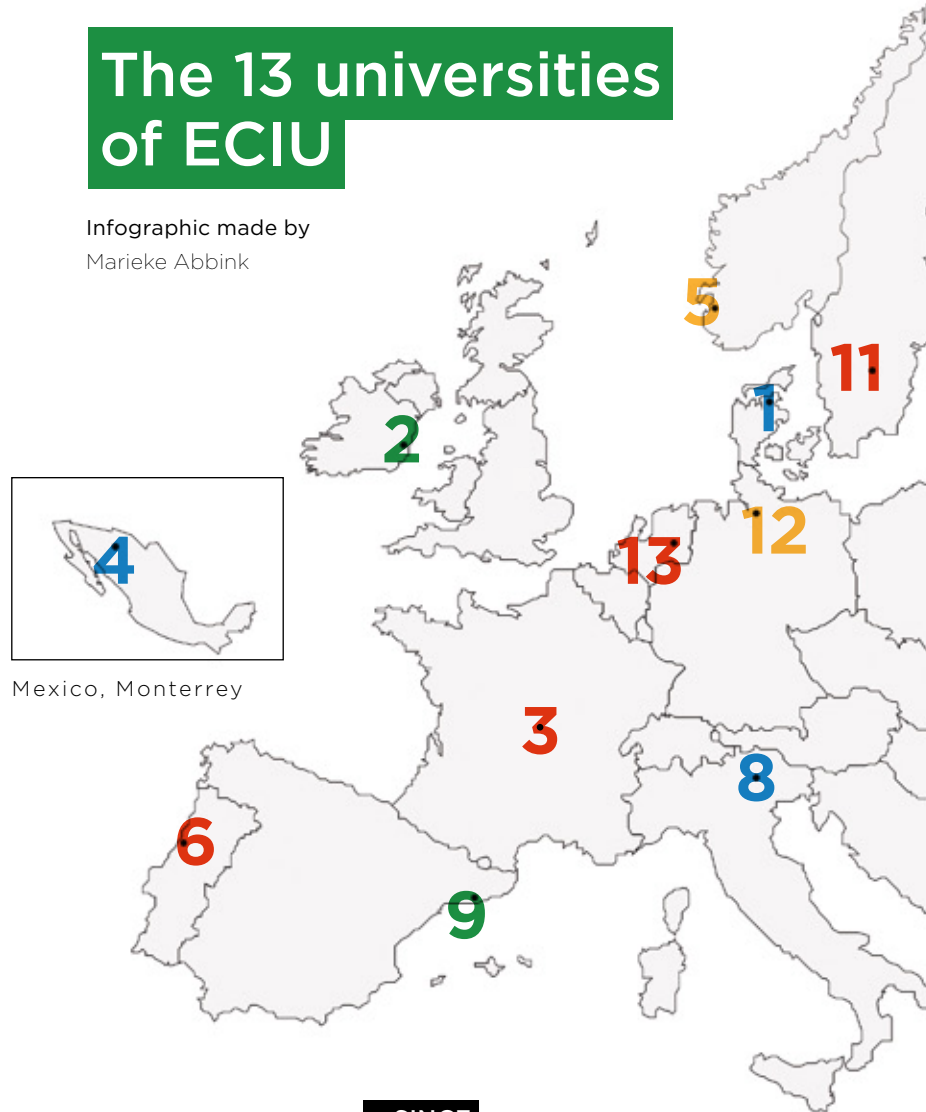
7
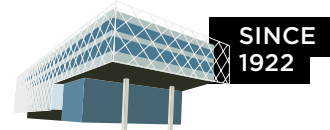
19.000 STUDENTS	4.000 STAFF

From the beginning of 2019 Tampere University of Technology and University of Tampere constitute Finland's most diverse university community.

UNIVERSITY OF TRENTO

SINCE 1962

8

17.000 STUDENTS	1.320 STAFF

Leading University in Italy for quality of research and education. At the center of the economic and social innovation in the Trentino region.

UNIVERSITAT AUTÒNOMA DE BARCELONA

SINCE 1968

9

34.080 STUDENTS	10.314 STAFF

Led the UAB-CIE Sphere, comprising of scientific, technological and business parks, multinational companies, SMEs, foundations and city councils.

KAUNAS UNIVERSITY OF TECHNOLOGY

SINCE 1922

10

9.818 STUDENTS	2.112 STAFF

Return on Investment of business incubator Startup Space is 600 % - taxes paid by startups in 5 years exceed the investment of the KTU 6 times.

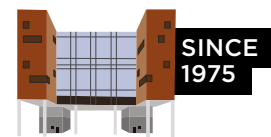## LINKÖPING UNIVERSITY

SINCE 1975

11

27.000 STUDENTS	4.000 STAFF

Produced the highest number of innovative spinouts in Sweden during the last decade.

HAMBURG UNIVERSITY OF TECHNOLOGY

SINCE 1978

12

7.620 STUDENTS	708 STAFF

Offers one of the top 5 combined Management and Engineering study degree programs in Germany.

UNIVERSITY OF TWENTE

SINCE 1964

13

11.000 STUDENTS	2.950 STAFF

Europe's most entrepreneurial university with more than 700 spin-offs.

'With Living Labs we can tackle global challenges'

One instrument to further develop the future universities are so-called Living Labs. Fernando Vilariño, Associate Professor at Universitat Autònoma de Barcelona and Associate Director of the Computer Vision Center, explains how these labs contribute to challenge-based learning.

To become a future-proof institution, universities will have to develop new educational and research models, says Fernando Vilariño. 'The classic vision on universities has been challenged. All information can be found on the internet with just one mouse click. Universities are no longer the gatekeepers of information and knowledge. Therefore we need to transform our institutions. Our hypothesis is that Living Labs can be an instrument for the development of these reinvented universities.'

'The core idea is that present-day challenges cannot be solved by individual institutions alone. With Living Labs we tackle these challenges since we use a multi-stakeholder, user-

Text
Jelle Posthuma
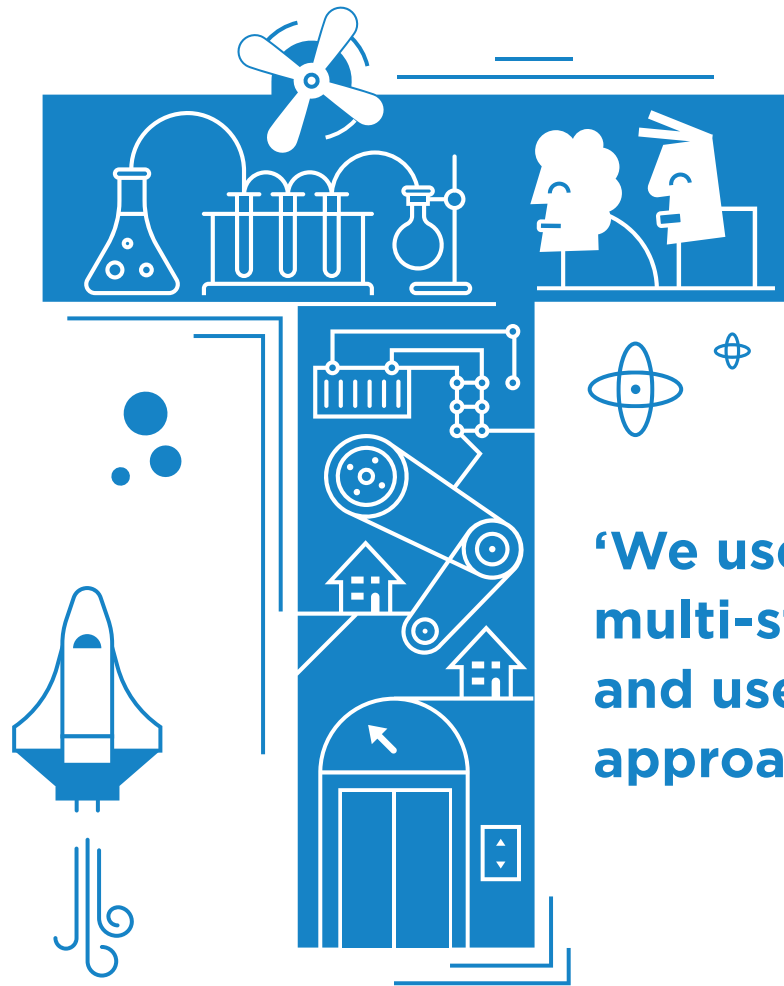
'We use a multi-stakeholder and user-centric approach'

centric approach: connecting citizens, policymakers, universities and private organizations.' Vilariño continues: 'A Living Lab can be linked to Digital Innovation Hubs (DIHs), for example. These hubs are promoted by the European Commission to stimulate digitalization. DIHs will appear as entry points. Companies can knock on the door in search for knowledge, for example about artificial intelligence.'

'Citizens in the center of research'
Living Labs will contribute to exploratory research, on social impact and anticipatory regulation, Vilariño explains. 'If we use the example of artificial intelligence, a Living Lab could explore the possibilities of facial

recognition, autonomous driving and assisted diagnosis.'

Citizens participate in the innovation process, Vilariño stresses. 'Living Labs place citizens in the center of the innovation process, not only as factors from which to obtain data. We use real-life communities and settings. It is not a lab by its classic definition. To understand new models of mobility, to stimulate cultural heritage co-creation or to study behavioral change for well-being, we transform normal streets in Eindhoven, public libraries in Barcelona, or public hospitals in Helsinki into a living laboratory. By doing so, we can anticipate the impact this will have on our cities and lives.'

Fernando Vilariño is the president of the European Network of Living Labs (ENoLL). The network was started 14 years ago (in 2006) by the EU Commission to stimulate open innovation in Europe. Up to now, the network has labeled 470 Living Labs around the world.

'Micro-learning varies from online courses to study packages'

There is a growing demand from students and employers for smaller, just in time and just enough stackable units of learning. ECIU University is ready to fill that gap and offers a wide range of micro-learning opportunities. Henri Pirkkalainen and Mark Brown talk about micro-credentials and flexible learning modules.

What are ECIU learning modules and micro-credentials?
Pirkkalainen: 'The modules will engage students in challenges that range from regional to international societal issues. They work together with other students, researchers, industry leaders and people working in the community to overcome these critical issues.'

Brown: 'Students have flexibility to select relevant micro-learning modules based on their own needs. For example, during the challenge a group of learners will find out that they lack certain knowledge or skills to solve the challenge. They will be given an opportunity to take micro-learning modules related to the challenge they are working on. Micro-learning offerings will range from online courses to study packages, to summer schools, to courses from industry.

What is the link to challenge-based education?
Pirkkalainen: 'The learning modules will be designed with a thematic focus on the United Nation Sustainable Development Goals, with a specific emphasis on Sustainable Cities and Communities. Achieving this requires a highly interdisciplinary approach drawing on contemporary pedagogies. For this reason, ECIU University will offer its students modules from various areas ranging from engineering and ICT to management. Challenge-based learning will be a "signature pedagogy" underpinning the learning experience of many ECIU University modules.'

Brown: 'In adopting this CBL approach many of the modules will flip traditional teaching methods by actively engaging learners in solving real problems. In some cases, ECIU University learners will join other students from different parts of Europe to work together on a challenge that seeks to develop solutions for both public and private sector.'

What are the main strengths of micro-credentials?
Pirkkalainen: 'Students will have improved access and control over their own learning outcomes and they will have more flexibility to develop personalized learning pathways.'

Brown: 'Also, the ECIU University will play an important role in contributing to wider discussions across Europe to help further develop and standardise the rapidly emerging micro-credential movement.'

Mark Brown
Director at National Institute for Digital Learning, Dublin City University

Henri Pirkkalainen
Associate Professor at Information and Knowledge Management Unit, Tampere University

'Universities create future'

The role of universities in view of SDG 11

In this pilot phase, ECIU University focuses on challenges related to UN Sustainable Development Goal 11. Professor Eglė Staniškienė, from the Sustainable Management Research group of Kaunas University of Technology, explains the role of European universities in the light of sustainable development.

Eglė Staniškienė

'Does the future university have to chase the society, or does it have to run in the frontline? I believe that a successful university has to work hand in hand with society,' says Eglė Staniškienė. 'The university community has to be conscious about the impact of their innovation and development. It means not only solving the most relevant challenges, but also having in mind the possible outcomes of reverse processes: deepening of the social exclusion, negative impact on environment and ecosystems.'

'Open, inclusive and diverse'
Therefore, the professor says, universities have to focus on values, responsibility and ethics. 'They should be open and inclusive, facilitate diversity and be fundamentally interdisciplinary in its approach to both teaching and research. Universities create future and are responsible for new relationships between the young generation and industry. This means the formation of the culture of dialogue, the commitment

and responsibility to various interest groups. If future industry is developed according to sustainable development principles, the prospective university will need strong inter-disciplinary studies and research.'

While discussing the role of the future university, Staniškienė mentions a relatively recent history: the Magna Charta Universitatum, which was signed in 1988 while celebrating the 900th birthday of Bologna University. 'It reflects on the mission of the future university quite precisely. One of its chapters says: 'In today's world, the universities' task of spreading knowledge among younger generations implies that they must also serve society as a whole'. I believe that a successful university should be able to gather together academic community, students and organisations to work on environmental problems, reducing social exclusion and other relevant sustainable development issues.'

Facts & Figures
- SDG 11: make cities and human settlements inclusive, safe, resilient and sustainable
- Half of humanity – 3,5 billion people – lives in cities today
- By 2060, almost 60% of the world's population will live in urban areas
- 828 million people live in slums today
- The world's cities occupy just 3% of the Earth's land, but account for 60-80% of energy consumption and 75% of carbon emissions

Targets by 2030
- Access for all to adequate, safe and affordable housing
- Access to basic service
- Upgrade slums
- Provide sustainable transport system for all
- Reduce the adverse per capita environmental impact of cities
- Reduce number of death and people affected by disasters with a focus on protecting the poor and people in vulnerable situations

Summer schools

Are you looking for an inspiring way to spend your summer? The ECIU Summer Schools offer you several high-quality courses to choose from, all of which will allow you to gain cultural insights together with other international students from all over the world. Go abroad, celebrate the summer and discover Finland, the Netherlands, Spain, ….!

Tampere University, Finland
Tampere Summer School

Date
3 – 14 August
Fee
€280 for a course of 2 ECTS | €420 for a course of 3 ECTS | € 560 for a course of 4 ECTS | € 700 for a course of 5 ECTS

What to expect?
Tampere Summer School offers a great selection of inspiring courses covering various academic fields and up-to-date topics. The Summer School is intended for university and applied university students and graduates from all over the world. It's open for Bachelor and Master's degree and PhD students. All courses are taught in English. Application period is 1 April – 15 May.

University of Twente, The Netherlands
CuriousU

Date
9 – 18 August
Fee
€750 Early bird fee | Regular fee €875 euro

What to expect?
The CuriousU experience is a one of a kind combination of a European summer school and a festival. Excellent academic courses, music, sports, theatre and inspirational speakers at one place. The broad range of courses that are given are based on the hottest research fields, which include but are not limited to; future health technologies, finance bootcamp for smart business, health & happiness, Robotics, Water and Earth observations.

Hamburg University of Technology (TUHH), Germany
Building Bridges: Leuphana meets TUHH. Joint training days for young researchers

Date
24 - 26 August
Fee
Free of charge
Place
TUHH, Hamburg & Leuphana University, Lueneburg

What to expect?
During this three-day summer school, German and international doctoral students and postdocs from the broad disciplinary range of both universities will work in mixed groups, learning how to build bridges through communication. They need this key competence for international research collaborations, for professional communication in interdisciplinary teams, and for the transition from university culture to the labour market.

University of Stavanger, Norway
The Conductor's Week

Date
10 – 14 August
Fee
€300 - €400

What to expect?
The Conductor's Week is Norway's largest conducting course, hosting over 100 participants and a teaching staff of 15-20 acclaimed conductors and educators. The Conductor's Week is held at the Faculty of Performing Arts at the University of Stavanger, and located in Bjergsted Culture Park – the heart of Stavanger's cultural district.

Universitat Autònoma de Barcelona, Spain
Make the best of your summer

Date
Two 3-week periods from late June to early August
Fee
€840 each course (6 ECTS) 20% discount for students from ECIU Consortium

What to expect?
The summer school offers subjects worth transferable ECTS from all fields. Most of the courses, which have 6 ECTS credits, are taught in English, with an option to learn and improve your Spanish as a Foreign Language. There is a Buddy Programme offered: meet local students who can show you around Barcelona Courses at the UAB Campus, a natural environment with the best services: sports, leisure, culture and accommodation 35' from Barcelona's city centre.

Kaunas University of Technology (KTU), Lithuania
5th International PhD Summer School

Date
17 - 21 August
Fee
Early bird and ECIU doctoral students €250 | Regular €300

What to expect?
It provides the opportunity for intellectually curious doctoral students to explore new knowledge, to expand cultural awareness and to exchange experience. The PhD Summer School will equip participants with essential skills that are necessary in all fields of science, and provide them valuable networking opportunity with participants from other countries.