



UOC

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## eHealth Center

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2017-2018  
**Report**

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Universitat Oberta  
de Catalunya

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**eHealth Center**

Av. del Tibidabo, 39-43  
08035 Barcelona

[uoc.edu](http://uoc.edu)

[ehealth-center.uoc.edu](http://ehealth-center.uoc.edu)

[@eHealthUOC](https://twitter.com/eHealthUOC)

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# eHealth Center

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2017-2018

**Report**

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# For the eHealth Center, the 2017/2018 academic year has been a period of coming into its own

The eHealth Center was created on 28 June 2017. The following months were devoted to getting it off the ground and, during 2018, we took steps toward consolidating this academic centre open to the world that seeks to lead the paradigm shift in health, empowering citizens and professionals alike through ICTs.

Thus, the organizational structure, the Consultative Committee and the Advisory Board were created, and the latter held its first meeting in November 2017. The year 2018 began with the organization of the 1st International Research Conference on eHealth and eWellbeing. The high participation and the quality of the contributions offer encouraging prospects for organizing the second and following conferences every two years.

During this period of growth and discovery, the eHealth Center obtained its first international agreements with e-health research centres, research projects financed with competitive public funds and the first consulting agreements with private enterprises, as well as scientific publications in the field of e-health. In addition, thanks to a website and

a physical space at the UOC, we have been able to attract and host visiting researchers and, reciprocally, researchers from the eHealth Center have been able to carry out stays at high-profile international centres.

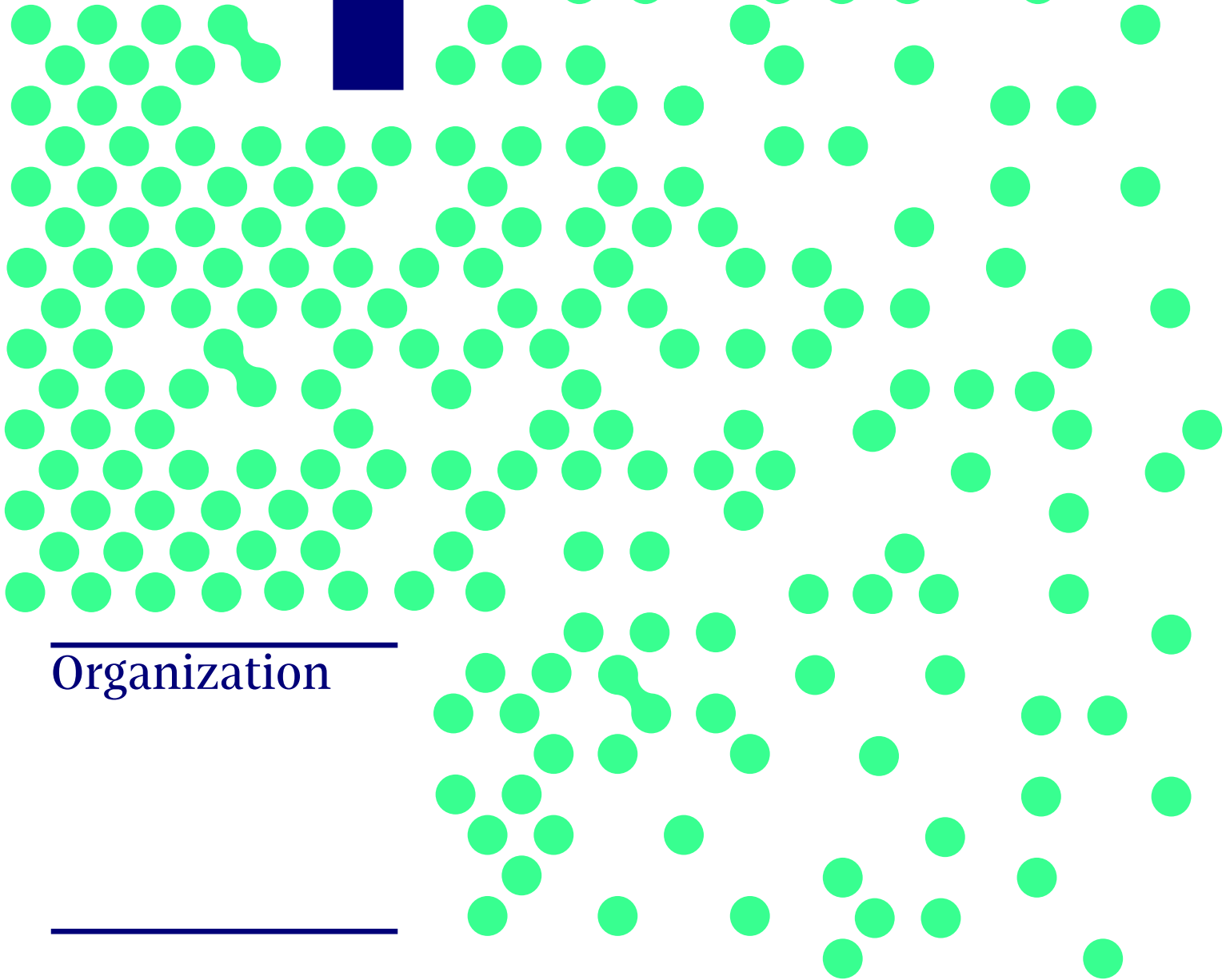
We have also worked for innovation through the UOC's open methodology, fostering participation between patients, the university community and health professionals to develop innovative, pioneering solutions that are adapted to patients' needs and improve their healthcare and quality of life.

The milestones achieved during 2018 promise an even better 2019 and spur us to continue working on research and innovation in the field of e-health around the world.

**Marta Aymerich**

Executive President, Executive Board

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Organization

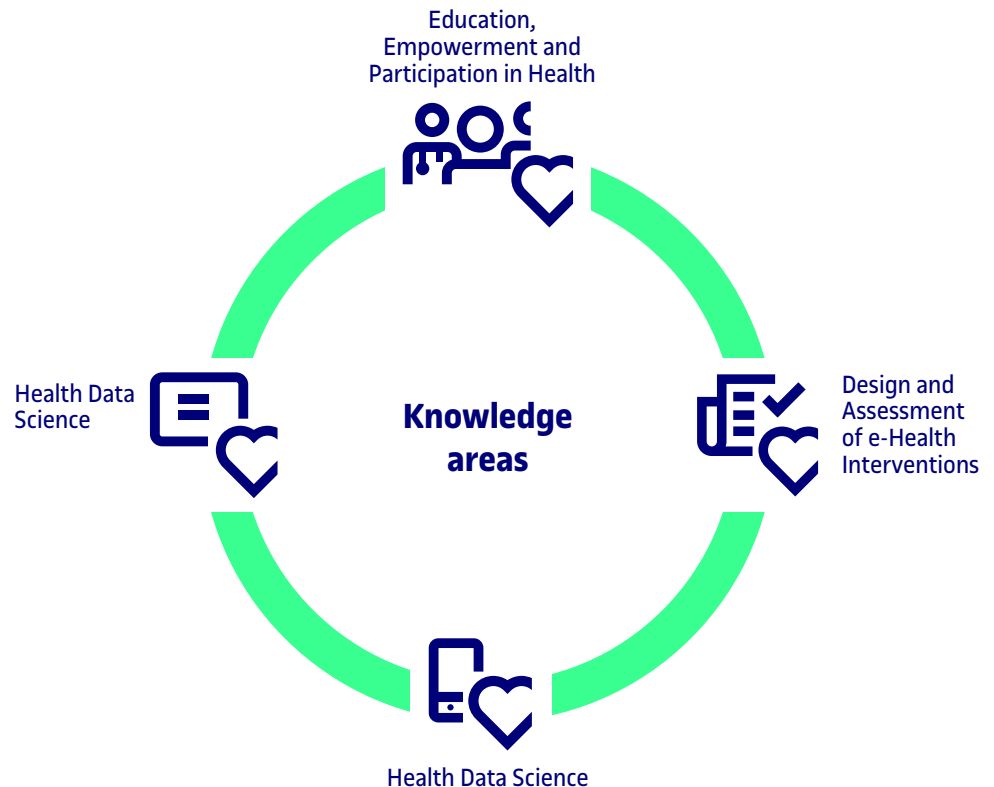
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## Organization

The eHealth Center is structured into four areas, each of which is directed and represented by a knowledge area coordinator.



# Organization

## Knowledge areas



### Education, Empowerment and Participation in Health

The eHealth Center seeks to strengthen and empower health professionals and citizens in general in disease prevention, as well as promote healthy lifestyles, with the goal of encouraging a more active, participative role in all matters related with personal and community health and well-being.

This area includes:

- Health education and digital skills for health.
- Empowerment in health.
- Participation in health and well-being.

### Design and Assessment of e-Health Interventions

The eHealth Center seeks to identify both citizens' and health professionals' needs and respond to them with the best applications, sensors and telemedicine interventions that generate the greatest societal impact.

This area includes:

- Promotion of e-health interventions to treat real-world health problems.
- Generation and analysis of theoretical models and evidence with the goal of developing, implementing and evaluating e-health interventions.

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## Health Data Science

The eHealth Center fosters the use of data analysis to promote personalized health and well-being. With this goal in mind, it delivers practical education on how to improve health, gathering and analysing available data. It also offers data science services and big data architectures to third parties and uses these services to generate evidence and validate models.

This area includes:

- Education and training in health data science.
- Provision of data science services and infrastructures for analysing health data.
- Definition of models that enable personalized health management and promotion.

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## E-Health and Equity

The eHealth Center contributes to identifying the causes of health inequalities and fostering their reduction in order to guarantee that everyone has the same opportunities for enjoying their lives, irrespective of their economic and social condition.

This area includes:

- Promotion of health equity through e-health projects.
- Analysis of the role of ICTs in reducing social inequalities in health and well-being.

\*This fourth area is not deployed as yet. Deployment is planned to start during 2019-2020.

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**The approach used is salutogenic, which involves putting the person at the centre of care with the goal of promoting self-managed care for health and well-being.**

# Organization

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## Who we are



## Advisory Board

The UOC eHealth Center's Advisory Board provides guidance in the eHC's research, innovation and training strategies. Its members are internationally respected independent experts with an acknowledged track record in the field of e-health.



### Joan X. Comella Carnicé

With a degree in Medicine and Surgery from the University of Barcelona (UB), he has been a full professor at the University of Lleida (UdL) since 2002 and at the Universitat Autònoma de Barcelona (UAB) since 2007. He is currently scientific director of the European Advanced Translational Research Infrastructure in Medicine and director

of the Vall d'Hebron Research Institute (VHIR), where he combines his scientific activities as principal investigator of the cell signalling and apoptosis group with management of the centre, which concentrates all the Hospital Universitari Vall d'Hebron's biomedical and innovation research.



### **Alejandro Jadad**

He holds doctoral degrees in Medicine, Philosophy and Law is a member of the Royal College of Physicians and Surgeons of Canada, the Canadian Academy of Health Sciences and the English Royal Society of Arts. He is director of the Institute for Global Health Equity and Innovation and full professor at the University of Toronto's Dalla Lana School of

Public Health. He is also founder of the Centre for Global eHealth Innovation, now eHealth Innovation at UHN. This centre was designed as a simulator of the future in which it will be possible to create and disseminate innovative solutions for the most pressing problems of our time. He was recently awarded an honorary doctorate by the UOC.



### **Itziar Larizgoitia**

She is a public health physician and holds a doctoral degree in Health Policies and a master's degree in Public Health and Business Administration. She is currently Senior Evaluation Officer at the World Health Organization (WHO), where she leads evaluations in institutional priority areas with the goal of reporting on their strategic planning

and fostering a transparent, results-driven organization. Her interests focus on improving the quality, safety and performance of health systems and services from a scientific, integrative approach.

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# Organization

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## Who we are



**Nuria Oliver**

She is director of Data Science Research at Vodafone and senior data scientist at Data-Pop Alliance. She has more than 20 years of research experience in the field of human behaviour modelling and prediction, using data and human-computer interaction. She holds a doctoral degree in Perceptive Intelligence from the Massachusetts Institute of Technol-

ogy (MIT). She worked for more than seven years as a researcher at Microsoft Research and she was the first female scientific director at Telefónica R&D, where she worked for more than eight years.



**Sara Pérez**

A clinical neuropsychologist and general psychologist, Sara Pérez is professor of the Department of Basic Psychology II (Cognitive Processes) at the Complutense University of Madrid (UCM). She is also head of the Logical Neuropsychology office in the Centro Médico Milenium Costa Rica Sanitas SL's Neurology Department. She is also

a neuropsychologist at APERTCras (National Association for Apert Syndrome and other Syndromic Craniosynostoses), academic member of EUPATI (European Patients' Academy on Therapeutic Innovation) and coordinator of the same entity for Spain.



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### **Xavier Prats Monné**

He is special advisor for the Teach For All global network. He was the European Commission's Director-General for Health and Food Safety between September 2015 and September 2018. During these three years, he was responsible for EU policies and programmes in health and food safety, which included promoting public health, assessing na-

tional healthcare systems' performance, pharmaceutical legislation and animal health and welfare, as well as strengthening Europe's capacity to deal with crisis situations in human health and the food industry.



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### **Antoni Trilla**

He holds a bachelor's degree in Medicine (1980) and a doctoral degree in Medicine (1990), both from the University of Barcelona (UB). He also holds master's degrees in Hospital Management (UB) and Health Economics (Pompeu Fabra University, UPF). He is a specialist in internal medicine, preventive medicine and public health, a senior consult-

ant and head of the Hospital Clínic de Barcelona's Department of Preventive Medicine and Epidemiology. He is also an associate professor of Public Health and vice dean of the Faculty of Medicine and Health Sciences at the University of Barcelona as well as an ISGlobal research professor. His area of work is in the field of communicable diseases and vaccines.

# Organization

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## Who we are



## Executive Board

The UOC eHealth Center's Executive Board is its permanent administration and management body. Its function is to define the centre's strategic and working plans, monitor and assess the activities performed, and implement the necessary agreements to ensure that the centre's purposes and goals are fulfilled.



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### **Marta Aymerich**

Vice President for Strategic Planning and Research and President of the eHealth Center's Executive Board

She holds a degree in Medicine and Surgery from the Universitat Autònoma de Barcelona (1993), a master's degree in Public Health from the University of Harvard (1999) and a doctoral degree in Medicine and Surgery from the Universitat Autònoma de Barcelona (2002).



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### **Manuel Armayones**

eHealth Center Development Director

He holds a bachelor's degree in Psychology from the University of Barcelona (1991) and a doctoral degree in Psychology from the same university (1999).





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**Pilar García**

Dean of the Faculty of Health Sciences

She holds a bachelor's degree in Medicine and Surgery from the University of Barcelona (1987-1992) and a doctoral degree in Medicine and Surgery from the Universitat Rovira i Virgili (1996-2000).

\* Position held until 15 November 2018.



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**Ramon Gomis**

Dean of the Faculty of Health Sciences

An endocrinologist, he is a full emeritus professor at the Faculty of Medicine at the University of Barcelona and an emeritus researcher at the August Pi i Sunyer Biomedical Research Institute (IDIBAPS), where he was director from 2008 to 2017.

\* Position held from 3 December 2018.



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**Josep Prieto**

Dean of the Faculty of Computer Science, Multimedia and Telecommunications

He holds a bachelor's degree in Computer Science from the Universitat Politècnica de Catalunya (1993) and a doctoral degree in Computer Science from the Universitat Oberta de Catalunya (2009).

# Organization

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## Who we are



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### **Teresa Guasch**

Dean of the Faculty of Psychology and Education Sciences

She holds a doctoral degree, European mention, in Psychology from the Ramon Llull University (2003) and a bachelor's degree in Educational Psychology. She also holds a postgraduate diploma in Educational Psychology, with a specialization in School Diversity, and in Curricular Consulting in the field of Teaching and Learning Strategies.



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### **Pastora Martínez**

Vice President for Globalization and Cooperation

She holds a doctoral degree in Physics from the Universidad Autónoma de Madrid, a master's degree in Business Management from EADA Business School and a master's degree in Science Leadership and Management (a joint programme given by the University of Barcelona, Universitat Autònoma de Barcelona and Pompeu Fabra University).



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### **Marc Alabert**

UOC Director of Strategic Planning

He holds a doctoral degree in Economics, Law and Business from the University of Girona (UdG). and a bachelor's degree in History from the same university (1997). He also has a Master's Degree in Public Management from ESADE, where he also took the Program for Management and Development.

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## Who we are



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## eHealth Center team

The eHealth Center team producing the centre's outcomes is composed of different professional profiles from different parts of the UOC. This range of profiles provides an interdisciplinary vision looking to ensure the best possible results in the field of e-health.



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### **Manuel Armayones**

eHealth Center Development Director

He holds a bachelor's degree in Psychology from the University of Barcelona (1991) and a doctoral degree in Psychology from the same university (1999).



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### **Alba Coma**

Deputy Director of the eHealth Center

She holds a bachelor's degree in Political Science and Administration from Pompeu Fabra University (2003-2008) and a master's degree in Business Administration from the Universitat Politècnica de Catalunya (2015-2016).

# Organization

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## Who we are



### **Carme Carrion**

Coordinator of the Design and Assessment of e-Health Interventions area and professor at the Faculty of Health Sciences

She holds a doctoral degree in Chemistry, within the University of Barcelona's Biochemistry and Molecular Biology programme (2002). She also holds master's degrees in Biotechnology from the University of Barcelona, Universitat Autònoma de Barcelona and Universitat Politècnica de Catalunya (1995) and in Conflictology from the UOC (2008).



### **Jordi Conesa**

Coordinator of the Health Data Science area and professor at the Faculty of Computer Science, Multimedia and Telecommunications

He holds a bachelor's degree in Computer Engineering (2001) from the University of Girona and a doctoral degree in Computer Science from the Universitat Politècnica de Catalunya (2008), with a research stay at Georgia State University in Atlanta (USA).



### **Eulàlia Hernández**

Coordinator of the Education, Empowerment and Participation in Health area and professor at the Faculty of Psychology and Education Sciences

She holds a bachelor's degree in Psychology (1988) and a doctoral degree in Psychology (1994) from the Universitat Autònoma de Barcelona.



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**Ignacio del Arco**

Research and projects specialist

He holds a doctoral degree in Biology from the Complutense University of Madrid (UCM). He has taken part as a scientist in biomedical research projects and as an innovation agent in the design of health systems and solutions.



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**Enrique Rodríguez**

Research and projects specialist

He holds a diploma in Statistics, a bachelor's degree in Market Research and Marketing, and postgraduate diplomas in Data Mining, Data Science and Social Anthropology, with 20 years of experience in data analysis, business intelligence and market research.

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**Noemí Robles**

Research and projects specialist

She holds a bachelor's degree in Psychology (2000) and a doctoral degree in Neuroscience (2006) from the Universitat Autònoma de Barcelona. She has extensive research experience in a variety of fields, from basic research to epidemiology and public health, and has also worked in health service assessment.

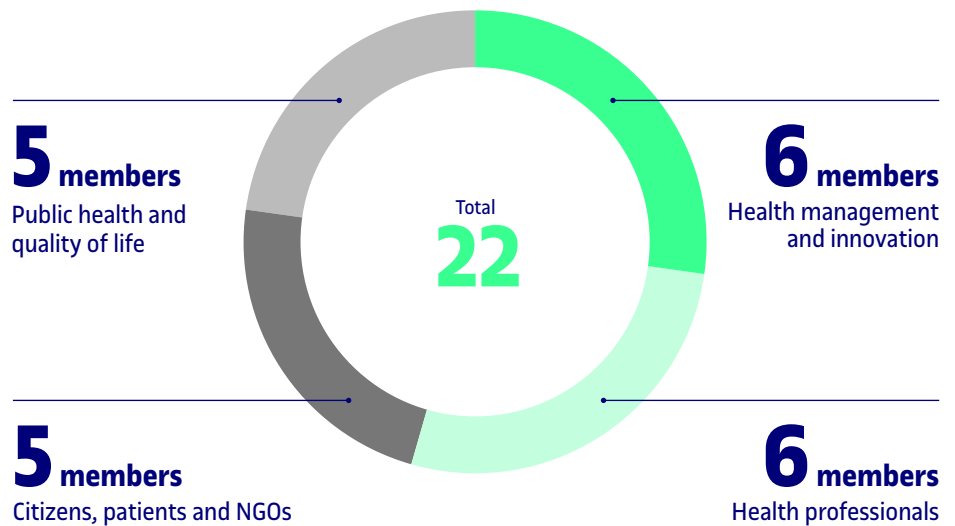
# Organization

## Who we are



## Consultative Committee

The eHealth Center's Consultative Committee aims to represent all people and organizations who play a part in the health system and who, in a multidisciplinary sense, contribute to change in the health model paradigm through the use of information and communication technologies.



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Members of the Consultative Committee (by areas):

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## Public health and quality of life

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Pau Batlle (Dipsalut)

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Carme Borrell (Barcelona Public Health Agency, ASPB)

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Carmen Cabezas (Public Health Agency of Catalonia, ASPCAT, Government of Catalonia)

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Antoni Dedeu (Agency for Health Quality and Assessment of Catalonia, AQuAS)

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Josep Rodríguez-Roca (Barcelona Social Services Consortium)

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## Citizens, patients and NGOs

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Alfonso Bustos (Doctors Without Borders)

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Juan Carrión (Spanish Federation of Rare Diseases, FEDER)

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Tomás Castillo (Plataforma de Organizaciones de Pacientes)

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María Ángeles Medina (Asociación Salud Digital)

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Pedro Soriano (FFPaciente)

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## Health management and innovation

---

Anna Ripoll (Bioinformàtics Barcelona)

---

Luis Carretero (Marina Salud)

---

Daniel Luna (Hospital Italiano de Buenos Aires)

---

Felip Miralles (Eurecat)

---

Carlos Mur (SEDISA)

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Jordi Naval (Biocat)

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## Health professionals

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Josep Maria Castel (Fundació Institut Català de Farmacologia, FICE, Hospital Universitari Vall d'Hebron)

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Joan Carles March (Andalusian School of Public Health, EASP)

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Lluís G. Pareras (Barcelona Medical Association, COMB)

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Pilar Saura (Badalona Serveis Assistencials, BSA)

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José M. Tormos (Guttmann University Institute of Neurorehabilitation)

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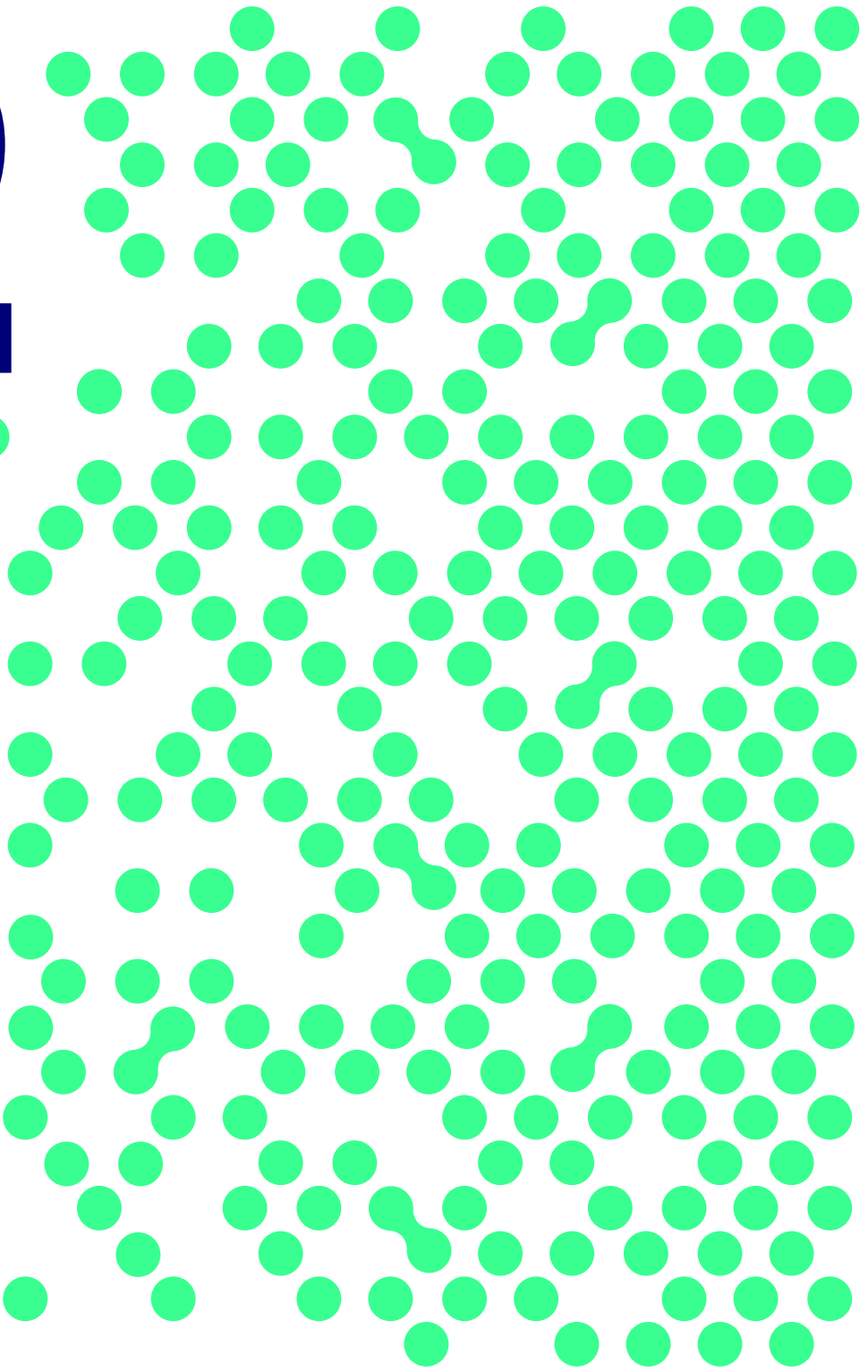
Jordi Serrano (UniversalDoctor)

# U2

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2017/2018  
at a glance

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**2017/2018  
at a glance**

**This section highlights the  
main achievements by UOC  
staff in the field of e-health.**

# 2017/2018 at a glance

## Milestones

### Creation of the eHealth Center, the first academic centre specialized in digital health in southern Europe

28 June 2017

The new academic centre brought together all the knowledge generated at the UOC in the sphere of e-health, in other words, including all the information and communication technologies (ICTs) aimed at promoting, maintaining and recovering health and well-being.

The ceremony presenting the centre was attended by the UOC's President, Josep A. Planell, the UOC's Vice President for Strategic Planning and Research, Marta Aymerich, the Catalan Government's Minister for Health, Antoni Comín, the European Commission's Director-General for Health and Food Safety, Xavier Prats Monné, and the eHealth Center's Development Director and professor at the UOC's Faculty of Psychology and Education Sciences, Manuel Armayones.

### Signature of the agreement with two of Canada's leading e-health research centres

18 October 2017

A delegation from the UOC eHealth Center's Executive Board, consisting of the Vice President for Strategic Planning and Research, Marta Aymerich, the Vice President for Globalization and Cooperation, Pastora Martínez Samper, and the eHealth Center's Development Director, Manuel Armayones, visited various institutions in Toronto (Canada) related with e-health.



In line with the centre's commitment and its cross-disciplinary vision, it wished to establish a cooperation and partnership agreement with the **Centre for Global eHealth Innovation**,

now known as eHealth Innovation at UHN, and with the Institute for Global Health Equity and Innovation (IGHEI) at the University of Toronto's Dalla Lana School of Public Health, given that these entities fully align with the eHealth Center's objectives: **generate and transfer knowledge, applying a person-centred approach that analyses physical, psychological and social aspects.**

### Formation of the eHealth Center Advisory Board

10 November 2017

The formation of the Advisory Board was framed within the detailed presentation of knowledge areas developed by the eHealth Center and also within a discussion of the future challenges for e-health.

The members that make up the Advisory Board include the European Commission's Director-General for Health and Food Safety, **Xavier Prats Monné**; Head

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of Preventive Medicine and Epidemiology at Hospital Clínic de Barcelona, **Antoni Trilla**; the Director of the Vall d'Hebron Research Institute (VHIR), **Joan Comella**; the Spanish coordinator of the European Patients Academy on Therapeutic Innovation (EUPATI), **Sara Pérez**; the director of the University of Toronto's Institute for Global Health Equity and Innovation, **Alejandro Jadad**; **Itziar Larizgoitia**, World Health Organization Senior Evaluation Officer; and **Nuria Oliver**, data science research director at Vodafone and senior data scientist at Data-Pop Alliance.

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## **Awarding of honorary doctorate to Alejandro Jadad, member of the UOC eHealth Center's Advisory Board**

25 January 2018

Jadad holds a doctoral degree in Medicine from the Pontifical Xavierian University in Colombia and a doctoral degree in Philosophy from Balliol

College, Oxford University. He is currently professor and director of the **Institute for Global Health Equity and Innovation** at the Dalla Lana School of Public Health at the University of Toronto, and founder of the **Centre for Global eHealth Innovation**, now **eHealth Innovation at UHN**, also in Canada.



This expert in information and communication technologies applied to health was recognized not only for his extensive research but also for leading a global conversation that generated a **new conceptualization of health**, namely, **the ability to adapt to the physical, mental and social challenges that life brings our way**. With this outlook, it is possible to create a **health pandemic**, because it enables every single person in

the world, including complex patients – in any context – to feel healthy.

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## **Organization of the 1st International Research Conference on eHealth and eWellbeing**

26 January 2018

The eHealth Center organized this conference with the subtitle “**Evaluating the evidence for a paradigm shift in health**”. The purpose was to share the evidence-based practices used by international experts in the use of data and digital technologies in health. The keynote address was given by Alejandro Jadad, founder of the Canadian Centre for Global eHealth Innovation, now eHealth Innovation at UHN.

Implementing effective digital approaches for promoting health and well-being requires addressing the challenge of generating scientific evidence that analyses digital actions' viability

# 2017/2018 at a glance

## Metas

and also accurately assesses these actions' impact in society.

### **Organization of the 1st Internal Workshop Supporting Interdisciplinary Research in E-Health jointly with the UOC Knowledge Transfer and Research Support Office**

17 May 2018

The goal of this workshop was to promote cross-disciplinary research in e-health among all of the institution's knowledge areas.



To achieve this, a working session was held during which project ideas related with e-health were identified; subsequently, possible projects were analysed

and identified, together with national and international calls that would enable them to be funded and materialized.

### **Participation and co-organization of the COCEMFE National Conference**

29 May 2018

The eHealth Center's Eulàlia Hernández, Jordi Conesa and Manuel Armayones teamed with visiting researcher Éder Peña in the preparatory working session for the National Conference on Physical and Organic Disability, Ageing and Chronicity, sponsored by the Catalan Confederation of Persons with Physical and Organic Disability, COCEMFE Catalonia.

Manuel Armayones was appointed the conference's scientific director and other participants included professors Eulàlia Hernández, Asun Pié and Israel Rodríguez Giral, all from the Faculty of Psychology and Education Sciences, and

Jordi Conesa, professor at the Faculty of Computer Science, Multimedia and Telecommunications.

### **Designation of the Faculty of Health Sciences as a World Health Organization (WHO) collaborating centre for eHealth**

18 July 2018

The Faculty of Health Sciences will cooperate in implementing the e-health strategy in Latin America and the Caribbean, and in developing training courses in telemedicine, coordinated by the Pan American Health Organization (PAHO), which acts as the WHO's Regional Office for the Americas.

The eHealth Center contributes as a collaborating centre, especially with the third of its goals, which refers to the adoption and use of m-health in the WHO's member states.

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## **Consolidation of the cooperation with eHealth Innovation in Toronto**

July 2018

Following from the stay by the researcher Carme Carrion at this pioneering centre in the field of e-health, the two organizations will work together in validating and implementing digital solutions for the management of various diseases.

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## **Organization of the round table “How can e-health services be accelerated when technology is no longer the problem”, as part of the official opening of the UOC’s Support Point in Vigo**

19 September 2018)

With the opening of this new UOC Point, the round table “How can e-health services be accelerated when technology is no longer the problem” was held, with

participation from Marta Aymerich, Vice President for Strategic Planning and Research at the UOC and president of the eHealth Center’s Executive Board, and Manuel Armayones, the eHealth Center’s Development Director.

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## **Workshops on “eHealth. Current challenges for and needs of healthcare professionals” held in Barcelona and Seville**

September and October 2018

The objective of these workshops, organized by the Faculty of Health Sciences, was to put on the table both the Spanish health sector’s current needs and those it will have in the immediate future in regard to the new profiles and skills required by health professionals. Considering different facets of the health sector (healthcare, technology, university, research, pharmacy and patients), the workshops sought to answer questions such as: What does “health”

mean? What is expected from healthcare professionals? Are we prepared for a more empowered and well-informed public? What are the new professional roles that need to be integrated in order to address new health challenges?

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## **Support for the University Master’s Degree in E-Health, delivered by the UOC’s Faculty of Health Sciences**

October 2018

The online University Master’s Degree in E-Health has a duration of two years and targets all health professionals who perform care- and non-care-related tasks.

This is the only official master’s degree targeting health professionals in the sector’s most innovative area, and the one that is experiencing strongest growth. Our intention is to cater for the present needs of the e-health sector, using technology as the connecting thread for improving the efficacy and efficiency of

# 2017/2018 at a glance

## Metas

interventions intended both for health promotion and education among the healthy population and for diagnosing and monitoring acute and chronic patients.

## Participation in Healthio 2018

16-18 October 2018

The UOC has attended Healthio for the second year running and, for the first time, the eHealth Center has been one of the event's sponsors. The UOC's professionals informed the conference's visitors about the University's e-health projects and took part in some of the "agora talks" that were held there.



## Co-organization with the Spanish E-Health Association of the workshop “E-Health and new professions. Now what? The big question that young, highly confused people are asking”

2 October 2018

Held at the UOC centre in Madrid, the Workshop brought together a broad spectrum of speakers from different fields to discuss the main challenges facing recent graduates, that is, students who have just completed their university studies and are joining a job market that is completely unknown to many of them. In addition, young graduates are being increasingly asked to contribute digital knowledge, abilities and skills.



## Participation in the event on “Virtual reality in psychological interventions with children and teenagers: not just glasses and videos”

2 October 2018

Eulàlia Hernández, coordinator of the eHealth Center's Education, Empowerment and Participation in Health knowledge area, took part as speaker in the event organized by the UOC's Faculty of Psychology and Education Sciences, sponsored by the Movistar Centre.

The goal pursued by this event was to **highlight the possibilities offered by virtual reality for psychological intervention with children and teenagers** and to inform professionals of the new profiles and skills that are needed today in the process.

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## **Participation and promotion of the RITMOS 2018 International Workshop**

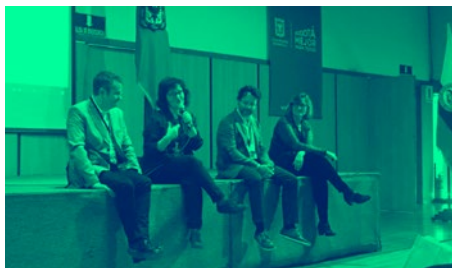
**30-31 October**

Organized by RITMOS (Ibero-American Network for Mobile Technologies in Health, Ref. CYTED 515RT0498) and the UOC, the event's objective was to showcase the progress and results of the project's 4th year in the field of m-health research and innovation.

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## **Launch of the UOC eHealth Center's online newsletter**

**December 2018 - January 2019**



We have created our centre's online newsletter to inform health professionals about the latest news and developments concerning the training and guidance we offer and the research we carry out as the Universitat Oberta de Catalunya's (UOC) academic e-health centre.

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## **UOC's new online Psychological Help Service up and running**

The new online Psychological Help Service that will be offered to the University's staff, starting in 2019, reflects the UOC's desire and responsibility as a university to care for its employees' health. The eHealth Center has played a fundamental role in promoting and materializing this service, which will provide support in resolving work, personal and health problems.

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## **Co-creation of the MOOC "Health Literacy: Proposals and Ideas for Care and Self-Care"**

Citizens' digital literacy in health matters is fundamentally important, as it enables them to acquire the necessary skills to access, understand, evaluate and make decisions related with their own health. By means of a basic training course, this MOOC will improve people's understanding of information about health, but it will also give health professionals tools to help them act as health resource prescribers.

# 2017/2018 at a glance

## Information in brief



### Research and innovation



Research groups who contribute to e-health  
research

13

#### Chair

UOC-BSA Chair in Applied Research and  
Data Analysis in Health

1

#### Visiting researchers

Universidad de Caldas  
Universidad Iberoamericana

2

### Publications



Articles published in  
academic journals

2017/2018

37

### Stay

Center for Global  
eHealth Innovation



1

Toronto

### Theses



2

doctoral theses defended

*Using ubiquitous computing for preventing risk  
behaviors based on smart contexts through mobile  
devices: an approach for nutrition*

*Cognitive function enhancing through transcranial  
magnetic stimulation and video game training:  
synergistic effects*

10

Theses in progress

### Agreements signed



7



## Projects in progress



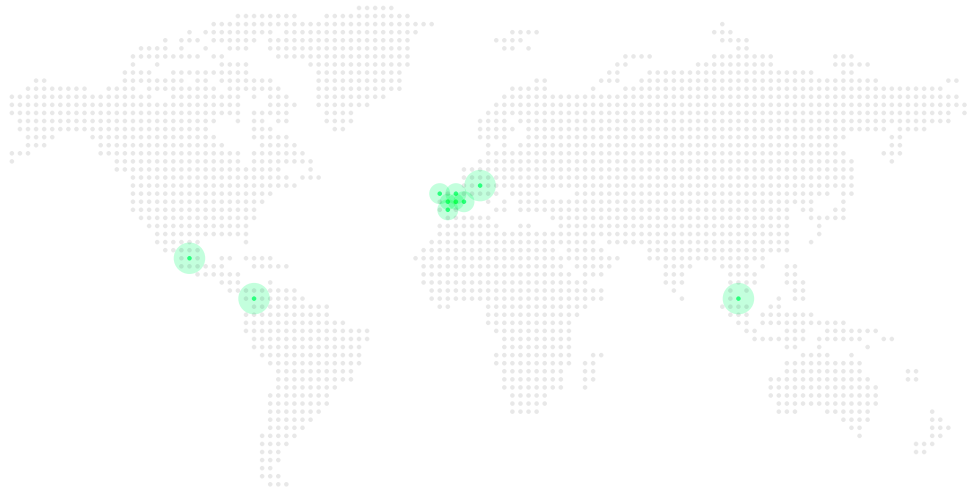
# 12

Projects in progress

This timeline shows the starts of the projects we currently have in progress.



## Conferences and scientific seminars



**31** participations in congresses, workshops, symposia and talks

**30** In-person

**1** Online

# 2017/2018 at a glance

## Information in brief

### Impact and popularity



**+940**

followers

**+6,502**

interactions

**+7,926**

profile visits

**+500,000**

impressions

**+800**

tweets



**48**

news items on e-health



**46**

videos

**+34,789**

visits during 2018

**+5,717**

views

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**“We work to identify, develop, implement and assess technology-based models and solutions that improve people’s and communities’ quality of life and health, and their relationship with the health system.”**

**Manuel Armayones**  
eHealth Center Development Director

# 2017/2018 at a glance

## Information in brief

## Accolades and awards

### Prizes

The **RELIEF** project was awarded a prize by the **Spanish Chronic Pain Society (SED)** in the category “Innovative Idea for Chronic Pain”.

The **COMJunts** web application won the **eHealth Awards 2018** in the category “Best App for Patients”.



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## Recognitions

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HIMSS Europe named **Manuel Armayones** one of the **top 50 European leaders in the field of health and the information and communication technologies**. To celebrate this achievement, the UOC edited a recognition video of Manuel Armayones summarizing the major milestones of his career.

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**Carme Carrion** was chosen to lead the **International Association of Universities' (IAU)** working group related with the UN's Sustainable Development Goal (SDG) 3 on health and well-being. The IAU's statement highlighted that the UOC was chosen above all on the grounds of the existence of the eHealth Center.

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**Marta Aymerich** was chosen to present the talk entitled "Psychotherapies for dementia: how can a web app help you to choose the most suitable one?" at the **Harvard T. H. Chan School of Public Health 2017 Alumni Weekend**. She took the opportunity to present the eHealth Center.

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**Manuel Armayones** received public acknowledgement for his career in the field of e-health and patients at the **20th anniversary of the Universitat Politècnica de València's SABIEN research group** in October 2018

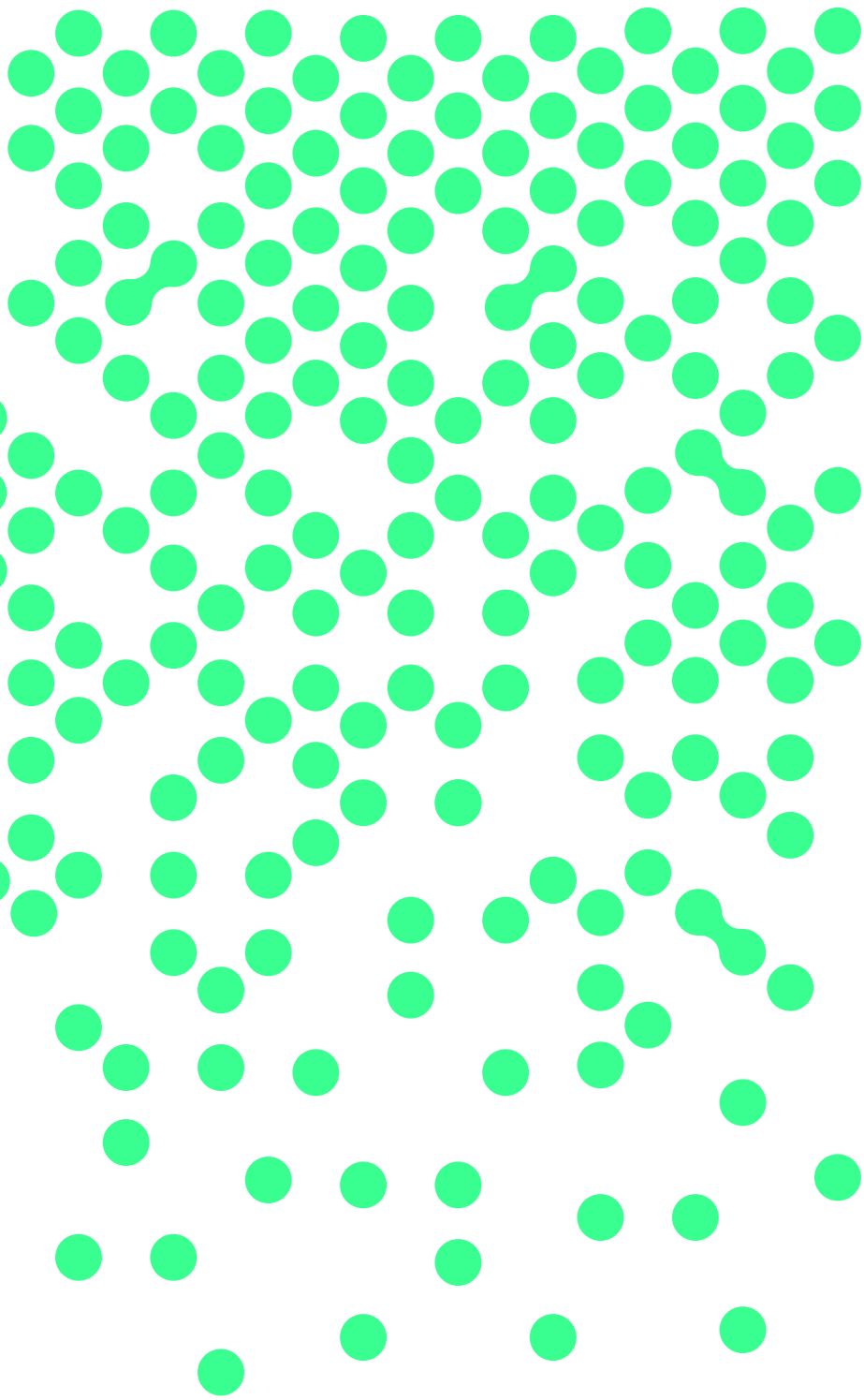


# U3

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Lines of  
activity

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UOC  
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Parlament Europeu  
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PARLAMENT EUROPEU BARCELONA COMISSIÓ EUROPEA

Event marking the eHealth center's launch, held at the European Commission's Barcelona office. 28 June 2017

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# Lines of activity

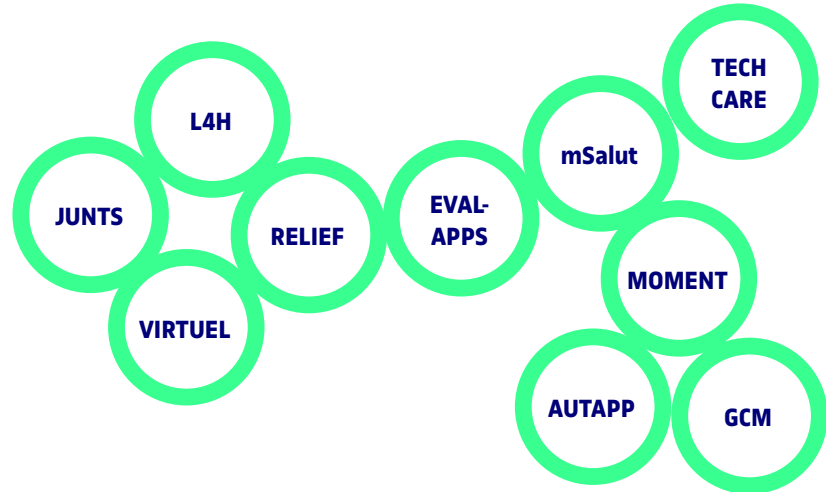
## Research and innovation



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## Projects in progress

The eHealth Center fosters interdisciplinary research and innovation in e-health, embracing all of the University's spheres of knowledge; it develops innovative projects with a social impact that seek to improve people's health and quality of life.





| <b>Project name</b>   | <b>Description of the project</b>  | <b>Principal investigators</b>         | <b>Period</b> | <b>Amount funded</b> | <b>Funding entity</b>  |
|---|--|--|---------------|----------------------|--|
| <b>Learn4Health (L4H)</b>   | <b>Learn4Health (L4H)</b> promotes change in school-children's food culture and health through interventions carried out at schools targeting both pupils and teachers.                | Medina Luque, Francesc Xavier (IP UOC) | 2016-2019     | 12,965               | European Commission  |
| <b>RELIEF. Recovering Life Wellbeing through Pain Self-Management Techniques Involving ICTs</b>   | The aim of RELIEF is to engage with health providers to create innovative, sustainable solutions that relieve chronic pain, improving pain control, using self-managed ICT techniques. | Hernández Encuentra, Eulàlia           | 2016-2019     | 19,180               | European Commission  |
| <b>EVALAPPS. Design and validation of a tool to assess the efficacy, safety and effectiveness of health apps developed for overweight and obesity management and prevention</b> | The goal of this project is develop a tool for assessing apps for overweight and obesity management.   | Carrion Ribas, Carme                   | 2017-2019     | 40,535               | Instituto de Salud Carlos III (Ministry of Science, Innovation and Universities) |

# Lines of activity

| Project name   | Description of the project  | Principal investigators                      | Period    | Amount funded | Funding entity                                   |
|--|---|--|-----------|---------------|--|
| <b>JUNTS. Overcoming social and educational barriers and fostering literacy about interferences and difficulties in understanding information and documentation targeting families of children affected by rare diseases</b> | The project addresses the challenge of putting medical and health information in the hands of families and providing solutions that will bring about a more inclusive literacy among this population group. | Armayones Ruiz, Manuel<br>Estopà, Rosa (UPF) | 2015-2019 | 33,000        | "la Caixa" Foundation                            |
| <b>VIRTUEL. Visual recognition using end-to-end learning methodologies: theory and applications</b>  | This project seeks to design new learning algorithms based on computer vision to improve some of the problems raised in this field.   | Lapedriza Garcia, Àgata<br>Masip Rodó, David | 2016-2018 | 44,770        | Ministry of Science, Innovation and Universities |
| <b>mHealth: challenges and opportunities for health systems</b>  | The project seeks to analyse access, uptake, use, impact and sustainability of m-health in the Spanish health system.   | Lupiáñez Villanueva, Francisco               | 2017-2019 | 96,278.63     | "la Caixa" Foundation                            |
| <b>Collaborative medication management: a research project and participative action in mental health</b>   | The project plans to adapt the experience gained in collaborative medication management (CMM) to Catalonia and develop it by publishing a specific CMM guide.   | Pié Balaguer, Assumpció                      | 2017-2020 | 42,965.75     | "la Caixa" Foundation                            |

| <b>Project name</b>   | <b>Description of the project</b>  | <b>Principal investigators</b>                                   | <b>Period</b> | <b>Amount funded</b> | <b>Funding entity</b>  |
|---|--|--|---------------|----------------------|--|
| <b>AUTAPP. Development of an app to assist in decision-making on psychosocial interventions for autistic spectrum disorders</b> | The study will consist of a systematic review of the scientific evidence, which will include studies on the efficacy and effectiveness of the interventions included in the project.   | Aymerich, Marta  | 2018-2020     | 44,770               | Instituto de Salud Carlos III (Ministry of Science, Innovation and Universities) |
| <b>MOMENT. Metaphors for major mental disorder. Analysis of the discourse of patients and mental health professionals</b>       | The goal of the MOMENT project is to detect and systematize prevailing conceptions and assumptions about the disorder, and also to identify and foster change in possible discourses that deny mentally ill people's agentivity.                 | Coll-Florit, Marta   | 2018-2020     | 56,991               | Ministry of Science, Innovation and Universities                                 |
| <b>TECH CARE. Training on the adaptability of assisted living technologies (ALT) in the home and in community care</b>          | The goal of the project is to introduce and train the direct target groups to act as first-level evaluators and advisers with respect to the ethical and practical challenges that determine the ALT's acceptability in home and community care. | Hernández Encuentra, Eulàlia<br>Carrion Ribas, Carme<br>(IP UOC) | 2017-2020     | 45,315               | European Commission  |

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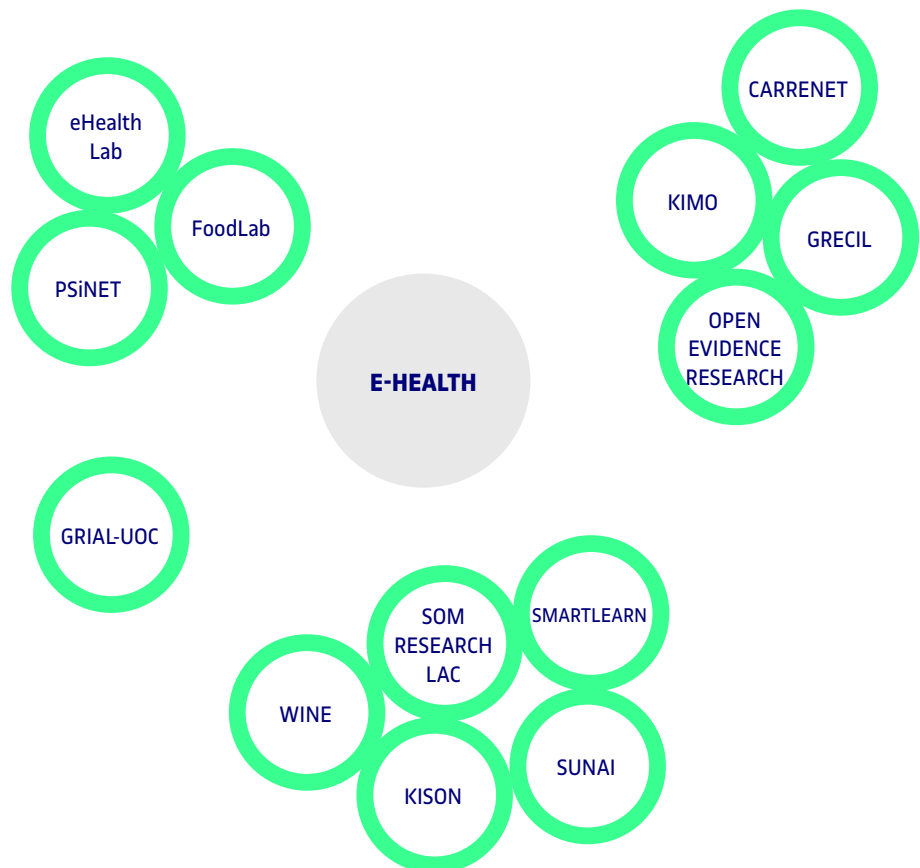
# Lines of activity

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## Research and innovation

### Research groups

UOC research groups that carry out research in the field of e-health:



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## **eHealth Lab**

eHealth Lab is an interdisciplinary research group that focuses its activity on the design, implementation and evaluation of different digital solutions that seek to improve the effectiveness, efficiency and security of different interventions, targeting health professionals, patients and healthy citizens.

Alabert López, Marc  
Aymerich Martínez, Marta  
Carrion Ribas, Carme  
García Lorda, Pilar  
Nieto Luna, Rubén  
Sora Miana, Beatriz

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## **Psychology, Health and the Net (PSiNET)**

The primary objective of the PSiNET (Psychology, Health and the Net) research group is to study the psychological aspects related with the use of the ICTs for health and quality of life, and also the different approaches to the use of the internet to improve knowledge and support care processes in health and illness.

Armayones Ruiz, Manuel  
Boixadós Anglès, Mercè  
Gómez Zúñiga, Benigna  
Guillamón Cano, Noemí  
Hernández Encuentra, Eulàlia  
Pousada Fernández, Modesta  
Reinoso Bernuz, Marta  
Vivas Elias, Josep

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## **Diet, Nutrition, Society and Health Interdisciplinary Research Group (FoodLab)**

The Diet, Nutrition, Society and Health Interdisciplinary Research Group (FoodLab) focuses its interdisciplinary research on the evolution of dietary patterns and their relationship with society and health, thus linking with nutrition, disease prevention and food culture.

Aguilar Martínez, Alicia  
Bach Faig, Anna  
Esquius de la Zarza, Laura  
Medina Luque, Francesc Xavier  
Torralba Iniesta, José Antonio

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# Lines of activity

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## Research and innovation

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### Knowledge and Information Management in Organizations Research Group (KIMO)

The focus of the KIMO research group is clearly interdisciplinary and is currently centred on five research lines: strategic knowledge management; social media and knowledge; open science and open innovation; competitive intelligence and territorial intelligence; and open government, transparency and reuse of information.

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Campalans Moncada, Carolina  
Canals Parera, Agustí  
Cobarsí Morales, Josep  
Creus Quinteros, Amalia Susana  
García Alsina, Montserrat  
López Borrull, Alexandre  
Ortoll Espinet, Eva

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### Cognition and Language Research Group (GRECIL)

The Cognition and Language Research Group (GRECIL) specializes in studying language processing (specifically language acquisition), learning, assessment, intervention, understanding and production of language in adults and children with or without language-associated disorders (language development disorder, dyslexia, autism and neurodegenerative diseases).

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Ahufinger Sanclemente, Nadia  
Andreu Barrachina, Llorenç  
Ferinu Sanz, Laura  
Iguadala Pérez, Alfonso  
Moya Galé, Gemma  
Pacheco Vera, Fernanda

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### Open Evidence Research

The main mission of Open Evidence is to deepen understanding of the digital revolution's impact on institutions and citizen empowerment. We believe that there are major similarities in how government, financial, health and learning institutions, and people's behaviour, have responded to the impact of the digital revolution.

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Anastasiadou, Dimitra Tatiana  
Codagnone, Cristiano  
Duart Montoliu, Josep M.  
González Alonso, Pedro Javier  
Lo Piano, Samuele  
Lupiáñez Villanueva, Francisco  
Peña López, Ismael  
Saltelli, Andrea  
Vilar Mateo, Ruth

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## **Linguistic Applications Inter-University Research Group (GRIAL-UOC)**

The Linguistic Applications Inter-University Research Group, GRIAL-UOC, is an interdisciplinary research group whose members are cognitive linguists, computational linguists and computer scientists working in the field of human language processing. Its field of research, therefore, lies in the classic intersection between linguistics and cognitive science.

Climent Roca, Salvador Coll-Florit, Marta Duran Cals, Jordi Oliver González, Antoni Vázquez Garcia, Mercè

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## **Scene Understanding and Artificial Intelligence Lab (SUNAI)**

The SUNAI group develops computer vision and artificial intelligence algorithms to extract information from static images or videos.

Abbas, Waseem Baró Solé, Xavier Hassan, Hayat Kosti, Ronak Lapedriza Garcia, Àgata Masip Rodó, David Oliu Simón, Marc Pons Rodríguez, Gerard Ventura Royo, Carles

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## **SmartLearn research group (SMARTLEARN)**

The SmartLearn group's research and innovation activity focuses on the intensive use of information and communication technologies to improve and enhance e-learning in its multiple forms, adopting a multidisciplinary approach to address the demanding, changing needs of current and next-generation online learning systems and services.

Caballé Llobet, Santi Conesa Caralt, Jordi Gañán Jiménez, David Guitart Hormigo, Isabel

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# Lines of activity

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## Research and innovation | IN3

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### Care and Preparedness in the Network Society (CareNet)

The goal of CareNet is to understand the impact of technologies, particularly ICTs, on the new societal and cultural structure of social care and welfare, and also on the level of preparedness for crises, disasters and emergencies.

---

Arenas Conejo, Míriam  
Beneito Montagut, Roser  
Farré Montalà, Lluís Jordi  
García-Santesmases Fernández, Andrea  
Guim Vallejo, Elena  
López Gómez, Daniel  
Pié Balaguer, Assumpció  
Rodríguez Giralt, Israel

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### Wireless Networks Research Lab (WINE)

The Wireless Networks (WINE) research group is a pioneer in the research and development of technologies that improve how devices capture and convey information. These technologies are present in our daily lives in the form of smartphones, home networks, vehicles and connected household appliances.

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Adelantado Freixer, Ferran  
Afaqui, Muhammad Shahwaiz  
Cano Bastidas, Cristina  
Jorba Esteve, Josep  
Martínez Huerta, Borja  
Melià Seguí, Joan Antoni  
Modernell Echenique, Pablo Daniel  
Ojaghi Kahjogh, Behnam  
Sánchez Correa, Santiago  
Tuset Peiró, Pere  
Vilajosana Guillén, Xavier



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## IN3

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### **K-riptography and Information Security for Open Networks (KISON)**

The KISON group's research line is focused on the compatibility of decentralized network security (ad hoc and peer-to-peer [P2P] networks) and the protection of the intellectual property of digital contents on the internet with users' right to privacy.

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Arnedo Moreno, Joan  
Casas-Roma, Jordi  
García Font, Víctor  
Garrigues Olivella, Carles  
Megías Jiménez, David  
Oukemeni, Samia  
Prieto Blázquez, Josep  
Qureshi, Amna  
Rifà Pous, Helena  
Romero Tris, Cristina  
Salas Piñón, Julián  
Serra-Ruiz, Jordi

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### **Systems, Software and Models (SOM RESEARCH LAB)**

Systems, Software and Models (SOM Research Lab) is a joint ICREA and UOC research team, based at the Internet Interdisciplinary Institute (IN3), that focuses on software modelling (and of the systems with which this software interacts) as a basis for optimizing the software development, maintenance and evolution process.

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Bañeres Besora, David  
Cabot Sagrera, Jordi  
Cánovas Izquierdo, Javier Luis  
Clarísó Viladrosa, Robert  
Daniel, Gwendal  
Ed-Douibi, Hamza  
Gómez Llana, Abel  
Iftikhar Iftikhar, Sidra  
Planas Hortal, Elena

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# Lines of activity

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## Research and innovation

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### UOC-BSA Chair in Applied Research and Data Analysis in Health

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#### Mission

The mission of the UOC-BSA Chair in Applied Research and Data Analysis in Health is to develop significant advances in the application of big data and data analysis in the health field, applying an interdisciplinary approach and involving all of the health system's stakeholders.

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#### Related objectives

To encourage the participation of all the agents involved in the field of big data and data analysis, and its use for promotional, preventive, diagnostic and treatment purposes related to the provision of social and health services.

To generate and transfer innovative solutions based on the identification, integration, processing, analysis and display of data in the decision-making process.

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#### Vision

Our vision is to become a key player in the transformation of the health industry, with innovative solutions based on data analysis and big data technology.

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#### Primary objectives

To improve people's quality of life and their participation in the decision-making process in matters affecting their health.

To improve access to healthcare and to promote equality.

To improve the system's efficiency and make it more sustainable.

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## Research and innovation

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## Publications

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### Articles and book chapters | A selection of 10 articles and book chapters

Novillo-Ortiz, D.; Dumit, E. M.; D'Agostino, M.; Becerra-Posada, F.; Kelley, E. T.; Torrent-Sellens, J., et al. **“Digital health in the Americas: advances and challenges in connected health”**. *BMJ Innovations*. July 2018. 4(3), 123–127. DOI: 10.1136/bmjinnov-2017-000258

Nieto, R.; Boixadós, M.; Hernández, E.; Beneitez, I.; Huguet, A.; McGrath, P. **“Quantitative and qualitative testing of DARWeb: An online self-guided intervention for children with functional abdominal pain and their parents”**. *Health Informatics Journal*. [Date accessed: 16 January 2019]. <https://journals.sagepub.com/doi/abs/10.1177/1460458218779113#articleCitationDownloadContainer>

Lupiáñez-Villanueva, F.; Anastasiadou, D.; Codagnone, C.; Nuño-Solinís, R.; García-Zapirain, Soto M. B. **“Electronic Health Use in the European Union and the Effect of Multimorbidity: Cross-Sectional Survey”**. *Journal of Medical Internet Research*. May 2018. [Date accessed: 16 January 2019]. 20(5), e165.

Gonzalez-Alonso, P.; Vilar, R.; Lupiáñez-Villanueva, F. **“Meeting Technology and Methodology into Health Big Data Analytics Scenarios”**. 2017, IEEE 30th International Symposium on Computer-Based Medical Systems (CBMS), Thessaloniki, Greece, 2018, 284-285.doi:10.1109/CBMS.2017.71

Subirats, L.; Reguera, N.; Bañón, A. M.; Gómez-Zúñiga, B.; Minguillón, J.; Armayones, M. **“Mining Facebook Data of People with Rare Diseases: A Content-Based and Temporal Analysis”**. *International Journal of Environmental Research and Public Health*. 30 August 2018. 15(9). DOI: 10.3390/ijerph15091877

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## Publications

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### Articles and book chapters

Rashid, Z.; Melià-Seguí, J.; Pous, R.; Peig, E. **“Using Augmented Reality and Internet of Things to improve accessibility of people with motor disabilities in the context of Smart Cities”**. *Future Generation Computer Systems*. November 2017. 76, 248-261. <https://doi.org/10.1016/j.future.2016.11.030>

Aymerich, M.; Carrion Ribas, C.; Sánchez Ruiz, E.; Gallo de Puelles, P.; Caïs Fontanel-la, J.; Arroyo Moliner, L., et al. **“Barriers and facilitators to research translation into health care decision making: A scoping review”**. *Annals of Translational Medicine*. May 2017. 4(1), 1013

Novillo-Ortiz, D.; Hernández-Pérez, T.; Saigí-Rubió, F. **“Availability of information in Public Health on the Internet: An analysis of national health authorities in the Spanish-speaking Latin American and Caribbean countries”**. *International Journal Medical Informatics*. April 2017. 100(46), 46-55. DOI: 10.1016/j.ijmedinf.2017.01.013

Gabarron, E.; Fernandez Luque, L.; Schopf, T. R.; Lau, A. Y. S.; Armayones, M.; Wynn, R., et al. **“Impact of Facebook Ads for Sexual Health Promotion Via an Educational Web App: A Case Study”**. *IJEHMC*. 2017. 8(2), 18-32. DOI: 10.4018/IJEHMC2017040102

Zamora, A.; Carrion, C.; Aymerich, M.; Castells, X.; Blanco, L.; Martin-Urda, A., et al. **“Evaluation of a Clinical Decision Support System for Dyslipidemia Treatment (HTE-DLPR) by QoE questionnaire”**. *IJCP*. January 2017. 2(1), 10-16. DOI: <https://doi.org/10.21859/ijcp-020105>

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**Research and  
innovation**

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## **Publications**

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**Scan the QR code to view the other papers published in 2017 and 2018.**



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# Lines of activity

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## Research and innovation

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### Doctoral theses

This section compiles the doctoral theses supervised by UOC faculty that have been defended, deposited or that were in progress during 2018 in the field of e-health.

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#### Theses defended

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##### Title

Using ubiquitous computing for preventing risk behaviors based on smart contexts through mobile devices: an approach for nutrition.

##### Author

Felipe Andres Besoain Pino

##### Supervisor

Antoni Pérez Navarro

##### Date

24/5/2018

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##### Title

Cognitive function enhancing through transcranial magnetic stimulation and video game training: synergistic effects.

##### Author

Marc Palaus Gallego

##### Supervisor

Elena Muñoz Marrón  
Diego Redolar Ripoll

##### Date

23/11/2018

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## Under supervision

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### Title

Evaluating a mobile phone application to improve adolescent access to sexual reproductive health information in a resource limited setting.

### Doctorand

Paul Macharia

### Supervisor

Antoni Pérez Navarro  
Carme Carrión

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### Title

*Prácticas virtuales en el aula de ciencias de la salud: ¿Cómo y por qué?.*

### Doctorand

Victoria Agullo Zahino

### Supervisor

Alicia Aguiló Martínez

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### Title

*Uso de la simulación en ambientes virtuales 3D en línea para el aprendizaje de destrezas motoras básicas en cirugía de invasión mínima en pediatría.*

### Doctorand

Fernando Álvarez López

### Supervisor

Francesc Saigí Rubió

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### Title

*Diseño e implementación de una estrategia B-learning como apoyo a la formación inicial de estudiantes de medicina: la resolución de problemas como estrategia para el aprendizaje efectivo de la bioquímica.*

### Doctorand

Isabel Enciso Galindo

### Supervisor

Alicia Aguilar Martínez  
Atanasi Daradoumis  
Haralabus

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# Lines of activity

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## Research and innovation

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## Doctoral theses

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### Under supervision

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#### Title

*Las comunidades de práctica médica: una opción para la generación de conocimiento y la formación médica continuada en línea.*

#### Doctorand

Maria Corpus Gómez Calderón

#### Supervisor

Francesc Saigí Rubió

---

#### Title

*Diseño de un instrumento virtual autoadministrado con soporte visual y asistente personal para la realización de encuestas alimentarias.*

#### Doctorand

Elena Maestre Gonzalez

#### Supervisor

Francesc Xavier Medina Luque

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#### Title

*Intervención educativa con game based learning para modificar conocimientos sobre hábitos alimenticios saludables en escolares.*

#### Doctorand

Claudio Antonio Mardones Osses

#### Supervisor

Alicia Aguilar Martínez  
Francesc Xavier Medina Luque

---

#### Title

How eLearning contributes to achieving eHealth key competencies. A study of the eHealth competencies developed through eLearning methodologies of the Medical Studies Degree's curriculum design.

#### Doctorand

Israel Conejero Arto

#### Supervisor

Marta Aymerich  
Roumiana Peytcheva-Forsyth





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UOC\_Research

@eHealthUOC #eHealthUOC

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# Lines of activity

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## Research and innovation

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**11 December 2018**

### Meetup Health 2.0 Barcelona

Lecture “Technological persuasion to improve lifestyles”.

Manuel Armayones

CREC Eixample

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**13-15 November 2018**

### IAU 2018 International Conference

Official presentation of the UOC as a leader in the work on the third Sustainable Development Goal (SDG 3), within the framework of the International Association of Universities.

Carme Carrion

Kuala Lumpur, Malasia

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## Conferences and scientific seminars

This section includes the events that members of the eHealth Center have attended or taken part in.

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**30-31 October 2018**

### RITMOS 2018

Cooperation in coordinating the workshop, participation in the round tables and presentations in the areas of persuasion, education and e-health literacy, assessment and data science.

Manuel Armayones

Carme Carrion

Eulàlia Hernández

Jordi Conesa

Instituto Distrital de Recreación y Deporte,  
Bogotá

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**16-18 October 2018**

### HEALTHIO 2018

Active participation in this congress-fair which attracted 4,500 visitors, showcasing the sector’s latest innovations and attended by hospitals, insurance companies, technology companies, researchers and patients’ associations.

A number of UOC professors and eHealth Center members took part, with workshops, talks, moderated debates and project presentations.

Jordi Conesa

Manuel Armayones

Carme Carrion

Eulàlia Hernández

Rubén Nieto

Beatriz Sora

Francesc Saigi

Montse Serra

David Bañeres

Carlos Casado

Fira de Barcelona, Barcelona

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**13 October 2018**

### **eHealth Donostia**

Presentation of challenges and opportunities in the use of data for health promotion.

Jordi Conesa

Palacio Miramar, San Sebastián

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**9 October 2018**

### **Workshop “eHealth. Current challenges for and needs of healthcare professionals”**

Analysis and debate concerning professionals’ current challenges and needs within the framework of e-health, both on a global level and in Andalusia in particular.

Carme Carrion

UOC centre, Seville

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**5 October 2018**

### **International Online Symposium on Health Technology Trends in Ibero-American Countries**

The International Online Symposium on Health Technology Trends in Ibero-American Countries targeted professionals from all fields of health, system engineers and other health technology-related professions.

The symposium was organised by the University of Caldas, the National University of Colombia, the Feevale University, the University of Veracruz, the Universitat Oberta de Catalunya (R&I, eHealth Center), the University of Zaragoza, the University of the Republic of Uruguay, the Centre for Biomedical Engineering (NIB), the Adaptive Smart Environments research group, the Gerontology and Geriatric Research Group, and the Telesalud group.

Manuel Armayones

En línea

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**4 October 2018**

### **#EnModoAviación: Can a mobile phone cure?**

Participation in the round table organized by the Spanish Society of Cardiology, debating the pros and cons of the technology-health alliance.

Carme Carrion

Casa del Corazón, Madrid

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**4 October 2018**

### **Reps Zaragoza 2018**

Presentation of the eHealth Center and its main spheres of activity at the conference, with particular emphasis on the strategies for assessing e-health interventions.

Carme Carrion

CaixaForum, Zaragoza

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# Lines of activity

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## Research and innovation

**2 October 2018**

### **E-health and new professions. Now what? The big question that young, highly confused people are asking**

Co-organization and participation in the event, which was devoted to discussing the health-related technological skills that the work world is demanding and education often does not take into account.

Carme Carrion

UOC centre, Madrid

**2 October 2018**

### **Virtual reality in psychological interventions with children and teenagers: not just glasses and videos**

Participation in the event organized by the UOC University Master's Degree in Child and Adolescent Psychology: Intervention Techniques and Strategies on the professional use of virtual reality (VR) in health care.

Eulàlia Hernández

Movistar Centre, Barcelona

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## Conferences and scientific seminars

**27 September 2018**

### **Workshop “eHealth: Current challenges for and needs of healthcare professionals”**

Participation in the seminar organized by the UOC's Faculty of Health Sciences, at which various professionals from the Catalan ecosystem outlined health professionals' challenges and needs on a global level, and in Catalonia in particular.

Carme Carrion

Movistar Centre, Barcelona

**27 September 2018**

### **iWOPI**

Talk entitled “Toward positive persuasion in eHealth”, within the framework of the meeting with digital marketing experts and top sports practitioners at the offices of the company iWopi at 22@.

Manuel Armayones

Barcelona

**20 September 2018**

### **XPatient Barcelona**

Participation as a speaker at the XPatient Barcelona congress, organized by Hospital Clínic and Eurecat to present the COMJunts app, developed as part of a UOC-UPF project funded by RecerCaixa.

Manuel Armayones

CaixaForum, Barcelona

**19 September 2018**

### **Opening of UOC Point in Vigo**

Official opening of the new UOC point at Impact Hub Vigo and organization of the round table “How can e-health services be accelerated when technology is no longer the problem?”.

Marta Aymerich

Manuel Armayones

Impact Hub, Vigo

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**6 September 2018**

### **Presentation of the COMJunts app at CosmoCaixa**

Presentation of the app created by Pompeu Fabra University (UPF) and the Universitat Oberta de Catalunya (UOC) that aids communication between families with children suffering from rare diseases and healthcare professionals, recognized as best app for patients at the eHealth Awards 2018.

Manuel Armayones

CosmoCaixa, Barcelona

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**4-6 July 2018**

### **CIDUI 2018**

Presentation of the Booter and Emotional Thermometer projects, focused on literacy and mood detection, with potential applications in health.

Manuel Armayones

Beni Gómez

Palau de Congressos de Girona  
(Girona Conference Centre)

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**25-29 June 2018**

### **Psychology of the worrying. Moving toward synthetic humanity?**

Participation in the UNED's summer course on psychology, health and the new technologies.

Manuel Armayones

UNED Barbastro, Osca

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**26 June 2018**

### **2nd Seminar on Health Literacy Initiatives**

Opening lecture of the EASP's annual seminar.

Manuel Armayones

Andalusian School of Public Health

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**15 June 2018**

### **3rd Health Hackathon. How to use big data and artificial intelligence to improve health**

Participation in different round tables (related with data science in health and digital literacy in health).

Manuel Armayones

Jordi Conesa

CNIC, Madrid

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# Lines of activity

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## Research and innovation

**29 May 2018**

### Participation and co-organization of the COCEMFE National Conference

The eHealth Center's Eulàlia Hernández, Jordi Conesa and Manuel Armayones teamed with visiting researcher Éder Peña in the preparatory working session for the National Conference on Physical and Organic Disability, Ageing and Chronicity, sponsored by COCEMFE Catalonia. Manuel Armayones was appointed the conference's scientific director and other participants included professors Eulàlia Hernández, Asun Pié and Israel Rodríguez Giralt, all from the Faculty of Psychology and Education Sciences, and Jordi Conesa, professor at the Faculty of Computer Science, Multimedia and Telecommunications.

Manuel Armayones

Eulàlia Hernández

Jordi Conesa

Barcelona Consortium (COCEMFE)

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## Conferences and scientific seminars

**29 May 2018**

### “Disabled people's right to lifelong personal independence”

Participation in a co-creation session to prepare the 2019 National Conference of the Spanish Confederation of People with Physical and Organic Disability (COCEMFE), with the UOC as the conference's scientific director.

Manuel Armayones

Eulàlia Hernández

Jordi Conesa

Consorcio de Barcelona (COCEMFE)

**27 May 2018**

### HIMSS Europe and health 2.0 Conference

Talk on the importance of psychological persuasion applied to health promotion.

Manuel Armayones

Sitges, Barcelona

**24-25 May 2018**

### CINDA

Presentation of the UOC's eHealth Center at the Inter-university Development Centre.

Marta Aymerich

Monterrey Campus, Mexico

**23 de mayo de 2018**

### 20th anniversary of SABIEN

Participation in a round table at the event celebrating the 20th anniversary of one of the leading groups in the health field.

Manuel Armayones

Polytechnic City of Innovation, Valencia

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**17 May 2018**

### **1st First Internal Workshop Supporting Interdisciplinary Research in E-Health**

Organization of the workshop by the eHealth Center and the UOC Knowledge Transfer and Research Support Office (OSRT) to promote applications for projects in the field of e-health.

UOC Tibidabo centre, Barcelona

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**10 May 2018**

### **3rd Nursing Workshop, Hospital Comarcal Pallars TIC's AVANCEM**

Presentation of professionals' e-health learning needs. Promotion of the University Master's Degree in E-Health.

Carme Carrion

Hospital Comarcal del Pallars, Tremp

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**10 April 2018**

### **UOC-UdG Big Data and Machine Learning Workshop**

Course on big data and data science given to researchers at the University of Girona.

Jordi Conesa

University of Girona, Girona

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**14-16 March 2018**

### **14th SEEDO Congress**

Presentation of a poster for the EVALAPPS project to assess apps targeting the treatment of overweight and obesity.

Manuel Armayones

La Llotja Conference Centre, Lleida

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**22 February 2018**

### **mHealth BCN Conference 2018**

Presentation on the assessment of m-health.

Manuel Armayones

CAMFIC headquarters, Barcelona

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**8 February 2018**

### **C4PE: Technology and psychology**

Discussion on the need to design mobile phone apps using persuasive techniques.

The workshop was included in the Cluster for Patient Empowerment, sponsored by Takeda, Philips and Elsevier within the framework of the Madrid Impact Hub.

Manuel Armayones

Impact Hub, Madrid

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# Lines of activity

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## Research and innovation

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**26 January 2018**

### **1st International Research Conference on eHealth and eWell-being**

**The Conference, organized entirely by the eHealth Center, was attended by over a 100 people.** With the title “Evaluating the evidence for a paradigm shift in health”, it brought together professionals, academics, researchers and other leading figures from the world of health and well-being. The event was opened by the UOC’s president, **Josep A. Planell**. He welcomed everyone who had come and highlighted that “e-health is also proposing a similar revolution, putting the citizen at the centre, with the focus on education and advocating an understanding of health that goes beyond illness, integrating knowledge and placing emphasis on well-being”.

He then introduced the programme’s keynote address, given by the UOC’s new honorary doctor, **Alejandro Jadad**, with the

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## Conferences and scientific seminars

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title “Creating a health pandemic: what role can digital technologies play?”.

The conference’s first part continued with the talk entitled “Building learning-based health systems using big data: challenges and promises”, given by **Stein Olav**, director of the Norwegian Centre for E-health Research. This was followed by a presentation and reflections on the importance of evaluating health interventions by **Carme Carrion**, coordinator of the UOC eHealth Center’s Design and Assessment of e-Health Interventions area and professor at the Faculty of Health Sciences, with her talk “Evaluating mobile health: conceptualization of a general framework”.

The conference’s second part opened with the presentation of the social innovation and health promotion case study, “Life Park (Colombia)”, given by **Carlos Palacio**, dean of the University of Antioquia’s Faculty of Medicine. The event closed with a round

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table among all the speakers moderated by **Elia Gabarron**, a postdoctoral researcher at the University Hospital of North Norway’s Norwegian Centre for E-health Research.

The eHealth Center organized this conference with the subtitle “**Evaluating the evidence for a paradigm shift in health**”. The purpose was to share the evidence-based practices used by international experts in the use of data and digital technologies in health. The keynote address was given by Alejandro Jadad, founder of the Canadian Centre for Global eHealth Innovation, now eHealth Innovation at UHN.

Implementing effective digital approaches for promoting health and well-being requires addressing the challenge of generating scientific evidence that analyses digital actions’ viability and also accurately assesses these actions’ impact in society.





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# Lines of activity

## Training



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Within the training line of activity, the following programmes stand out:

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### **New University Master's Degree in E-Health from the UOC's Faculty of Health Sciences**

The Faculty of Health Sciences has started to teach the online University Master's Degree in E-Health. This programme caters for the present needs of the health sector, using technology as the connecting thread for improving the efficacy and efficiency of interventions intended both for health promotion and education of the healthy population and for diagnosing and monitoring acute and chronic patients.

The master's degree targets all health professionals, whether or not their tasks involve patient care. Particular emphasis is placed on aspects such as the need to train health professionals in digital skills and design, as the paradigm shift in the health world, driven by citizen empowerment in self-care, has increased the demand in the online health sector.

The general objective is to train health professionals so that they can acquire the necessary skills that will allow them to detect, design, implement and evaluate possible technological solutions for facilitating individual empowerment, participatory health and the digital transformation of the health world.

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# Doctoral programmes

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### Joint doctoral programme in Bioinformatics

Carme Carrion, professor at the Faculty of Health Sciences and coordinator of the eHealth Center's Design and Assessment of e-Health Interventions area, is director and coordinator of the joint doctoral programme in Bioinformatics. This programme is organized by the best experts from six Catalan universities (UAB, UPC, UdG, UdL, UOC and UVic-UCC) in the field of bioinformatics. Another participant in the programme is Bioinformatics Barcelona (BIB), which brings together universities, research centres and companies with the goal of positioning Barcelona and Catalonia among the world leaders in this field.

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### Doctoral programme in the Information and Knowledge Society

All four research groups – Cognitive NeuroLab, eHealth Lab, Food Lab (from the Faculty of Health Sciences) and PSiNET (from the Faculty of Psychology and Education Sciences) – are taking part in the **basic and applied health sciences** research line within the UOC's doctoral programme in the Information and Knowledge Society.

# Lines of activity

## Training

### Doctoral programmes

#### Doctoral programme in Network and Information Technologies

The eHealth Center is developing three thesis proposals (*Data Mining and Community Detection in Graphs (Graph Mining)*; *Data Mining and Deep Learning in Healthcare*; and *Health Data Science*) in the data science research line within the doctoral programme in Network and Information Technologies. These proposals are carried out with the purpose of promoting health and well-being.

#### Doctoral programme in Education and ICT (E-learning)

This doctoral degree contains different thesis proposals related with e-health that are included in different research lines:

##### Research lines

*Flexible and Open Online Education*

*Management and Organization in Online Education*

##### Thesis proposals

*Collaborative and interdisciplinary learning network: community of practice applications, and learning & teaching*

*2.0 tools in health and food sciences*

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## Consulting and services



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Our team of researchers, designers and developers works to develop solutions that help take steps towards improving people's quality of life. There are no two projects alike, every challenge is different, and the eHealth Center offers a unique, individualized solution for each one.

The UOC eHealth Center is specialized in research in e-health tools; we are open to working with other organizations in the sector to contribute scientific evidence.

The consulting projects and contract research we offer to institutions help them develop and improve their knowledge, efficiency and impact.

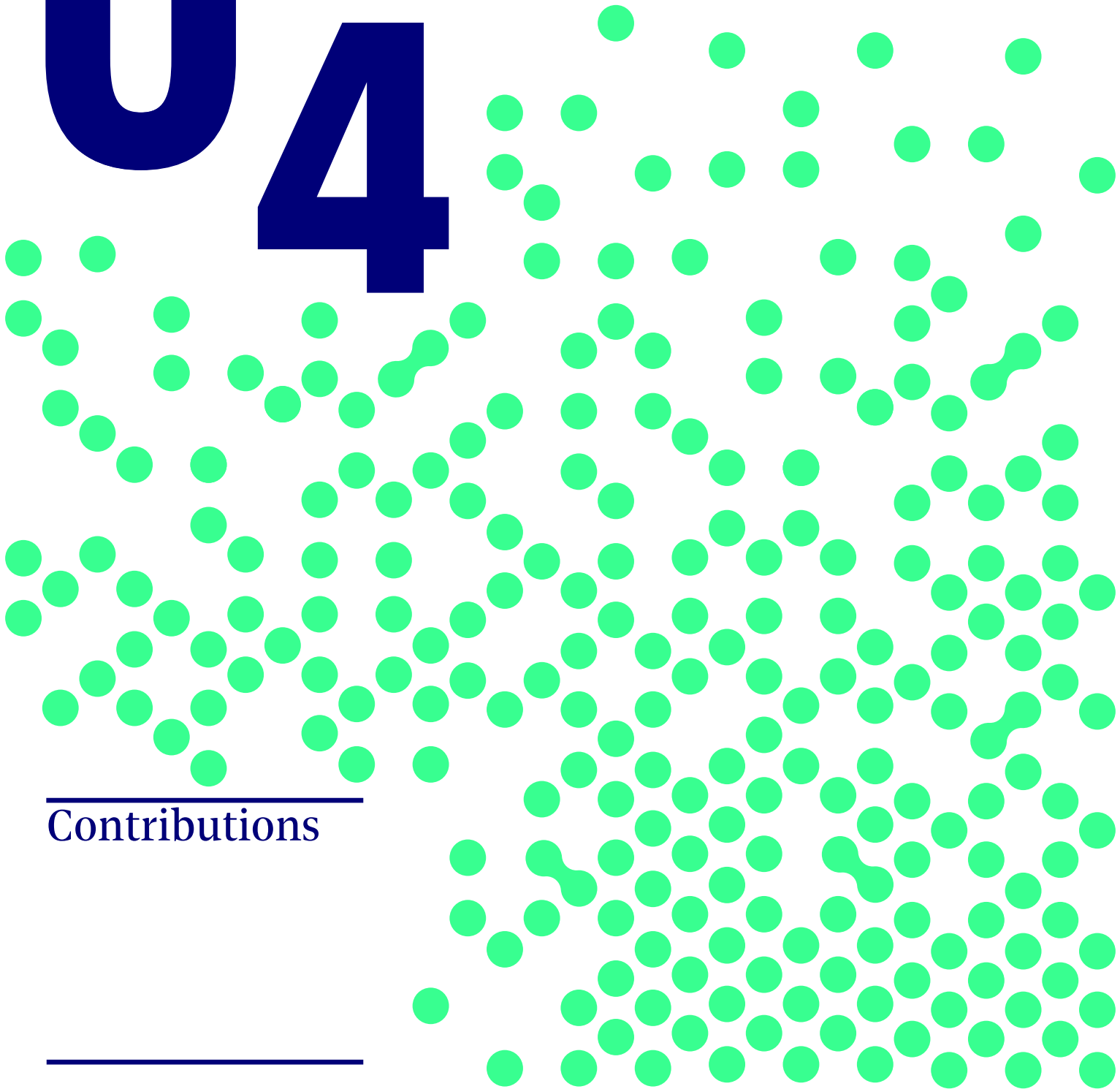
We use the Open UOC eHealth methodology to design our digital solutions. This is a work format in which stakeholders work together in identifying challenges and innovative solutions. Furthermore, this challenge can be shared with the entire UOC community with the aim of generating different improvement and solution proposals. Thanks to this collaborative work methodology, implemented from the project's inception, the solution can be adapted to the needs of the target sector, guaranteeing its success.

# 04

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Contributions

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## Contributions

**The eHealth Center works to establish alliances and collaborations with local and international centres, organizations and institutions in the health field with the goal of implementing e-health initiatives and projects aimed at finding solutions for society's needs and improving people's quality of life and empowerment.**

This section lists the centres, organizations, institutions and companies with which we cooperate, the networks we promote and the collaborations carried out internally within the UOC.

# Contributions

## External collaborations



## Agreements

The following cooperation agreements have been signed:

**2017**



Institute for Global Health Equity & Innovation, Universidad de Toronto

Centre for Global eHealth Innovation, University Health Network

DKV Seguros y Reaseguros, SAE, i DKV Servicios, SA

**2018**



Spanish Federation of Rare Diseases (FEDER)

Mutual Midat Cyclops (MC Mutual)

Cima Health, SL (Cita.iO)

Fundación iSYS



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## External collaborations

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## Networks

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### **RITMOS (Ibero-American Network for Mobile Technologies in Health)**

This network seeks to foster the use of mobile devices to promote health and improve the patient's well-being and treatment processes. The RITMOS network is the outcome of a project led from the UOC by Francesc Saigó i Rubió and approved in 2014 by the Ibero-American Programme of Science and Technology for Development (CYTED). The network consists of 13 working groups and 58 researchers from Argentina, Bolivia, Chile, Colombia, Ecuador and Spain.

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### **CICUT (Latin American University Collaboration Cluster in Telemedicine)**

The Latin American University Collaboration Cluster in Telemedicine (CICUT) is a project promoted by the Universitat Oberta de Catalunya (UOC). Its mission is to promote and develop academic and technological cooperation programmes in research and innovation in telemedicine, with the different member universities working together in a network.

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### **IAU (International Association of Universities)**

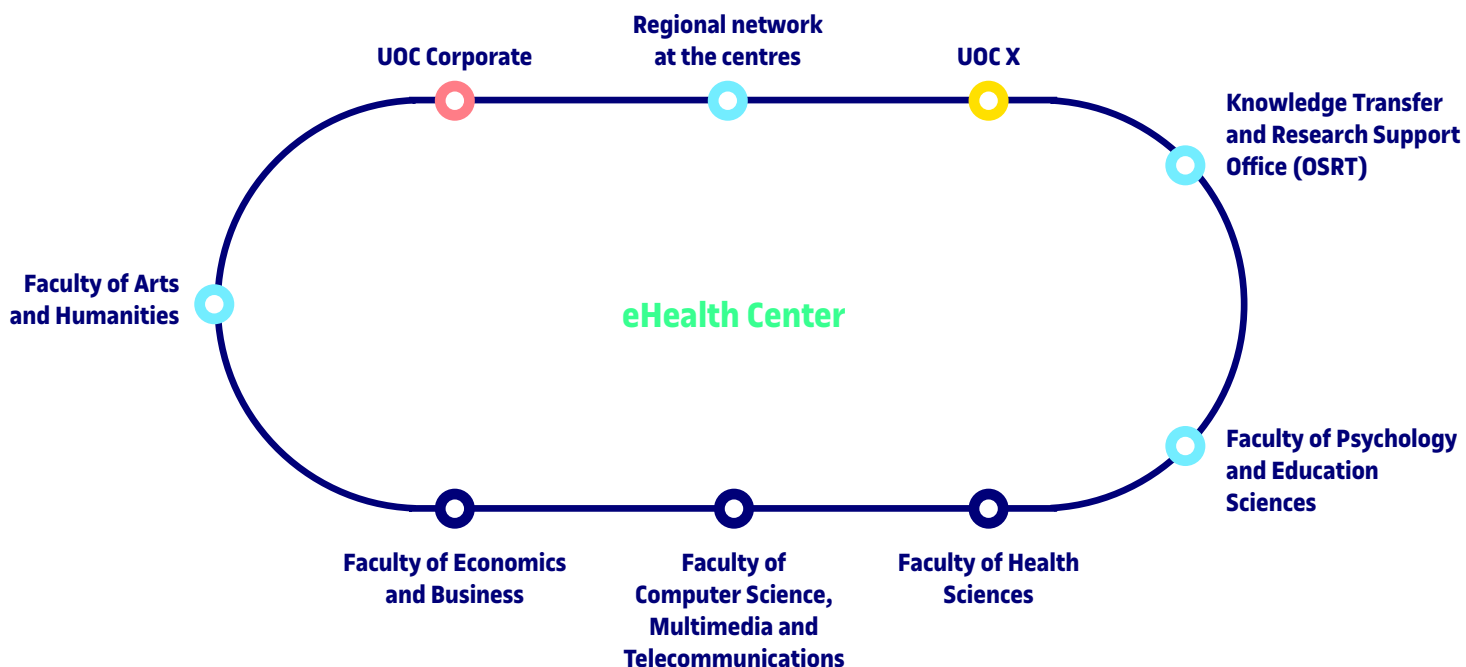
Founded in 1950, the IAU is a global association that brings together 650 institutions of higher education and national and regional associations from around the world. Its mission is to strengthen higher education worldwide and provide a global forum for institutional leaders and associations to debate, examine and act on issues of common interest. The UOC is one of its members and, through the eHealth Center, leads the cluster focused on the Sustainable Development Goal related with health and quality of life (SDG 3).

# Contributions

## Internal collaborations



We work across the board, collaborating jointly with the faculties, UOC X, UOC Corporate, the UOC's network of centres and the UOC Knowledge Transfer and Research Support Office to develop more comprehensive and innovative educational projects and programmes in the field of e-health.





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