UOC

Five years promoting research in digital health

Report
2017-2022

eHealth Center
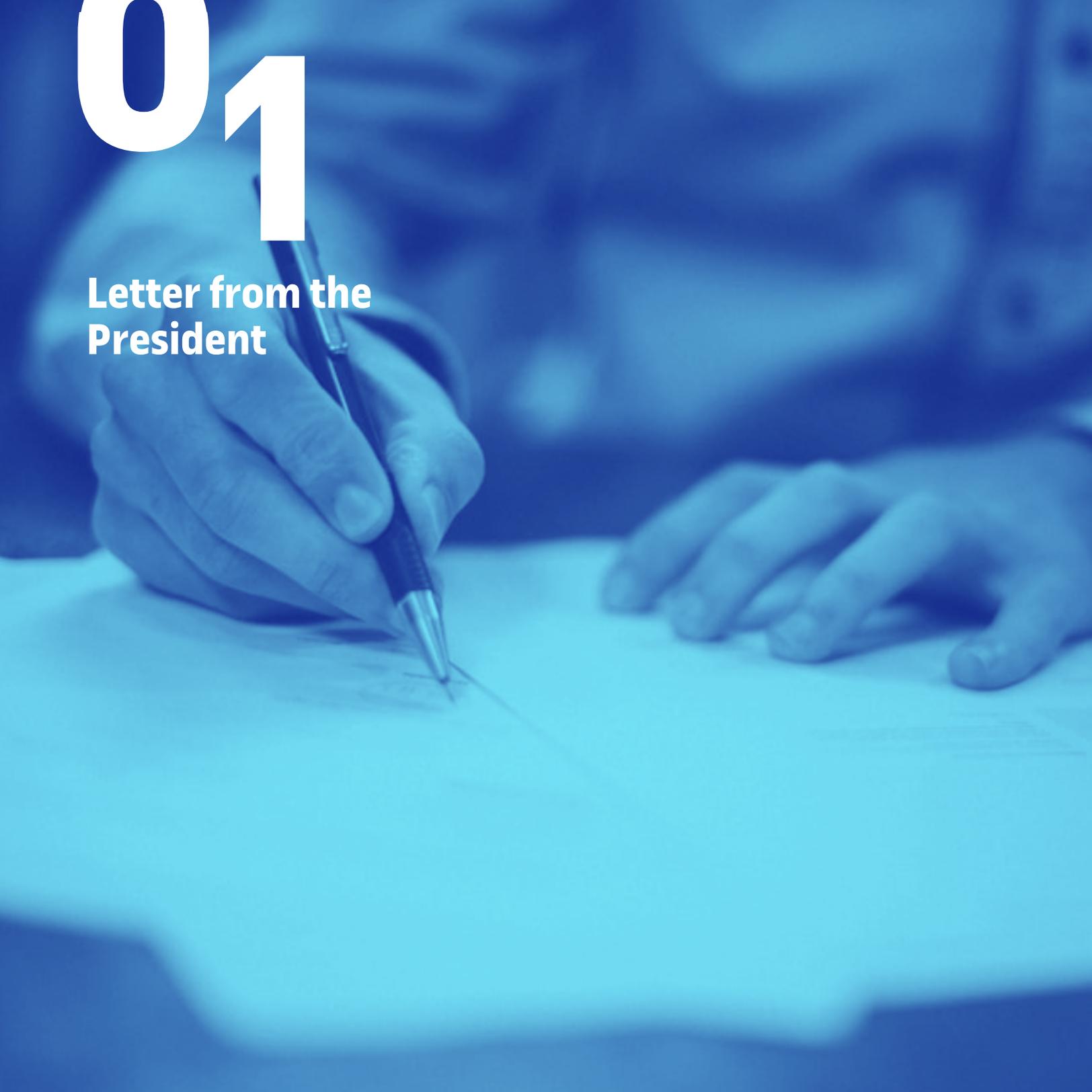
Universitat Oberta
de Catalunya

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Letter from the President

"We invite you to take a look back over these five years in which the eHealth Center has been promoting research in digital health at the UOC."

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

The Universitat Oberta de Catalunya's commitment to research and innovation, in tandem with its academic tradition, which focuses on the intersection between society and technology, led to the creation of the eHealth Center, its digital health research centre, in 2017.

Over the past five years, we have consolidated our position as a research centre for digital health and the impact of information and communication technologies (ICT) on health. We research how technologies can contribute to improving the health and well-being of individuals and groups. We're interested in discovering how digital health helps us to know more about our health and make better decisions about it, and how the use of technology, communication and data enables us to strengthen our healthcare system and the people who work in it.

With the aim of promoting interdisciplinary and cross-cutting research in digital health within the university, over these five years the

eHealth Center has taken on four affiliated research groups: ADaS Lab (Applied Data Science Lab), AIWELL Lab (Artificial Intelligence for Human Well-being), GRECIL (Cognition and Language Research Group) and PSiNET (Psychology, Health & the Net). We have also supported other groups at the university doing research in digital health.

At the eHealth Center, we work in an interdisciplinary way and in collaboration with the stakeholders in the health ecosystem. We do this by being internationally connected, producing and contributing scientific evidence and promoting solutions that contribute to the current and future challenges of health and well-being. That is why, during this time, we have forged key alliances with institutions such as the World Health Organization (WHO), the International Association of Universities (IAU), the Agency for Health Quality and Assessment of Catalonia (AQuAS) and Catalonia Bio & Health Tech.

02

Organization

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.

Marta Aymerich
UOC Vice President for Strategic Planning and Research, President of the eHealth Center Executive Board

Marc Alabert
Director of Strategic Planning at the UOC

Ramon Gomis
Dean of the Faculty of Health Sciences

Teresa Guasch
Dean of the Faculty of Psychology and Education Sciences

Pastora Martínez
UOC Vice President for Globalization and Cooperation

Daniel Riera
Dean of the Faculty of Computer Science, Multimedia and Telecommunications

Staff

The eHealth Center staff is responsible for running the centre's activities and for supporting the research groups. It comprises a number of professional profiles from different areas of our university, thus taking an interdisciplinary approach that guarantees the best possible results in the field of digital health.

Management

Marta Aymerich
President of the
eHealth Center
Executive Board

Carme Carrion
Scientific
coordinator

Alba Coma
Technical
coordinator

Albert Barberà
Director of the
eHealth Center
(July 2019 - January 2022)

Management and support for research and projects

Imma Alberch
Communications
specialist

Eva Aumatell
Research and
projects specialist

Marc Graells
Project support
specialist

Ignacio del Arco
Research and
project specialist
(September 2018 -
December 2020)

Jean-François Colas
Research and
projects specialist
(March 2020 - June 2022)

Liv Raphael
SDG3 cluster
director

Noemí Robles
Research and
projects specialist

Israel Conejero
Project
coordinator
(December 2019 -
October 2022)

Lourdes Reyes
Technical support
(January 2019 -
January 2022)

Enrique Rodríguez
Research and
projects specialist
(October 2018 -
July 2019)

Research staff attached to the centre

Llorenç Andreu
Principal
investigator at
NeuroDevelop
eHealth Lab
(GRECIL)

Manuel Armayones
Principal
investigator at
Behavior Design
Lab (PSiNET)

Marco Inzitari
Head of the
Barcelona Aging
coLLaboratory

Jordi Conesa
Coordinator of the
Data Science in Health Area
(September 2018 - July 2019)

Agata Lapedriza
Principal
investigator at
AIWELL

Ferran Prados
Principal
investigator
at ADaS Lab

Eulàlia Hernández
Coordinator of the Education,
Empowerment and
Participation in Health Area
(September 2018 - January 2021)

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 proven track records in the field of e-health.

Joan X. Comella
Director of Research & Innovation at Hospital Sant Joan de Déu de Barcelona

Alejandro Jadad
Centre for Global eHealth Innovation awarded an honorary doctorate by the UOC

Itziar Larizgoitia
Director of Public Health for the Basque Country

Núria Oliver
Scientific Director and co-founder at ELLIS Alicante Foundation

Sara Pérez
Neuropsychologist. Profesor at Universidad Complutense de Madrid

Xavier Prats Monné
Strategic initiatives advisor for the UOC and European Commission Director-General for Education and Culture and Health

Antoni Trilla
Head of the Preventive Medicine and Epidemiology Service at Hospital Clínic de Barcelona.

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.

Public health and quality of life

Pau Batlle
(Dipsalut)

Jordi Naval
(InProTher)

Carme Borrell
(Barcelona Public Health Agency)

Carmen Cabezas
(Health Department of the Government of Catalonia)

Antoni Dedeu
(WHO Regional Office for Europe at WHO European Centre for Primary Health Care)

Josep Rodríguez-Roca
(Barcelona Social Services Consortium)

Health management

Anna Ripoll
(Bioinformatics Barcelona)

Luis Carretero
(Consultant,Telomera Healthcare)

Daniel Luna
(Hospital Italiano de Buenos Aires)

Felip Miralles
(EURECAT)

Carlos Mur
(SEDISA)

Citizens, patients and NGOs

Alfonso Bustos
(Médecins Sans Frontières, until 2019)

Juan Carrión
(FEDER, Spanish Federation of Rare Diseases)

Tomás Castillo
(Plataforma de Organizaciones de Pacientes)

María Ángeles Medina
(Asociación Salud Digital)

Pedro Soriano
(Consultant in patient experience)

Health professionals

Josep Maria Castel
(Institute of Catalan Pharmacology Foundation, University Hospital of Vall d'Hebron)

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

Lluís G. Pareras
(COMB, Official College of Physicians of Barcelona)

Pilar Saura
(Dean of the Faculty of Medicine at Alfonso X el Sabio University)

Jose M. Tormos
(Guttmann University Institute of Neurorehabilitation)

Jordi Serrano
(UniversalDoctor)

Marta Príncep
(BHV Partners)

U3

Five years promoting interdisciplinary research in digital health: some facts and figures

Facts and figures

Publications

200
scientific publications

139
open access publications

35
publications at conferences

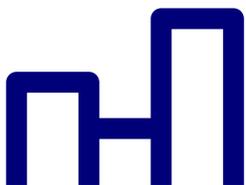**1**
book

8
book chapters

Citations

1,490
scientific publications indexed in Web of Science (WoS)

1,939
scientific publications indexed in Scopus

3,861
citations in Google Scholar

Facts and figures

25 theses

18 projects

Leader of the International Association of Universities cluster for Sustainable Development Goal 3, within its global cluster on higher education and research for sustainable development

UNIVERSITIES 4 GOOD HEALTH

UOC Universitat Oberta de Catalunya

WHO Collaborating Centre in eHealth

Support for the WHO Collaborating Centre for Digital Health at the UOC
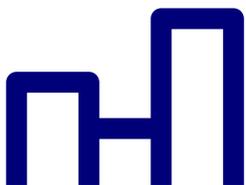
Research groups

14 eHealth Talks

4 affiliated research groups

11 collaborating research groups

3 eHealth Skills

04

Five years promoting digital health research at the UOC: the details

We conduct **research** into **digital health**, into the impact of **ICT on health**. We investigate how technologies contribute to **improving the health and well-being** of individuals and groups; how digital health helps provide us with more **knowledge** and a better **capacity to make decisions** about **our health**; how it allows us to strengthen – through technology, communication and data – health systems and health professionals. We work in an **interdisciplinary** way and in collaboration with stakeholders in the **health ecosystem**. We do this by being internationally connected, producing and contributing scientific evidence and promoting solutions that contribute to the current and future challenges of health and well-being.

Research groups and eHealth community

Individual investigator

CareNet
Care and Preparedness in the Network Society

Ferran Prados Carrasco

WiNE
Wireless Networks

Cognitive Neuro Lab

Individual investigator

Individual investigator

SOM
Systems, Software and Models Lab

ADaS Lab
Applied Data Science Lab

eHealth Lab

Behavior Design Lab (PSiNET)
Psychology, Health & ICT

AIWELL
AI for Human Well-being

Open Evidence Research Group

NeuroDevelop eHealth Lab (Grecil)
Cognition and Language Research Group

Manuel Armayones Ruiz

Àgata Lapedriza García

FoodLab
Food, Nutrition, Society and Health Interdisciplinary Research Group

Individual investigator

Individual investigator

KISON
K-riptography and Information Security

Llorenç Andreu Barrachina

GRIAL-UOC
Inter-university applied linguistics research group

KIMO
Knowledge and Information Management in Organizations

i2TIC

Individual investigator

Individual investigator

Individual investigator

The centre is home to **four affiliated research groups**, but offers its services and support to **all research staff** who wish to carry out a project in **digital health**, and to all **research groups** working in this field. In this way, we promote a **community** spirit.

■ Affiliated groups　■ Collaborating groups　Principal investigator

In recent years the eHealth Center has invited research groups to join it, which has resulted in the affiliation of four groups. Each of these four groups has a principal investigator who is dedicated to digital health research on a full-time basis.

AIWELL: AI for Human Well-being
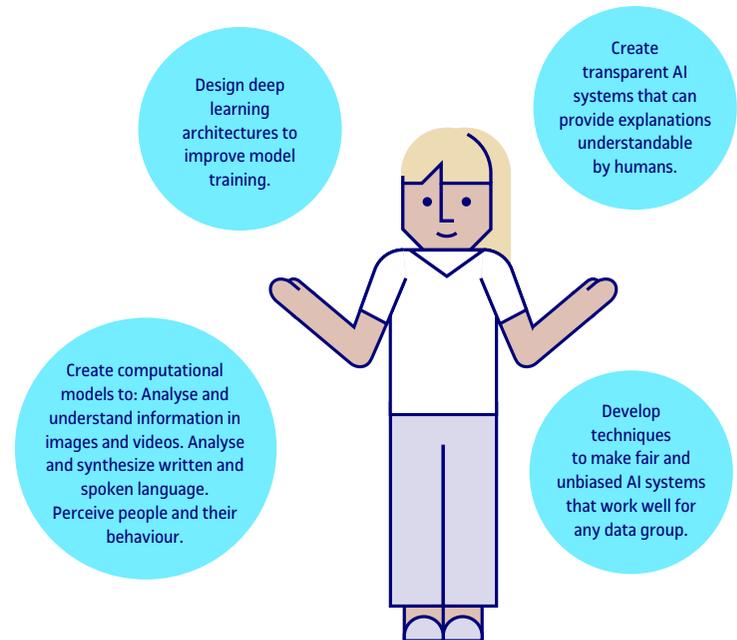## Computer vision systems applied to health

Principal investigator:
Àgata Lapedriza García

The line of research of the **AI for Human Well-being (AIWELL) group**, formerly SUNAI, focuses on the **development of computer vision systems,** i.e. creating machines with the ability to see. These systems can help detect emotional stress or when a person may need help in the event of a fall. Within the field of computer vision, AIWELL focuses in particular on explainability in artificial intelligence (AI). The aim of explainability in AI is to develop AI systems that, in addition to making decisions, also give explanations about why they make them. This helps determine whether the decisions are reliable or not.

Line of research ⤴

Objectives
Advancing AI research to create reliable AI technologies to promote and improve human well-being

Design deep learning architectures to improve model training.

Create transparent AI systems that can provide explanations understandable by humans.

Create computational models to: Analyse and understand information in images and videos. Analyse and synthesize written and spoken language. Perceive people and their behaviour.

Develop techniques to make fair and unbiased AI systems that work well for any data group.

ADaS Lab: Applied Data Science Lab
Data science applied to clinical data analysis

Principal investigator:
Ferran Prados Carrasco

The **Applied Data Science Lab (ADaS Lab)** line of research focuses on **the application of data science to the optimization of clinical data analysis**, particularly in medical image processing. Through the multidimensional analysis of medical data, they seek to develop next-generation biomarkers that will allow personalized treatments to be implemented for neurodegenerative diseases with a major impact on our society, such as Alzheimer's disease, multiple sclerosis, Parkinson's disease, ataxia or strokes.
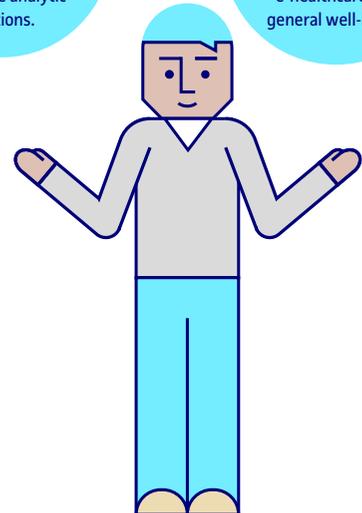
Line of research ⬈

Objectives

Improve people's health using the power of data science. ADaS Lab turns data science innovations into real public-health improvements:

Designing AI-based tools to enable the next generation of biomarkers and predictive analytic solutions.

Building ultra-efficient AI-based solutions for optimal data analysis that leads to precision e-healthcare and general well-being.

Behavior Design Lab (PSiNET)
Adopting a healthy lifestyle means creating new habits

Principal investigator:
Manuel Armayones Ruiz

The **Behavior Design Lab**, formerly **PSiNET**, works with models and methods to identify psychological variables related to the use of ICT in the field of digital health and to influence this use. It also aims **to ensure that interventions are designed to have a real, measurable effect on people's health behaviour**. It seeks to understand and have an effect on factors related to the design of applications and interventions (in both the clinical and public health scopes) that are intended to change people's behaviour.
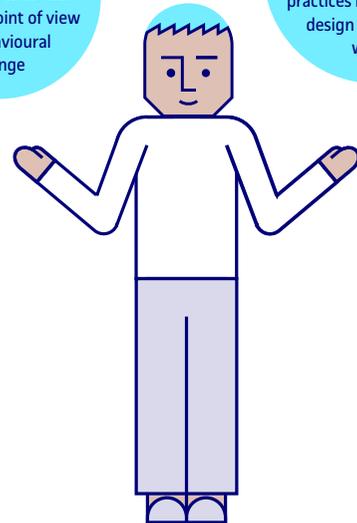
Line of research ↗

Objectives

Our aim is to understand and describe the ICT-mediated principles, models and techniques that foster behavioural change, both for individual and public health. Our work focuses on two main areas:

The assessment and analysis of current intervention models from the point of view of behavioural change

The design of new interventions that take account of our knowledge of best practices in behavioural design all over the world

NeuroDevelop eHealth Lab (GRECIL)
Uses and applications of eHealth in neurodevelopmental disorders

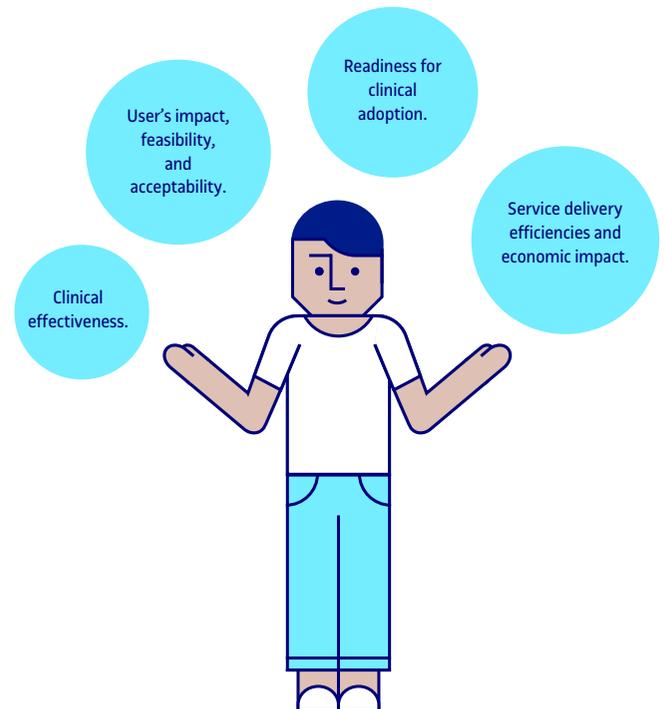Principal investigator:
Llorenç Andreu Barrachina

The **Cognition and Language Research Group** (GRECIL), alongside a team of paediatric neuropsychologists from Sant Joan de Déu Barcelona Hospital, focuses on **research and knowledge transfer in the field of digital health applied to neurodevelopmental disorders** (NDDs). The research group works to develop simple, efficient, effective and economical digital solutions to improve the treatment of children with NDDs.

Line of research ↗

Objectives

One of the main objectives of the eHealth Center is to provide evidence on how the application of technology improves the health system

The NeuroDevelop eHealth Lab's research aims to promote randomized control trials that analyse and check the following criteria:

Readiness for clinical adoption.

User's impact, feasibility, and acceptability.

Service delivery efficiencies and economic impact.

Clinical effectiveness.

Collaborating groups
(July 2017 - July 2022)

CareNet

Care and Preparedness in the Network Society
It aims to understand the impact of technoscience on the social and cultural reconfiguration of care, as well as of warning and preparedness for crises, disasters and emergencies.

Principal investigator: Israel Rodríguez Giralt

Cognitive NeuroLab

It studies the neural mechanisms of human cognitive processes, their alterations and their rehabilitation through non-invasive brain stimulation (NIBS) techniques and other non-pharmacological therapies.

Principal investigator: Elena Muñoz Marrón

eHealth Lab

Design, implementation and evaluation of various digital solutions aimed at improving the effectiveness, efficiency and safety of different interventions for health professionals and healthy patients and members of the public. It also focuses on health promotion and disease prevention through digital solutions.

Principal investigator: Carme Carrion Ribas

FoodLab

(Food, Nutrition, Society and Health Interdisciplinary Research Group)
It studies the human diet and its relationship with society and health, linked to both nutrition and disease prevention as well as food culture.

Principal investigator: F. Xavier Medina

GRIAL-UOC

It focuses on cognitive linguistics and the application and transfer of linguistic knowledge to computational language processing methods and resources, which can have different uses in fields ranging from lexicography to language learning and translation. MOMENT, its latest research project, has focused on discourse analysis in mental health

Principal investigator: Marta Coll-Florit

i2TIC

The group's digital health research focuses on studying how digital health and telemedicine adopt and transform the practices of healthcare professionals, healthcare activity, the professional-patient relationship, and the results of healthcare organizations and systems. Recently, a new line of research has been launched on the link between digitalization, work and health.
Principal investigator: Joan Torrent Sellens

KIMO

(Knowledge and Information Management in Organizations)
It focuses on strategic and organizational aspects of information and knowledge management based on the development of theoretical frameworks, social network analysis, bibliometrics and scientometrics, the use of computer simulation models and in-depth case studies.
Principal investigator: Agustí Canals Parera

KISON

(K-riptography and Information Security for Open Networks)
It works to sustainably reconcile the security of networks and the information on them with users' right to privacy, within the current context of the hyper-digitalization of society and of practically every area of human activity. The group focuses its attention on security and privacy applied to open networks and information.
Principal investigator: David Megías Jiménez

SOM

(Systems, Software and Models Lab)
SOM researches the challenges of software engineering by combining modelling techniques, formal methods and artificial intelligence.

Principal investigator: Jordi Cabot Sagrera

Open Evidence Research Group (active until 2022)

The applied research on digital health focuses on the deployment of e-health benchmarking among primary care medical staff, on integrated care in European regions, and on the study of innovation and cost-effectiveness indicators in digital health.

Principal investigator: Francisco Lupiáñez Villanueva

WiNE

(Wireless Networks)
In the field of health, the group is working on indoor positioning technologies as well as the capture of biomechanical information to contribute to the digitalization of the field and improve the quality of the information available to address aspects of people's well-being and quality of life.

Principal investigator: Xavier Vilajosana Guillén

Interdisciplinary research activities and projects

The eHealth Center, as part of its mission to promote research into digital health at the university, develops activities for the UOC community to boost research and innovation in digital health.

eHealth Project: From Idea to Project

In order to **promote research and innovation projects in digital health at the UOC**, the eHealth Center has launched an **annual call for grants applications** aimed at master's degree students who have written a master's degree final project on digital health and want to make their project a reality. The centre awards a grant of €3,000 to each winning project.

The **winning projects** are announced during **the eHealth Project:** From Idea to Project event, where each participant presents their project, which is assessed by a qualified judging panel. This symposium is organized jointly with the Faculty of Health Sciences and the Faculty of Computer Science, Multimedia and Telecommunications.

This call for applications has been held twice

The first call was aimed at students and alumni of the UOC's University Master's Degree in E-Health, from the Faculty of Health Sciences.

And the second, in addition to the University Master's Degree in E-Health, also included students of the Joint University Master's Degree in Bioinformatics and Biostatistics (UOC, UB) and from the University Master's Degree in Data Science, from the Faculty of Computer Science, Multimedia and Telecommunications.

eHealth Project:
From Idea to Project
Winning projects

QuiròfanHUB mobile app, created out of the need to resolve patients' doubts stemming from a lack of knowledge about a surgical procedure, which can lead to anxiety and a more negative experience. By **Esther Méndez,** anaesthesiologist at Bellvitge University Hospital and a student on the University Master's Degree in E-Health.

Link to the project

BOOST #Cataract #app, a mobile app that predicts the surgical quality outcome of cataract operations in the early postoperative period. **Mónica Lecumberri**, student on the University Master's Degree in E-Health.
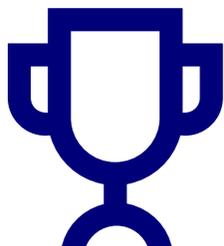
Link to the project

"Early detection of Alzheimer's disease using new semi-supervised models", a project addressing new methods of natural language processing applied to patients with speech disorders, particularly aphasia. By **Mónica Romero**, student on the University Master's Degree in Data Science.

Link to the project

During the first semester of 2022, work has been carried out on the third **Health Project: From Idea to Project**, which will take place at the end of the year and will be aimed at students of the University Master's Degree in E-Health, the Joint University Master's Degree in Bioinformatics and Biostatistics (UOC, UB) and the University Master's Degree in Data Science.

Call for proof-of-concept proposals

During this time, the eHealth Center has issued two calls for applications for grants aimed at researchers who want to develop initial proof-of-concept research (the latest call is still pending its award). The centre offers the university's research community grants of €6,000 to carry out proof-of-concept research projects with a maximum duration of twelve months.

The aim of these calls is to provide spaces for **collaborative and interdisciplinary research at the university** and, to this end, those interested in applying for grants must have at least one researcher from a scientific discipline other than their own participating in and co-leading their project.

The call for applications for these grants promotes **permeability between digital health and other fields of knowledge, encourages collaborative work between researchers from different disciplines and promotes multidisciplinary and interdisciplinary research**.

Winning projects from the first call

(settled on 18/11/21)

Digital_Phenotyping
(Àgata Lapedriza and Xavier Baró)

The goal of this project is to test different machine learning techniques to obtain the benchmark results on the detection of meaningful symptoms for the diagnosis of mental disorders in our new MPR dataset.

Big data and multiple sclerosis
(Ferran Prados and Jordi Casas)

The main goals are: to define the mathematical framework to jointly analyse several brain connectivity networks, to translate the findings to a real scenario with multiple sclerosis patients and analyse the potential use as biomarkers, and to explore the relationship between the new proposed measures and the cognitive function or the disability.

HealthCare Logistics in Depopulated Spain
(Cristian Castillo and Laura Calvet)

The mission of this project is to develop a pilot to analyse the effects of a novel approach to improve the way home healthcare services are delivered today by means of hybridizing ICTs with routing solutions.

Competences in e-psychology
(Antoni Baena and Belén Jiménez)

The objective is to create a conceptual model based on the practice of e-psychology and to know what digital competences a psychology professional should have (in the field of health, work or education) in order to propose how these competences should be empirically and effectively assessed.

Activities and events

Aimed at professionals

We promote scientific discussion activities, tools and training resources aimed at researchers carrying out digital health research at the university and professionals from outside the UOC.

eHealth Talks

Since March 2021, the centre has been promoting and consolidating the organization of eHealth Talks, **monthly scientific discussion seminars** with the participation of members of the UOC's eHealth community and experts from other institutions, with the aim of promoting digital health research at the university.

They provide a forum for dialogue and knowledge exchange open to the UOC's entire e-health community, i.e. researchers, research groups and doctoral students carrying out digital health research and innovation at the university. The working language of the eHealth Talks is English.

8 June 2022
3.30h (CEST)
Online
#eHealthUOC

eHealth Talks
The Barcelona Aging Living CoLLaboratory: a participatory research and innovation ecosystem
With Marco Inzitari, Researcher and Professor in the Faculty of Health Sciences (UOC)

3 novembre
15.30h (CEST)
Online

eHealth Talks: Desinformació científica: de les fake news a la fake science
Amb Alexandre López-Borrull, professor dels Estudis de Ciències de la Informació i de la Comunicació de la UOC.

eHealth Talks

14

eHealth Talks have been held during this time:

10 March 2021
NeuroDevelop eHealth Lab's research
Llorenç Andreu
(NeuroDevelop eHealth Lab - GRECIL)

14 April 2021
ADaS Lab's research
Ferran Prados
(ADaS Lab)

12 May 2021
SUNAI's research on digital health
Àgata Lapedriza
(AIWELL, formerly SUNAI)

9 June 2021
Behavior Design Lab's research
Manuel Armayones
(Behavior Design Lab - PSiNET)

7 July 2021
Catalan digital health plan: from strategy to reality
Jordi Piera (CatSalut)

15 September 2021
Beyond the health emergency: care, social sciences and the pandemic
Israel Rodríguez (CareNet)

13 October 2021
The Digital Skills of Healthcare Professionals
Marisa Merino (OSI Tolosaldea)

3 November 2021
Talks: Science misinformation: from fake news to fake science
Alexandre López-Borrull (GAME)

12 January 2022
Patient experience assessment
Joan Escarrabill
(Hospital Clínic de Barcelona)

9 February 2022
Chatbots, the next revolution in e-health or just a passing fad?
Jordi Cabot (SOM lab)

9 March 2022
BCNatal Fetal Medicine Research Center: current and future studies
Elisenda Bonet-Carne
(BCNNatal Fetal Medicine Research Center and ADaS Lab)

11 May 2022
Investigating developmental differences: insights from congenital deafness and looked after children
Gary Morgan
(NeuroDevelop eHealth Lab - GRECIL)

8 June 2022
The Barcelona Aging Living coLLaboratory: a participatory research and innovation ecosystem
Marco Inzitari
(UOC Faculty of Health Sciences)

13 July 2022
ITC for chronic pain: evolution or revolution?
Rubén Nieto and Beatriz Sora
(eHealth Lab)

eHealth Skills

The eHealth Skills are workshops on digital health research tools and methodology organized by the eHealth Center. The aim of these workshops is to offer methodological resources and specific tools for digital health research to the entire eHealth community at the UOC in order to improve their skills in this field.

Happy Hour:

2 workshops on mobile app development in the field of health.

Workshop on data, research and health

a workshop led by researcher Maria Garcia, from the Vascular Health Research group at IDIAP Jordi Gol, on the information system for the development of research in primary care (SIDIAP).
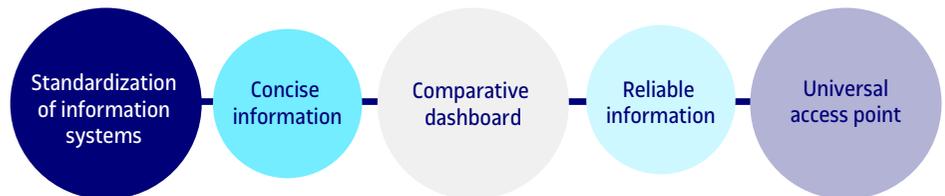
Co-creation group on digitalization of the multiple sclerosis care process

Digitalization solutions

Researchers from the UOC's eHealth Center and the HiTT Foundation publish a guide on how to improve care for people with multiple sclerosis and, at the same time, increase the efficiency and effectiveness of the health system.

This guide is the result of an exchange between an interdisciplinary team (specialists in nursing, neurology, psychology or the health system, together with patient associations) and is intended to accompany the digital transformation applied to multiple sclerosis.

More information

Link to infographic

Standardization of information systems — Concise information — Comparative dashboard — Reliable information — Universal access point

Research team: Albert Barberà and Carme Carrion (UOC) and Oriol Solà-Morales (Fundació HiTT)

Activities and events

Open to the public

With the aim of becoming a leading national and international platform for reflection on the field of digital health, the eHealth Center has organized several events during this period.

MOOC

Health Literacy: Proposals and Ideas to Care for Others and Ourselves (MOOC)

Link to the video ↗

The Health Literacy MOOC, promoted by the eHealth Center and led by faculty members Eulalia Hernández and Manuel Armayones (Faculty of Psychology and Education Sciences) and Antoni Baena (Faculty of Health Sciences), gave professionals and citizens the tools to care for and improve their health and that of the people around them, as well as promoting conscious decision-making. The course, which was a pioneering initiative in Spain, ran for five weeks and took place during the first quarter of 2020.

Activities and events

Open to the public

What If Forum 2021

In 2021, the eHealth Center worked on the organization of the first eHealth What If Forum, an international event promoted by the centre with the aim of promoting debate on health and technology. The event was held in November and analysed and shared the changes that occurred during the pandemic in terms of digital health.

The first eHealth What If Forum was held under the leadership of the centre's director at the time, Albert Barberà, and under the academic coordination of Francesc Saigí, a member of the Faculty of Health Sciences and an eHealth Center collaborator

The eHealth What if Forum 2021
Què passaria si la digitalització accelerada per la COVID-19 ens permetés transformar els sistemes de salut?

17/11 · 24/11 · 1/12
15:30 h

Link to the video ⬈

Communication actions and media impact #WhatIfForumUOC

3 conferences

12 international experts

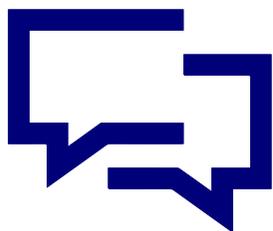**12** media impacts

6 news items published

More than
200
social media posts

See collection of actions ⬈

Sessions What If Forum 2021

01

17/11/2021

New digital strategies focused on health and the individual

Speakers:
Corpus Gómez Calderón, PhD in e-learning and Director of HR at Dénia Marina Salud Hospital.
Santiago García Blanco, General Manager of Digital Transformation and User Relations, Cantabria Regional Ministry of Health.
Mikel Ogueta Lana, Deputy Director's Office for Quality and Information Systems, Osakidetza (Basque public health service).
Elena Torrente Segarra, Deputy Director of Digital Health Development and Head of DKV Digital Health Innolab.

Moderator: **Albert Barberà**, Director of the UOC's eHealth Center.

Opening of the session: **Marta Aymerich,** UOC Vice President for Research and Strategic Planning.

Link to the video 🔗

02

24/11/2021

The digital transformation of the health system in Catalonia

Speakers:
Óscar Solans, Functional Manager of E-health. Department of Health. Government of Catalonia.
Jordi Piera, Director of the Office for e-Health Strategy of Catalonia.
Unai Sanchez, Director of Technolgoy and Co-founder of HumanItCare.
Mireia Sans, Director of the Comte Borrell de Barcelona primary healthcare centre and president of the E-health Doctors Section of the Medical Association of Barcelona (CoMB).

Moderator: **Carme Carrion**, Associate dean for research of the UOC's Faculty of the Health Sciences.

Link to the video 🔗

03

01/12/2021

Lessons from the pandemic: more international collaboration, better health

Speakers:
Walter Curioso, Member of the WHO Digital Health Roster of Experts. Vice Rector for Research, Continental University, Peru.
Daniel Otzoy, Founder and Director of RECAINSA, the Central American Health Informatics Network.
Sandra Eugenia Gallegos Mejía, Doctor and surgeon and member of the Colombian Ministry of Health.
Janine Sommer, nurse, and patient portal and telemedicine project coordinator in the Health Informatics department at Buenos Aires' Hospital Italiano.

Moderator: **Francesc Saigí**, director of the WHO collaborating centre for eHealth and member of the UOC's Faculty of Health Sciences.

Closing: **Albert Barberà,** irector of the UOC's eHealth Center.

Link to the video 🔗

Events and series

Global Access to COVID-19 Vaccines Series. Multidisciplinary Keys to a Complex Problem

In the summer of 2021, the UOC organized a series of five online conversations to analyse the relationships needed between science, health, economics and politics to ensure fair access to COVID-19 vaccines. Several experts from the UOC and other institutions took part in the talks, which aimed to explain this complex reality from an interdisciplinary perspective.

The organization of the event was backed by the university's Office of the Vice President for Globalization and Cooperation, which co-organized it with the eHealth Center. Albert Barberà, director of the centre at the time, was the scientific coordinator.

More information ⬈

Webinar: Higher education under examination: are we ready to train the future healthcare workforce?
27 October 2020

A webinar on the education of future healthcare professionals and the impact of the pandemic on the healthcare model, with the participation of several members from the international cluster. The SDG 3 cluster brought together experts from every continent to share views and strategies to encourage and promote sustainable development in the field of health and well-being in higher education.

The COVID-19 pandemic has taken a toll on healthcare systems and workers alike.

Link to the video ⬈

mHealth BCN Conference

The eHealth Center supports the organization of the annual mHealth BCN Conference, led by the iSYS Foundation. Launched in 2018, the conference has become a leading event on digital health and mobile health in the city of Barcelona. The centre participates in the scientific and coordinating committee, through Manuel Armayones, and also provides logistical and communication support.

Presentation of the UOC-COCEMFE Chair in Personal Autonomy and Digital Health
3 December 2020

The chair was presented during the **conference on the Right to Personal Autonomy**, organized by **Barcelona City Council**, on 3 December 2021, to celebrate the International Day of Persons with Disabilities.

Seminar on Loneliness, Disability and Mental Health: Realities and Needs
16 December 2021

In December 2021, the eHealth Center organized, through the UOC-COCEMFE Chair in Personal Autonomy and Digital Health, an **event for reflection** and debate on the scientific evidence on the concepts of mental health, loneliness and disability.

This activity was part of the debate space created by **La Marató de TV3** Catalan television telethon, which in 2021 had the goal of promoting social awareness and research on mental health.

Link to the video ↗

Webinar: Exploring the nexus between health, equity, and gender
7 June 2020

The cluster brings together experts from several continents to participate in a seminar to reflect on questions such as: What do we mean by equity and health? How do conscious and unconscious gender biases affect healthcare education and policies with regard to their design, recommendations and implementation? What challenges do these biases pose and what is the role of digital health in overcoming them? The aim of the activity is to explore the relationship between gender equity and health.

Link to the infographic ↗

eHealth Outreach

During this time, the eHealth community has participated in several scientific outreach activities that have been organized in Catalonia, such as the Science Festival and European Researchers' Night.

Science Festival, 2021
Does persuasive technology limit our freedom?
Manuel Armayones, Behavior Design Lab

European Researchers' Night, 2021
Empathetic robots to help people
Àgata Lapedriza, AIWELL

European Researchers' Night, 2021
The Kinect sensor and possibilities for rehabilitation and intervention in language disorders
Llorenç Andreu, NeuroDevelop eHealth Lab (GRECIL)

European Researchers' Night, 2021
ICOnnecta't: a digital ecosystem for psychosocial support in cancer patients
Joan C. Medina, researcher at the Faculty of Psychology and Education Sciences and eHealth Center collaborator.

European Researchers' Night, 2021
The challenges of medical imaging applied to neurology
Ferran Prados, ADaS Lab
Cancelled for reasons beyond the UOC's control

Collaborations and alliances

The centre is committed to being a facilitator of reflection and change in the health system. To this end, it continues to work collaboratively with other institutions and to create synergies within the framework of national and international networks.

WHO Collaborating Centre for Digital Health

The eHealth Center supports the Faculty of Health Sciences, which was appointed as a Collaborating Centre for Digital Health by the World Health Organization (WHO) in 2018, in the activities, projects and research that the WHO assigns to the UOC.

Link to the web ⬈

The director of the collaborating centre is Francesc Saigí, a member of the Faculty of Health Sciences and of the eHealth community.

UOC Universitat Oberta de Catalunya

WHO Collaborating Centre in eHealth

In the first half of 2022, the WHO renewed this commitment with the UOC for a further two years.

Inter-American Development Bank and the Ministry of Education, Culture, Science and Technology of Argentina: digital health training programme in Argentina

The UOC – with over 25 years' experience in quality higher education that is 100% online – and its eHealth Center have launched a new training programme on digital health in Argentina, which has been funded by the Inter-American Development Bank (IDB).
The programme is part of the Argentina Campus Global plan, an initiative of the Ministry of Education, Culture, Science and Technology of Argentina that promotes the international mobility of Argentinean students, teaching staff, researchers and artists overseas, and of foreigners in Argentina.

The aim of this training course is to enable healthcare professionals in Argentina to develop the necessary skills to adapt scientific and professional processes using technological tools, which will enable them to detect, design, implement and evaluate possible technological solutions that promote the empowerment of people, participatory health and the digital transformation of the world of healthcare.

Principal investigator: Marta Aymerich.

More information ⬈

Collaborations and alliances

The International Association of Universities (IAU): SDG 3 (Agenda 2030) cluster leadership

In July 2018, the International Association of Universities chose the Universitat Oberta de Catalunya to lead the cluster for Sustainable Development Goal 3, Good Health and Well-being, part of its global cluster on Higher Education and Research for Sustainable Development.

The UOC leads this cluster through the eHealth Center and, during this time, the centre has consolidated this leadership by organizing a number of internal meetings, activities, hiring Liv Raphael as the person who heads the cluster, and publishing a website that features all the activity generated by the cluster.

For this assignment, the UOC put together a team from universities around the world that work together to foster the understanding and use of the Good Health and Well-being SDG in higher education. The activities undertaken by the SDG 3 cluster are based on an international and multidisciplinary approach.

The cluster consists of the following institutions:

Universitat Oberta de Catalunya (Spain)

Universidad de Caldas (Colombia)

Makerere University (Uganda)

Western Sydney University (Australia)

University Gadjah Mada (Indonesia)

University College Dublin (Ireland)

Karolinska Institutet (Sweden)

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Collaborations and alliances

Barcelona Aging coLLaboratory (BALL)

During this period, work has been carried out on the development of BALL, the first Living Lab to be set up in Catalonia focusing on developing innovative solutions for older people. This space has been promoted by a broad cross-section of civil society. The Lab is located in the Parc Sanitari Pere Virgili and will be launched in October 2022.

Within the UOC, BALL will be part of the eHealth Center, which will participate in its strategic committee with the rest of the founding partners, will be an active driving force behind the initiative and will promote several of the Lab's projects focused on digital health.

eHealth Center staff: **Marco Inzitari** (one of the brains and driving forces behind BALL), **Carme Carrion** and **Daniel López**.

Directorate-General for Health of the European Commission and Government of Andalusia's Fundación Progreso y Salud (Progress and Health Foundation, FPS): Training in the development of clinical practice guidelines on rare diseases

The eHealth Center participated in a European tender that aimed to develop **clinical practice guidelines (CPGs) and clinical decision support tools (CDSTs) for rare diseases**. The project was coordinated by the Government of Andalusia's Fundación Progreso y Salud (FPS) and funded by the European Commission's Directorate-General for Health.

The centre's participation in the project involved leading the training of more than **150 healthcare professionals from the 24 European Reference Networks (ERNs) in rare diseases**, providing them with tools and resources to develop these CPGs and CDSTs. The course took place during the second quarter of 2021.

eHealth Center Team : Albert Barberà, Israel Conejero and Marta Aymerich.

COCEMFE: UOC-COCEMFE Chair in Personal Autonomy and Digital Health

The UOC and the Spanish Confederation of People with Physical and Organic Disabilities (COCEMFE) launched the UOC-COCEMFE Chair in Personal Autonomy and Digital Health in 2021 with the aim of applying the concept of personal autonomy to facilitate decision-making and enable independent living throughout a person's life. The chair will work to eradicate the stigma commonly associated with disabled people, from the understanding that anyone can experience periods of functional limitation at some time in their lives.

The chair, under the **academic direction of Manuel Armayones**, is part of the eHealth Center.

Collaborations and alliances

Other collaborations

Agency for Health Quality and Assessment of Catalonia (AQuAS) ↗

Spanish Digital Health Association (ASD) ↗

The International Association of Universities (IAU) ↗

CataloniaBio & HealthTech ↗

Centre for Digital Therapeutics, University Health Network ↗

HiTT Foundation ↗

Empordà Health Foundation (FSE) ↗

Bellvitge Biomedical Research Institute (IDIBELL) ↗

Municipal Institute for People with Disabilities (IMPD) ↗

Spanish Health Literacy Network ↗

SalusCoop Citizen Cooperative of Health Data for Research ↗

Evaluation Service of the Canary Islands Health Service (SESCS) ↗

University of Caldas ↗

National University of Quilmes - Mobile Health Observatory (Argentina) ↗

Vall d'Hebron Research Institute (VHIR) ↗

TECSAM Network (Parc Sanitari Sant Joan de Déu) ↗

Xartec Salut ↗

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

In addition, since January 2020, the centre has been committed to World Neglected Tropical Diseases Day, an international initiative launched in 2020 and supported by the World Health Organization.

Link to the infographic ↗

A group of 20 diseases that occur in tropical and subtropical conditions

They cost billions of dollars every year for developing economies

€

05

Some of our projects and results

COMJunts

It is a web app that aims to facilitate medical communication for families who have children with a rare disease.

Research team:
Rosa Estopà and Mercè Lorente (IULA-UPF), Ona Domènech (IULA-UPF and UOC), Manuel Armayones, Beni Gómez-Zúñiga, Modesta Pousada and Alícia García-Oliva (UOC), Eduardo Tizzano (Hospital Universitari Vall d'Hebrón) and Jordi Cruz, Anna Ripoll and Regla Garci (ERDF).
Period: 2018

Read article ↗

Assisted driving in the hospital environment

The AIWELL research group is working on the design of a robotic car to reduce the stress of paediatric patients undergoing surgery or invasive treatment. This project is carried out in collaboration with MIT (Massachusetts Institute of Technology), Sant Joan de Déu Barcelona Hospital, Hyundai and Affectiva, among other institutions.

Research team :
AIWELL (PI: Àgata Lapedriza).
Period: 2021 - present

DARweb

Online psychosocial intervention for children with recurrent abdominal pain and their families. The solution uses ICT to facilitate access.

Research team:
Rubén Nieto (PI), Mercè Boixadós and Eulàlia Hernández.
Period: 2014-2017

Study on international telemedicine in Latin America: motivations, uses, results, strategies and policies

The i2TIC research group led a study to find out the main issues related to the development of telemedicine in Latin America. The study focused especially on the policies, regulatory and legal aspects, and problems related to health that can be addressed through the use of telemedicine.

Authors: Francesc Saigí-Rubió, Joan Torrent-Sellens, Noemí Robles, José Enrique Pérez Palaci and María Isabel Baena.

Read article ↗

Habeats

Participation in the form of contract research in the development of the Habeats app with the aim of helping people overcome alcohol and tobacco withdrawal.
More specifically, the centre was involved in the behavioural design process and developed a significant part of the app's content.

Research team: Manuel Armayones
PI of Behavioral Design Lab

Promotion of a survey on the social perception of COVID-19 vaccines

The centre promoted a study to find out opinions of the COVID-19 vaccines among the Spanish population and professional healthcare staff. Led by researcher Francesc Saigí, the study launched an online survey to find out the social perception of vaccines and, based on the results, to develop strategic recommendations to improve their acceptance..

Research team:
Francesc Saigí, Salvador Macip, Marina Bosque and Hans Eguia.
Period: 2021

PREVENIR (Oral language intervention programme in early childhood education for the prevention of reading difficulties)

GRECIL's NeuroDevelop eHealth Lab research group is working on the PREVENIR project, a project funded by the Spanish Ministry of Science and Innovation. The main goal is to design, develop and implement an intervention programme, called PREVENIR, based on scientific evidence, for the prevention of reading difficulties through oral language work in early childhood education.

Research team:
NeuroDevelop eHealth Lab (principal investigator: Andreu Llorenç).
Period: present

Applying multilayer analysis to morphological, structural and functional brain networks to identify relevant dysfunction patterns

The **ADaS Lab** research group led an interdisciplinary group of scientists from fields such as computer science, data science, statistics, physics and medicine to carry out a study to better understand how the brain works and how it is interconnected.

Research team: ADaS Lab
Authors: Jordi Casas Roma, Eloy Mártinez de las Heras, Albert Solé Ribalta, Elisabeth Solana, Elisabet Lopez Soley, Francesc Vivó, Marcos Diaz Hurtado, Salut Alba Arbalat, Maria Sepúlveda, Yolanda Blanco, Albert Saiz, Javier Borge Holthoefer, Sara Llufriu and Ferran Prados.

Read article ↗

Aplicació EVALAPPS

A quality assessment tool for weight management mobile apps, aimed at professionals and users.

EVALAPPS is a project funded by the Institute of Health Carlos III, the Spanish Ministry of Economy and Competitiveness and the European Regional Development Fund (ERDF).

Research team
Carme Carrion (coordinator), Noemí Robles and Francesc Saigí.
Period: 2017-2021

Read article ↗

PSICODEM website and app

A tool aimed at caregivers and professionals specializing in dementia to help them choose the best psychosocial intervention for dementia symptom management.

Research team:
Marta Aymerich, Carme Carrion and Noemí Robles
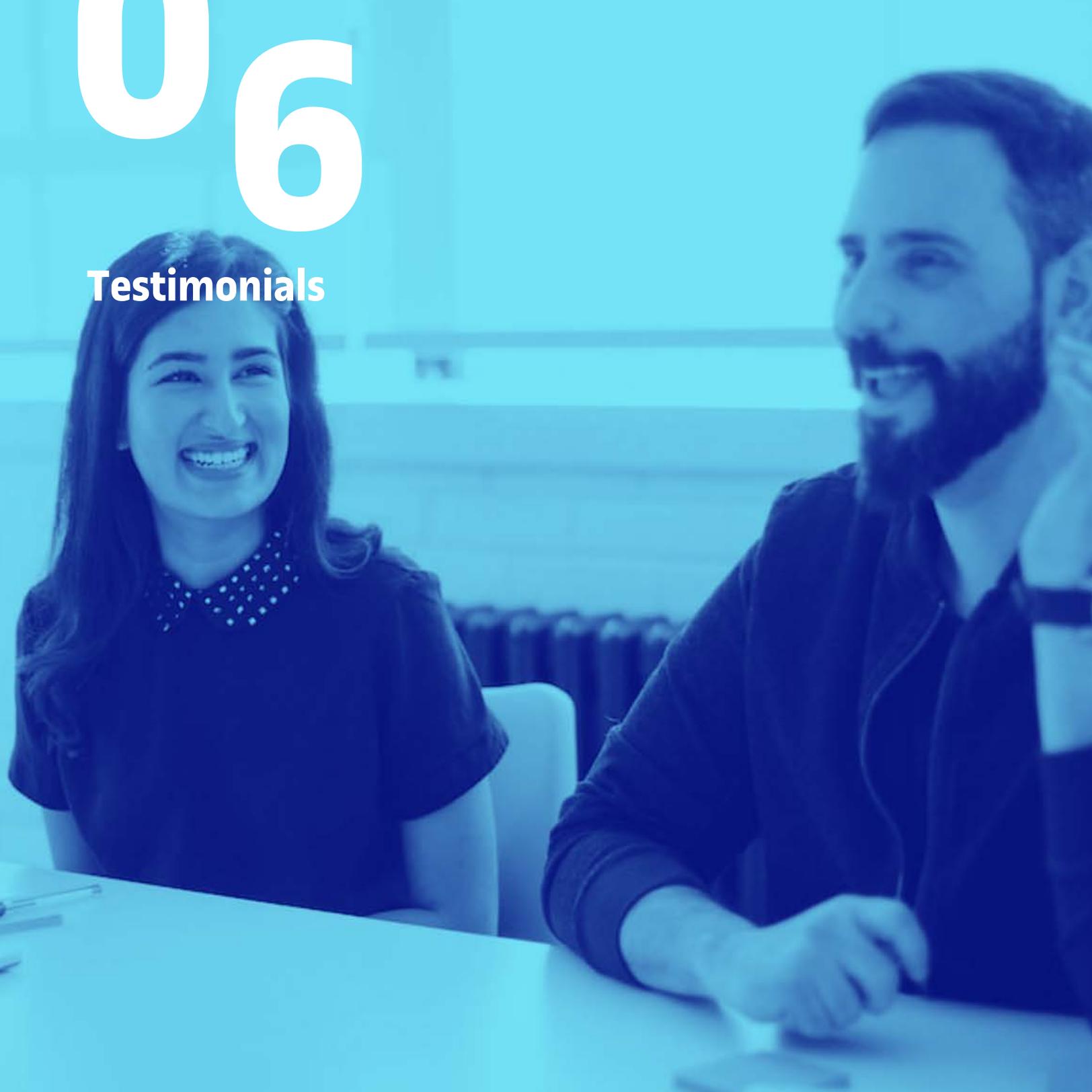**Period: 2010-2021**

Read article ↗

AUTAPP

The AUTAPP project, carried out together with Parc Taulí University Hospital and funded by the Instituto de Salud Carlos III, has designed the TEApp mobile application, which aims to help communication between the person with autism spectrum disorder (ASD) or the family member and health professionals. The project also plans to publish a set of recommendations aimed at ASD professionals that can help them design studies on psychosocial interventions for people with ASD.

Research team: Marta Aymerich (PI), Marc Alabert, Carme Carrion, Jordi Conesa, Antoni Pérez Navarro, Noemí Robles, together with Parc Taulí University Hospital (Isabel Parra, Montse Pàmias). Period: 2018-2022

U6

Testimonials

"The education of healthcare professionals, technical professionals and society as a whole plays a key role in the evolution of digital health. The UOC has the potential to have a great social impact if it combines the pursuit of excellence in digital health with its teaching experience and educational model."
Àgata Lapedriza, principal investigator at AIWELL

"One of my most important lines of research is the design and implementation of digital health interventions. The fact that the university is clearly committed to this field and considers it one of the main axes of its triple helix makes the research we do in our group much more visible and provides us with more opportunities for collaboration with other groups at the university and with other institutions in the health sector, both in our country and on a more international scale."
Carme Carrion, principal investigator at the eHealthLab and research coordinator at the eHC

"The eHealth Center must become the benchmark in the development of new methods for personalized interventions in the field of healthcare."
Ferran Prados, principal investigator at the ADaS Lab

"The UOC is an international benchmark in the field of digital health. It began offering training in telemedicine as early as 2008, and since 2018 it has been offering formal training in digital health. As a university, part of the knowledge it teaches comes from the research that the university itself carries out. The UOC's eHealth Center has given new momentum to this research, making it possible to address more scenarios and take on new challenges. All in all, the eHealth Center is a catalyst for the university's international leadership in digital health."
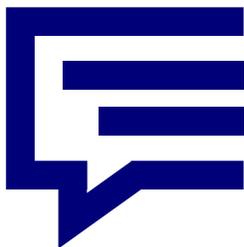**Francesc Saigí**, Faculty of Health Sciences

"The UOC is a technological university with a public service vocation. There is no better service to society than contributing to the improvement of health in the broadest sense, and doing so through the use of technology is embedded in the UOC's DNA. The eHealth Center is helping to create a community of people who are interested in eHealth, providing resources for research and enabling collaboration with other researchers, hospitals and administrations."
Llorenç Andreu, principal investigator at the NeuroDevelop eHealth Lab (GRECIL)

"It's important for the UOC to promote research on digital health because this is a field that's constantly progressing and that poses challenges to society. And the UOC has a founding commitment to improving the society in which it is rooted."
Eulàlia Hernández, PSiNET researcher

"Digital health is the present and the future in the health system. It's an essential ally in improving the work of professionals. There are still many challenges to overcome and researchers, professionals and users need to work together to make digital health a real asset. As the head of a research group on ageing, the eHealth Center has opened up new horizons for me, which have been accelerated by the COVID-19 pandemic. It complements my research and has generated strategic collaborations, which have already resulted in publications and new funding."

Marco Inzitari, Barcelona Aging CoLLaboratory, member of the eHC, and researcher at the Faculty of Health Sciences

"Digital health needs to be based on scientific evidence and therefore there is a need for a lot of translational research, research that is interdisciplinary and allows us to make advances in the healthcare model, personalize it more and make it more salutogenic. The eHealth Center allows me to share digital health knowledge with other researchers in the field, both from the eHealth Center and others from around the world working in partnership with the eHealth Center. And to do so in depth. It is very stimulating to study, experiment, analyse, disprove hypotheses and come up with new ones. And doing that as part of a team, questioning yourself and others. Learning. Squeezing your neurons through thinking and stretching them by communicating. To seek, and sometimes also find, answers."

Marta Aymerich, eHealth Lab researcher and executive president of the eHC

"The eHealth Center acts as a centre of reference and supports research initiatives linked to the use of technology for the promotion of health and healthy eating."

Alícia Aguilar, FoodLab researcher

"It's important for the UOC to promote research in digital health because it has the potential to transform health systems by rigorously incorporating technology that will improve people's well-being."

David Masip, AIWELL researcher

"Together with education, health is one of the core areas of people's lives. A university such as ours, with a clear social and service vocation, cannot fail to concern itself with, but above all to take care of, issues that affect the quality of life of the public."

Manuel Armayones, principal investigator at the Behavior Design Lab (PSiNET)

"The UOC has been a pioneer in digital health research and training and we have a unique three-dimensional ecosystem in digital health. On the one hand, there's the eHealth Center, as a top-level research centre; on the other, there's the Master's Degree in E-Health, with an applied vision aimed at translating knowledge and research into clinical practice; and, finally, we are a WHO collaborating centre in digital health, which makes us agents in the implementation of the digital health strategy recommended by the WHO."

Antoni Baena researcher and director of the Master's Degree in E-Health

Digital health is an opportunity to take on the current challenges facing the health system and to ensure health as a universal right. The eHealth Center will continue to carry out research in this field with the aim of generating knowledge and transforming our society.