

Laënnec

amU Laënnec institute, digital
sciences and AI for health
Aix Marseille Université



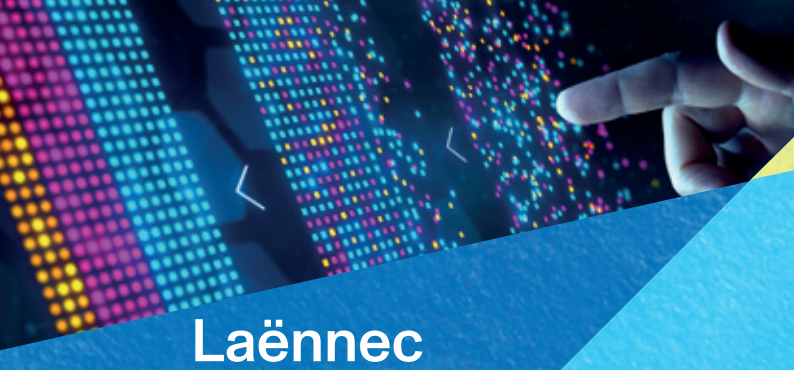
Forming a community

Training through and for research

Connecting disciplines

Strengthening partnerships

Acting internationally

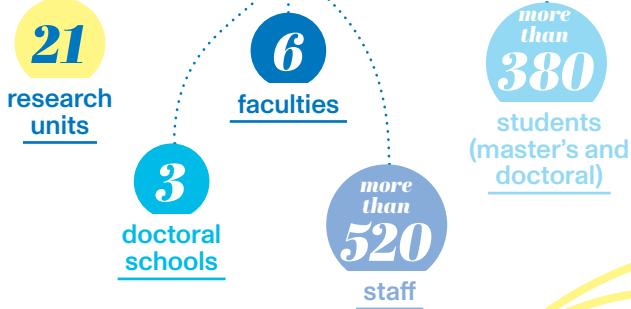


Laënnec

The power of digital technology and AI at the patient's bedside

At the crossroads of research and education, the Laënnec institute is the setting for a fertile multi-, inter- and transdisciplinary dialogue between doctors, computer scientists, physicists, mathematicians, lawyers and ethicists on medical issues. Medical questions arising in the field will be answered in a concerted fashion, in the form of operational and profitable technical solutions that respect legal and ethical constraints and are developed in the interests of patients. To achieve this, the institute brings together, on the Aix Marseille Université site, a large disciplinary and interdisciplinary force in digital sciences and artificial intelligence for health.

Forming a community



- Artificial intelligence
- Health
- Oncology
- Neuroscience
- Thoracic pathologies
- Digital prototypes

Training through and for research

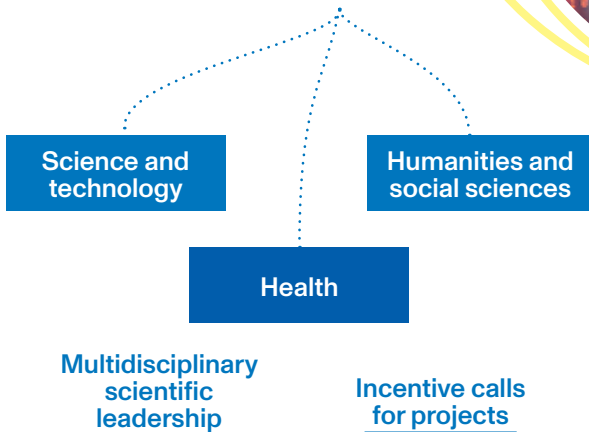
- Internships for master's students in research units
- University hospital student projects to respond to a specific medical problem using digital and AI tools



Acting internationally

- Creation of a European Master's degree in AI and Health
- Partnership with Morocco's e-Health Innovation Centre
- Financing missions and invitations for our partners

Connecting disciplines



Strengthening partnerships

- SANOFI
- E-Health Innovation Centre (CleS) of Morocco
- Regional e-Health Development Support Group - PACA
- Marseille public university hospital system - AP-HM
- Paoli-Calmettes institute



Watch the institute's animated film



Meet our executive office

Deputy research director:
Stéphane Delliaux

Director:
Mustapha Ouladsine

Deputy training director:
Kathia Chaumoitre

Project manager:
Xavier Sau

Discover the entire governance team:
<http://url.univ-amu.fr/institut-Laennec-gouvernance>

Focus on

Our university hospital student projects

The hospital-university projects are designed to bring students in digital sciences face to face with concrete medical problems arising from the services of the institute's partner care establishments. Supervised by a mixed multidisciplinary team (teacher-researchers and doctors) and carried out as part of their training courses, these projects introduce students to the problems of the medical world while providing digital solutions for healthcare professionals.

"Working with the institute as part of a university hospital project integrating oncology, digital sciences and artificial intelligence has been a very inspiring partnership. The students worked to understand the specific needs of the health sector and we worked with them step by step to develop a prototype that met our requirements. This experience was enriching for the students and for us as healthcare professionals, as it enabled us to benefit from knowledge and skills in digital sciences and AI."

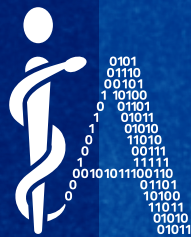
Dr J. Pluvy, initiator of the "CANCERTIMELINE" hospital-university project, AP-HM

Contact

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Training at Laënnec

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*Training for, through and in research,
with continuity from master's to doctorate level*

Training for, through and in research,
with continuity from master's to doctorate level

Our ecosystem

More than
380

master's students¹

6

partner faculties

- ▶ Faculty of medical and paramedical sciences (SMPM)
- ▶ Faculty of sciences (FS)
- ▶ Faculty of pharmacy
- ▶ Marseille polytech
- ▶ Faculty of arts, letters, languages and humanities (ALLSH)
- ▶ Faculty of sports science (FSS)

over
160

doctoral and postdoctoral students²

3

partner doctoral schools

- ▶ Life and health sciences (ED 62)
- ▶ Marseille mathematics and computer sciences (ED 184)
- ▶ Engineering sciences (ED 353)

¹ students enrolled on master's specialisations attached to the institute
² doctoral students enrolled in our partner doctoral schools

9

master's specialisations

- ▶ Medicines and Health Products - DIGIPHARM specialisation
- ▶ Biology-Health - Biomarker & AI specialisation
- ▶ Computer science - SID specialisation
- ▶ Computer science - IAAA specialisation
- ▶ Automatic electrical energy electronics - automatic specialisation
- ▶ Neuroscience - NICC specialisation
- ▶ Cognitive sciences
- ▶ Public Health - AI4PH specialisation
- ▶ Public Health - MQERS specialisation

1

department of Polytech Marseille

1

European master's degree

Consult all master's degree specialisations:



1

interdisciplinary doctoral programme

Our key actions

- ▶ Internships for master's students in research units
- ▶ "Mastering health data analysis techniques" spring school
- ▶ Raising awareness of the regulations governing media devices
- ▶ University hospital student projects: Creation of student - teacher-researcher - doctor consortiums to respond to a specific medical problem using digital and AI tools

2020-2023

17

internships in research units

26

doctoral students trained at the spring school

63

people obtaining awareness of the regulations governing media devices

"The Laënnec institute gave me the opportunity to do my final year placement on the detection of patient-machine asynchronies in artificial ventilation and apply my skills in automation and computer engineering to a real medical problem. The subject, led by the head of the intensive care unit at the Timone hospital, gave me the opportunity to put my skills into practice in a rewarding, multidisciplinary medical context."

Louis R.

Master 2 student in electronics, electrical energy, automation and computer engineering

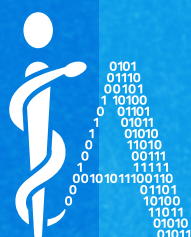
Our international training initiatives

CIVIS alliance
European civic university

European Master's degree in AI and Health
with Stockholm University, Università Di Pisa, Institut National de Recherche en Informatique et Automatique, Universidad Autonoma De Barcelona, Universitatea de Medicina si Farmacie Carol Davila Din Bucuresti

Strong cooperation with Morocco's e-Health Innovation Centre
- Participation of Institute members in the e-Health DU at Mohammed 6 University

Contact



Research at Laënnec

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*Bringing together the digital sciences and AI for health
strengths of the Aix-Marseille site to consolidate
our international scientific position*



Bringing together the digital sciences and AI for health strengths of the Aix-Marseille site to consolidate our international scientific position

Research ecosystem

21
research
units

Health and life sciences

- ▶ Bio-cultural anthropology, law, ethics and health (ADES)
- ▶ Centre for cardiovascular and nutrition research (C2VN)
- ▶ Centre for study and research on health services and quality of life (CEReSS)
- ▶ Marseille centre for cancer research (CRCM)
- ▶ Centre for biological and medical magnetic resonance (CRMBM)
- ▶ Marseille institute for developmental biology (IBDM)
- ▶ Mediterranean institute for neurobiology (INMED)
- ▶ Institute for neurophysiopathology (INP)
- ▶ Institute for systems neuroscience (INS)
- ▶ Timone Neuroscience Institute (INT)
- ▶ Laboratory for applied biomechanics (LBA)
- ▶ Cognitive neuroscience laboratory (LNC)
- ▶ Marseille centre for medical genetics (MMG)
- ▶ Health economics and social sciences and medical information processing (SESSTIM)

Advanced science and technology

- ▶ Marseille institute for mathematics (I2M)
- ▶ Provence institute for materials, microelectronics and nanosciences (IM2NP)
- ▶ Institute for movement science - Etienne Jules Marey (ISM)
- ▶ Computer science and systems laboratory (LIS)

Humanities

- ▶ Aix-Marseille centre for management studies and research (CERGAM)
- ▶ Comparative and European international law (DICE)
- ▶ Laboratory for cognitive psychology (LPC)



Our chief areas of research

- ▶ Digital sciences and artificial intelligence applied to oncology
- ▶ Digital sciences and artificial intelligence applied to neuroscience
- ▶ Digital sciences and artificial intelligence applied to thoracic pathologies

Our key actions

- ▶ "Mini-RHU" call for projects - funding for research projects addressing specific medical issues
- ▶ Postdoctoral call for projects
- ▶ Development of prototype digital tools in response to a medical problem

2020-2023

3
mini-RHUs
funded

3
funded
theses

5
funded
postdoctorates

more than 10
digital tools developed
or under development

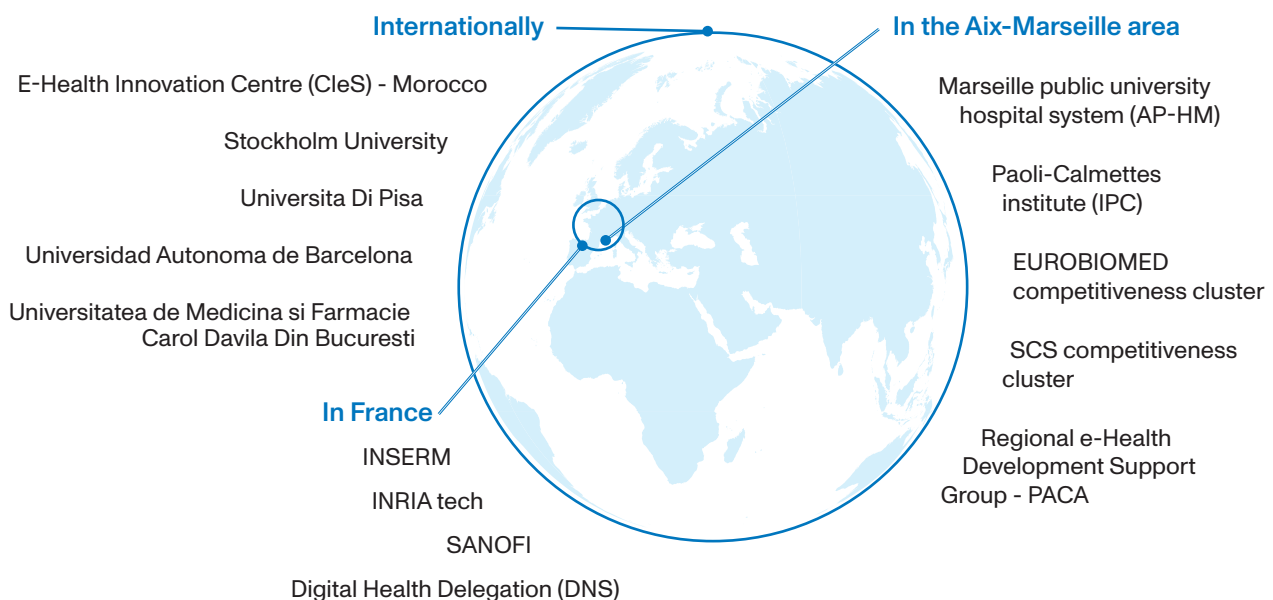
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Strengthening and developing special links with academic and institutional players and the socio-economic and cultural world

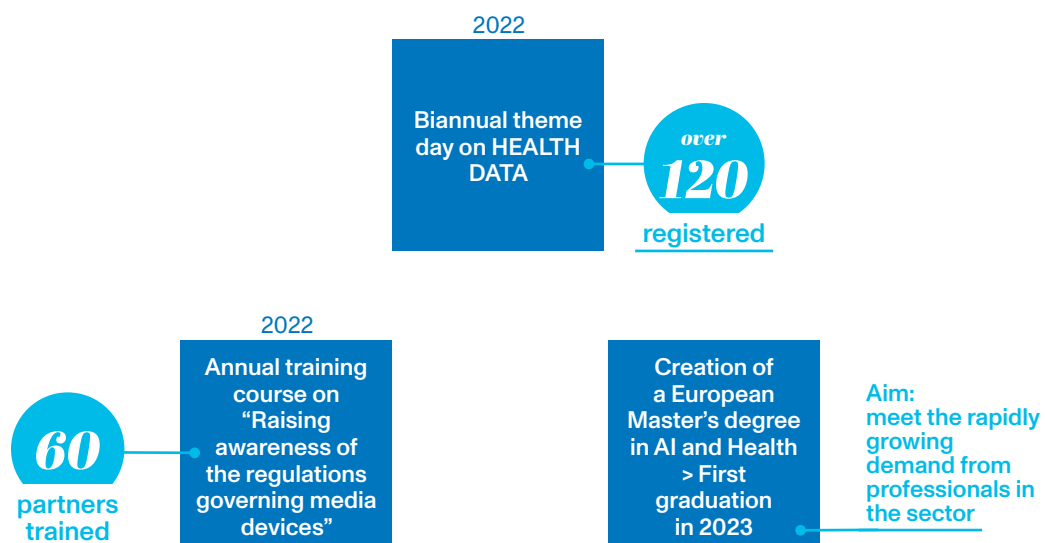
The institute is developing its partnerships with public and private players both nationally and internationally, and is heavily involved in two relevant competitiveness clusters (the Secured Communicating Solutions cluster and the Eurobiomed cluster), which have made AI in healthcare their priority for the coming years. Every two years, Laënnec also organises theme days with manufacturers to address common issues and create opportunities for exchange between healthcare professionals, teacher-researchers, researchers and manufacturers

Internationally, the institute relies on the CIVIS alliance, European civic university, but is also developing its network, particularly in Morocco with CleS. Laënnec supports the mobility of researchers within its perimeter, who act as ambassadors for the institute and help to develop new links. Nationally, we are increasing our contacts with a range of public and private players with a view to setting up cooperation projects.

Our key partners include



Our key actions



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Project manager: Xavier Sau

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The Laënnec institute brings together teams on 9 university and scientific sites



The Aix Marseille Université institutes are coordinated by the Amidex foundation



The Aix-Marseille Excellence Initiative, a consortium between Aix Marseille Université and 8 partners

