amU QuantA institute, quantum initiative Aix Marseille Université



QuantA

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Bringing together all the stakeholders in quantum technologies on the Aix-Marseille site.

QuantA - Quantum Initiative at Aix-Marseille - aims to incubate and promote inter- and transdisciplinary research initiatives in quantum technologies, with a strong scientific impact and fostering collaboration among local laboratories. The institute also fosters early links between research, innovation, and industry encouraging the emergence of start-ups and engaging with the existing economic ecosystem.

QuantA is structured around four major unifying research areas: quantum computing, quantum simulation, quantum sensing and metrology, and new synergies. These synergies encompass transdisciplinary research fields connected with quantum technologies that are of significant societal interest, including their environmental and economic impact and their legal regulation.

Forming a community

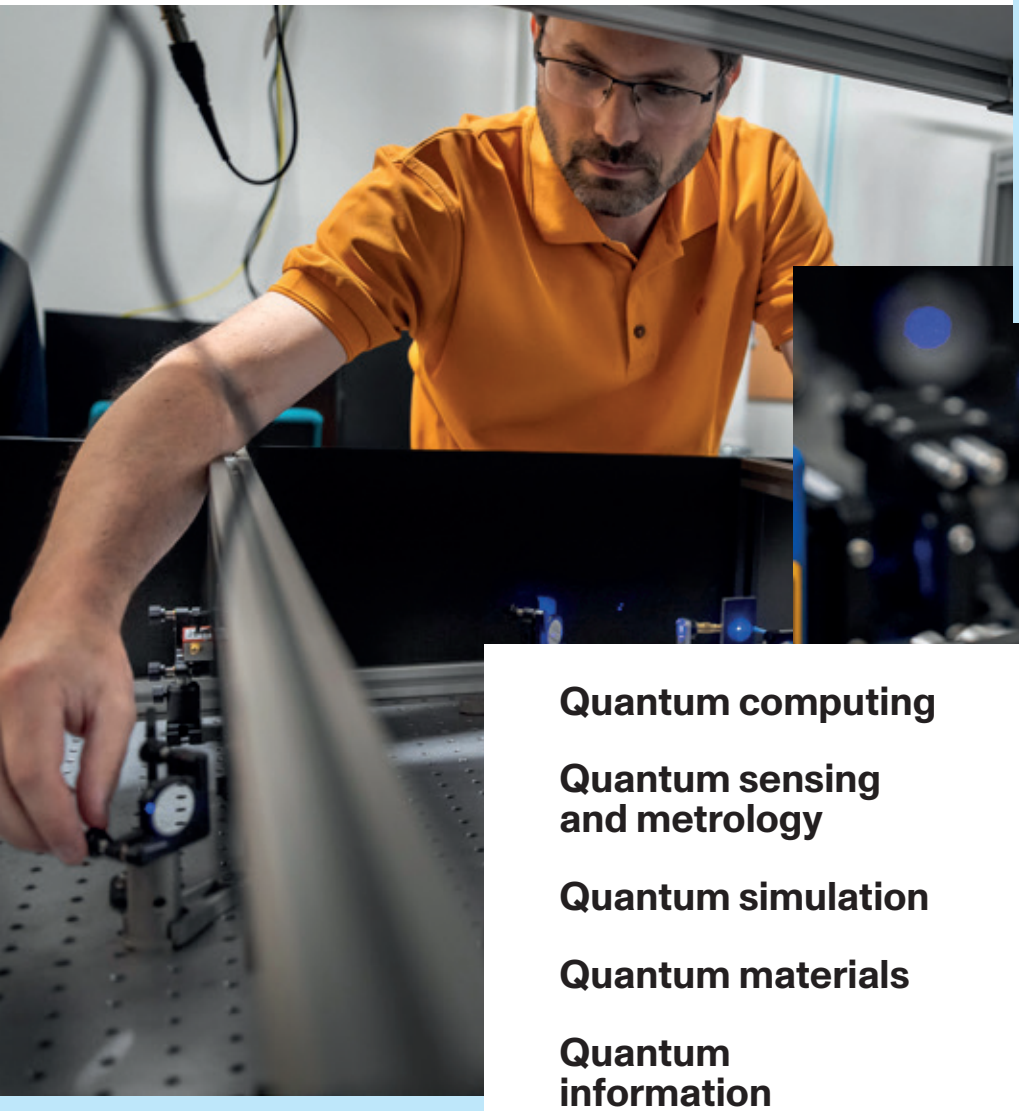
11 research units

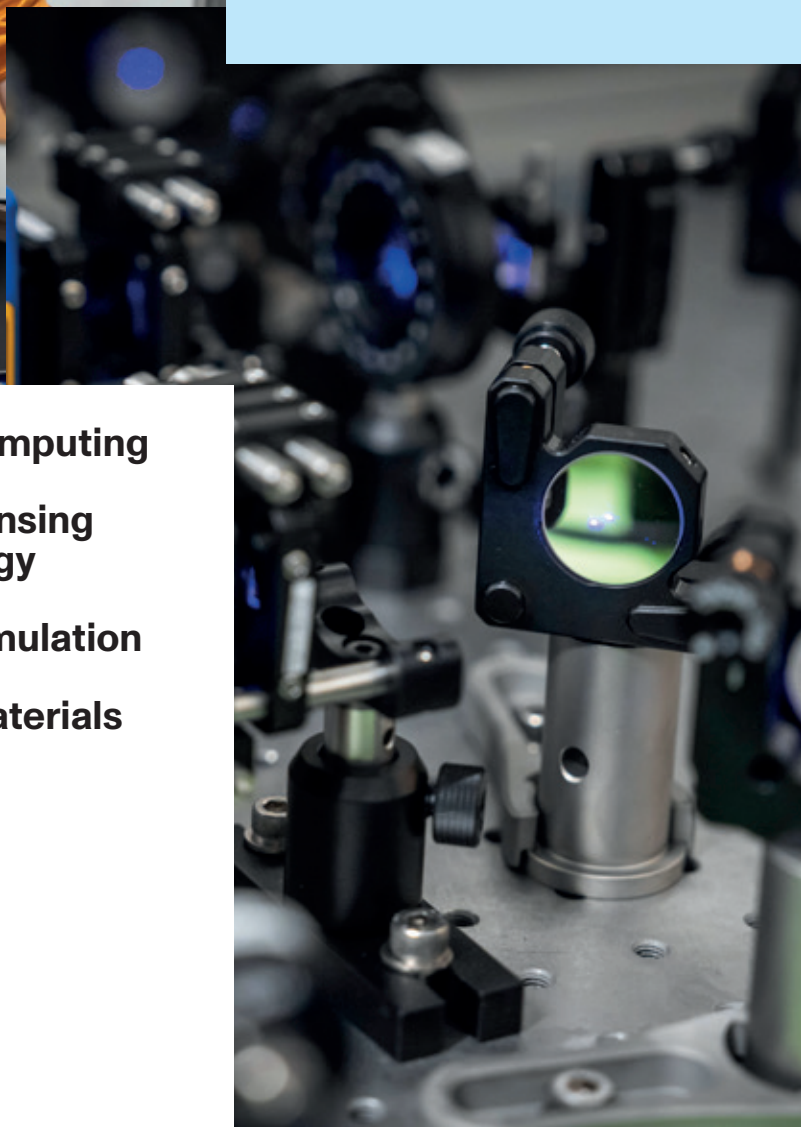
4 doctoral schools

2 faculties

more than 1170 staff

more than 260 students (master's and PhD)





Quantum computing

Quantum sensing and metrology

Quantum simulation

Quantum materials

Quantum information

Quantum foundations

Bringing disciplines closer together

Computer science and mathematics

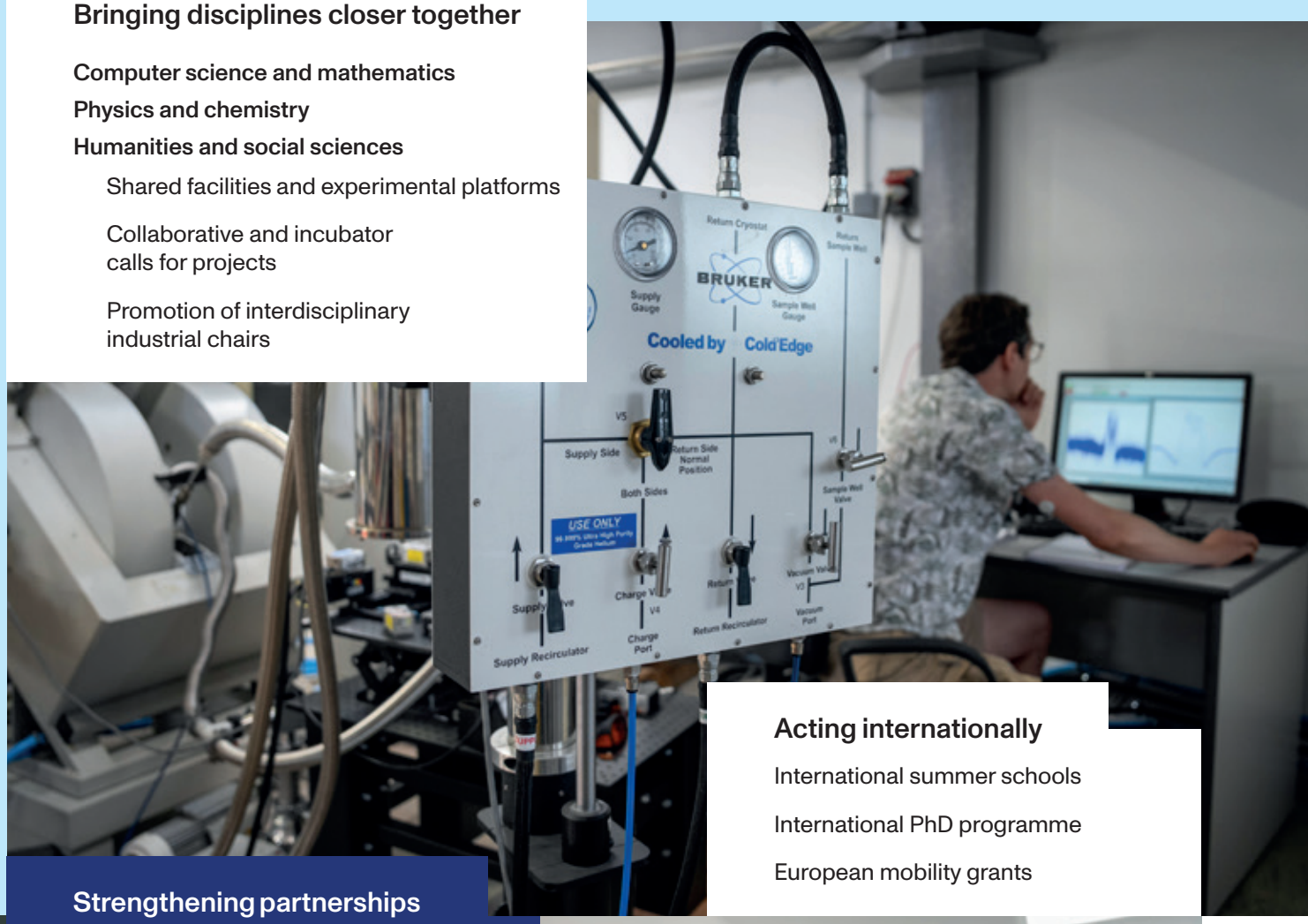
Physics and chemistry

Humanities and social sciences

Shared facilities and experimental platforms

Collaborative and incubator calls for projects

Promotion of interdisciplinary industrial chairs



Acting internationally

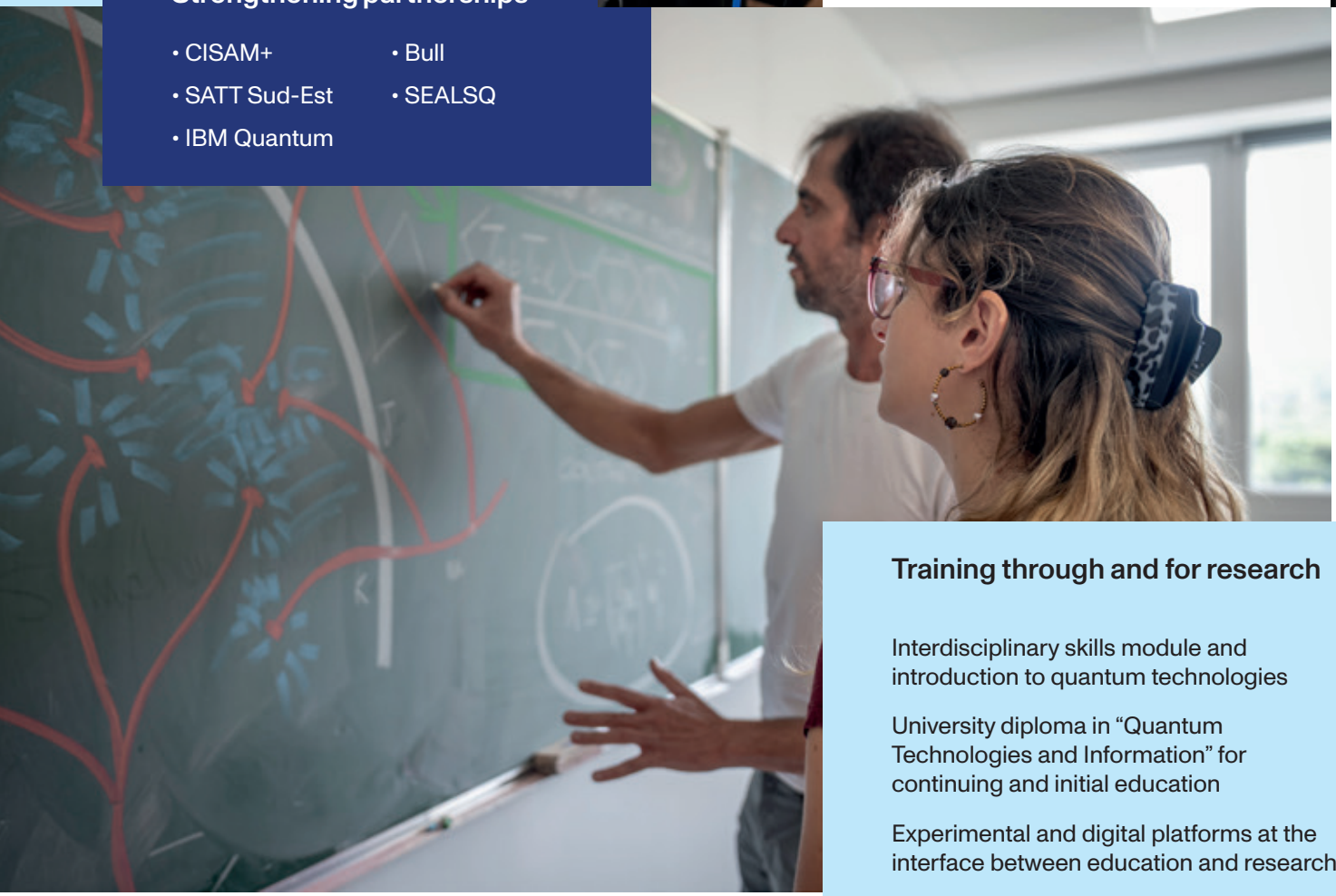
International summer schools

International PhD programme

European mobility grants

Strengthening partnerships

- CISAM+
- SATT Sud-Est
- IBM Quantum
- Bull
- SEALSQ



Training through and for research

Interdisciplinary skills module and introduction to quantum technologies

University diploma in “Quantum Technologies and Information” for continuing and initial education

Experimental and digital platforms at the interface between education and research

Funding for internships, PhD theses and postdoctoral positions

amU QuantA institute, quantum initiative Aix Marseille Université



Our executive office

The entire governance team: https://institut-quanta.univ-amu.fr/fr/gouvernance



Director:
Giuseppe Di Molfetta



Deputy research director:
Romain Dubessy



Deputy training director:
Fabienne Michelini



Operations manager:
Cécile Texier



Deputy director for science engagement and outreach:
Caroline Champenois

Focus on our scientific outreach

QuantA makes public engagement with quantum science one of its priorities, driven by the conviction that advances in this new revolution should be accessible to a broad audience. Its scientific outreach activities, supported by a strong network of partners, are organised around three complementary strands.

A network of science-engagement ambassadors within the associated laboratories develops demonstration experiments and draws on the humanities and social sciences - in collaboration with the Centre Gilles Gaston Granger - to study the societal impact of quantum technologies. In partnership with Aix Marseille Université's Science Outreach Unit, the QuantA institute supports public-engagement projects, runs workshops and stands at major events, and involves its researchers in public-outreach activities. Finally, working with associations committed to popular education, as well as through collaborations with QuantEdu-France and INSPE, QuantA raises awareness among young people, particularly girls, through the "Déclic" initiative and a forthcoming online orientation course (MOOC).

Contact

Director :
Giuseppe Di Molfetta

Operations manager:
Cécile Texier

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Subscribe to the institute's mailing list

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Training at QuantA

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



Our training ecosystem

more than 200 master's students*

around 50 PhD students*

4 key master's

- Physics
- Nanosciences and nanotechnologies
- Computer science
- Mathematics and applications

2 partner faculties

- Faculty of sciences (FS)
- Marseille Polytech

4 partner doctoral schools

- Marseille mathematics and computer sciences (ED 184)
- Physics and science of matter (ED 352)
- Engineering sciences (ED 353)
- Chemical sciences (ED 250)

1 interdisciplinary PhD programme

For more information on the master's programmes, browse the university's course catalogue::

* These figures include students enrolled in master's specialisations affiliated with the institute and PhD students enrolled in our partner doctoral schools.



Our key actions

Introductory courses in quantum technologies and quantum computers

Access to cutting-edge scientific equipment

Funding for interdisciplinary and transdisciplinary internships and PhD projects

Summer schools

University diploma "Quantum Technologies and Information - QTI"

"In a European context of growing demand for skills and expertise in quantum technologies, our main mission is to develop practical training initiatives from the third year of undergraduate study through to doctoral training, in both initial and continuing education, with strong links to industry partners and academic research."



Fabienne Michelini
Deputy training director

Our international training

CIVIS - Europe's Civic University Alliance

Erasmus Mundus Master's programmes: Europhotonics and Chemical nano-engineering

International PhD programme

Training activities linked to international research net

Contact

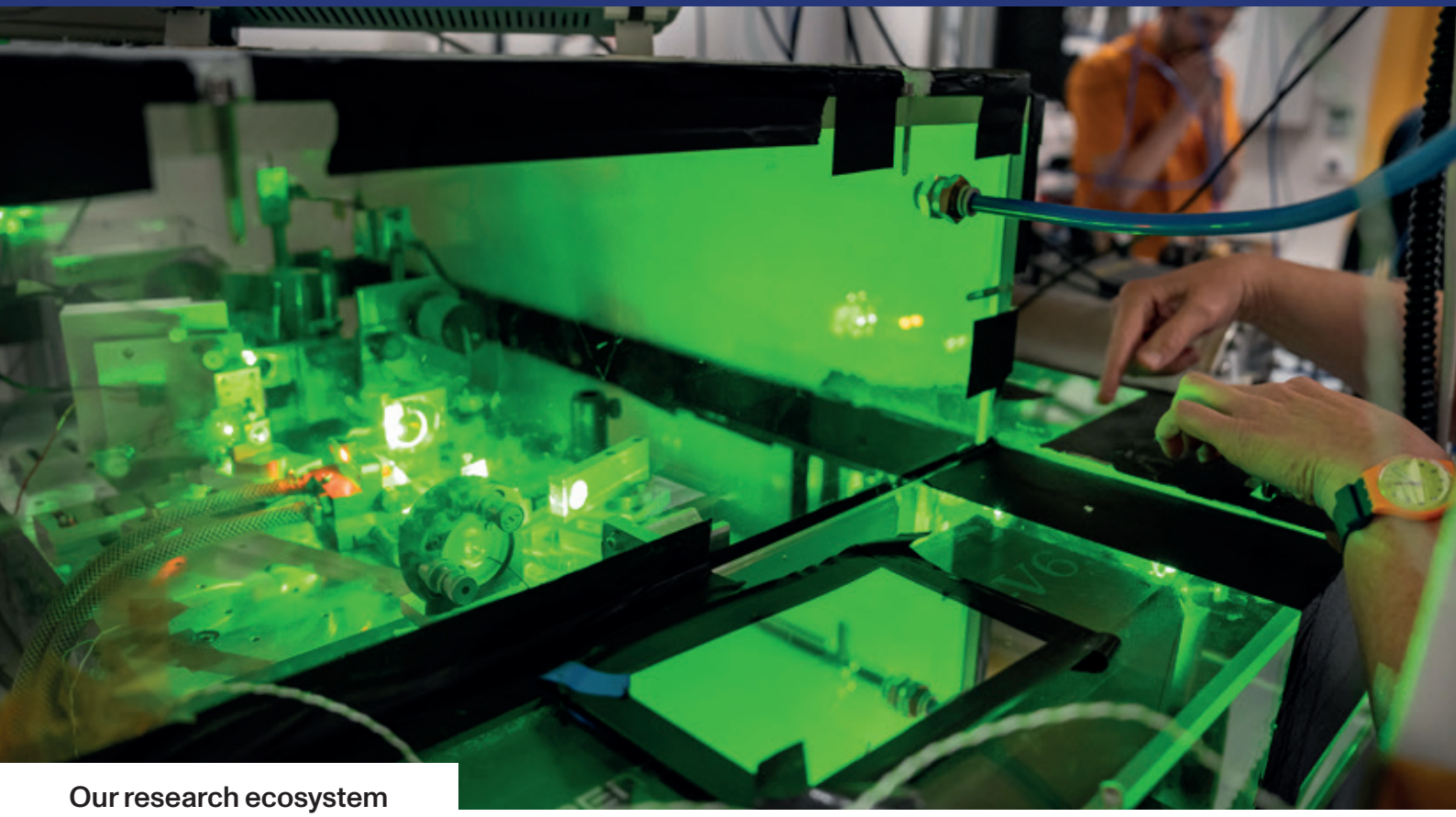
Deputy training director :
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Research at QuantA

Bringing together Aix-Marseille's strengths in quantum technologies to consolidate our international scientific standing



Our research ecosystem

11 research units

Advanced science and technology

- Computer science and systems laboratory (LIS)
- Provence institute for microelectronics and nanosciences (IM2NP)
- Centre for theoretical physics (CPT)
- Physics of the interactions of ions and molecules (PIIM)
- Marseille interdisciplinary centre for nanoscience (CINaM)
- Marseille institute for molecular science (ISM2)
- Marseille institute for mathematics (I2M)
- Institute for radical chemistry (ICR)
- Mechanics, modelling and clean processes laboratory (M2P2)
- Fresnel institute

Humanities

- Gilles Gaston Granger centre (CGGG)

more than 1100 staff

Aix Marseille Université

Université de Toulon

CNRS

Centrale Méditerranée

Institut universitaire de France (IUF)



Our key actions

Annual funding for exploratory projects

Set up of a permanent research support unit

Funding for research equipment

Designated funding for excellence chairs

Funding for postdoctoral fellowships

Our main areas of research

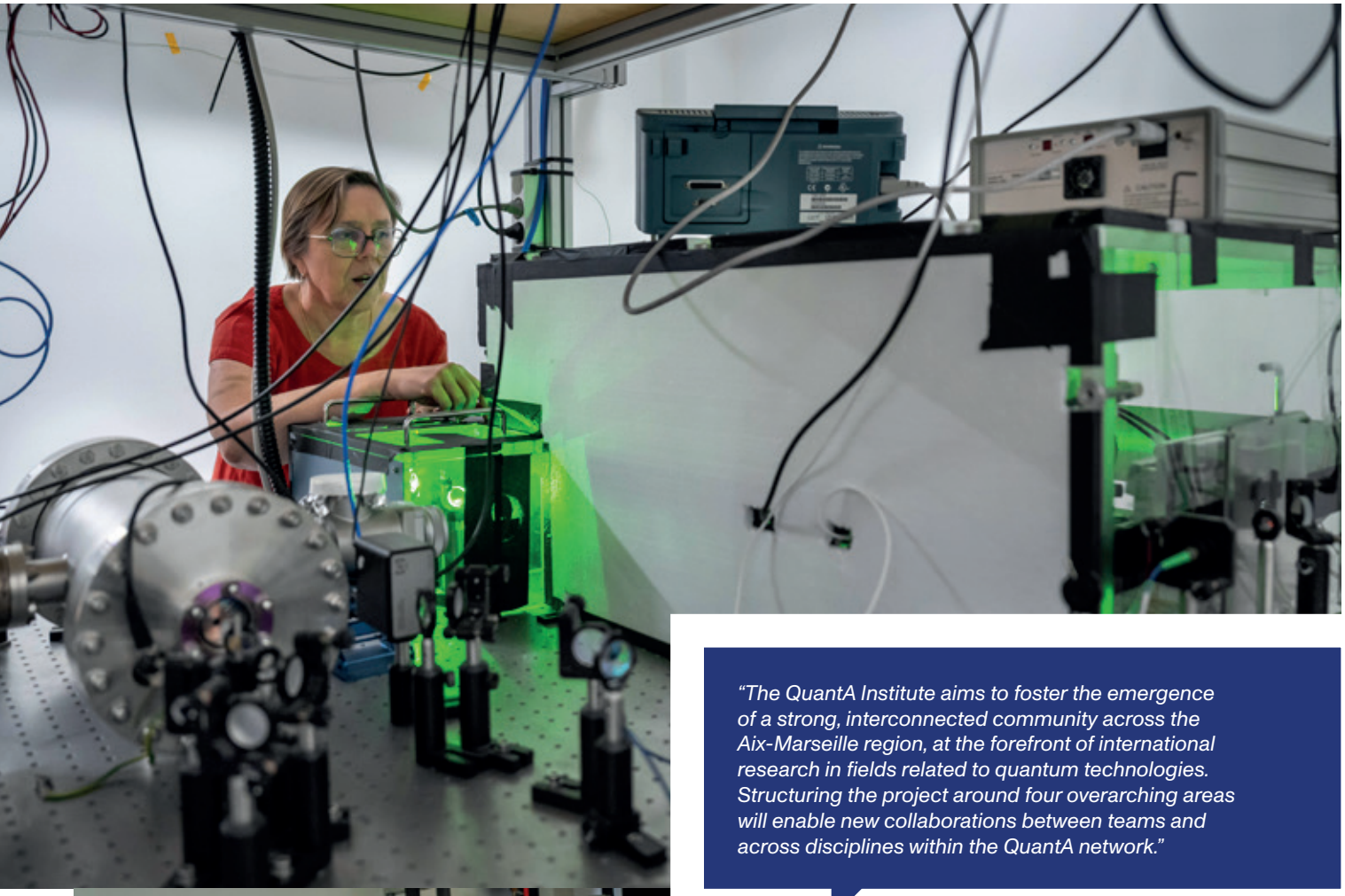
- **Physical architectures**
  How can individual qubits be initialised, manipulated and read out? How can we understand large-scale decoherence mechanisms?
- **Quantum computing**
  What computational advantage can quantum computers offer? How can quantum errors be mitigated and corrected?
- **Quantum simulation**
  How can methods and software be developed to simulate complex quantum systems? How can results be validated while accounting for noise and decoherence?
- **Quantum sensing and metrology**
  How can the performance of classical sensors be surpassed by harnessing, on the one hand, the manipulation of **well-controlled quantum objects and, on the other, non-classical states?**
- **New synergies**
  How can the entities and characteristics of the quantum world be identified? What are the ethical and environmental impacts of quantum science and technologies, and how should they be regulated by law?



Contact

Deputy research director:
Romain Dubessy

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"The QuantA Institute aims to foster the emergence of a strong, interconnected community across the Aix-Marseille region, at the forefront of international research in fields related to quantum technologies. Structuring the project around four overarching areas will enable new collaborations between teams and across disciplines within the QuantA network."

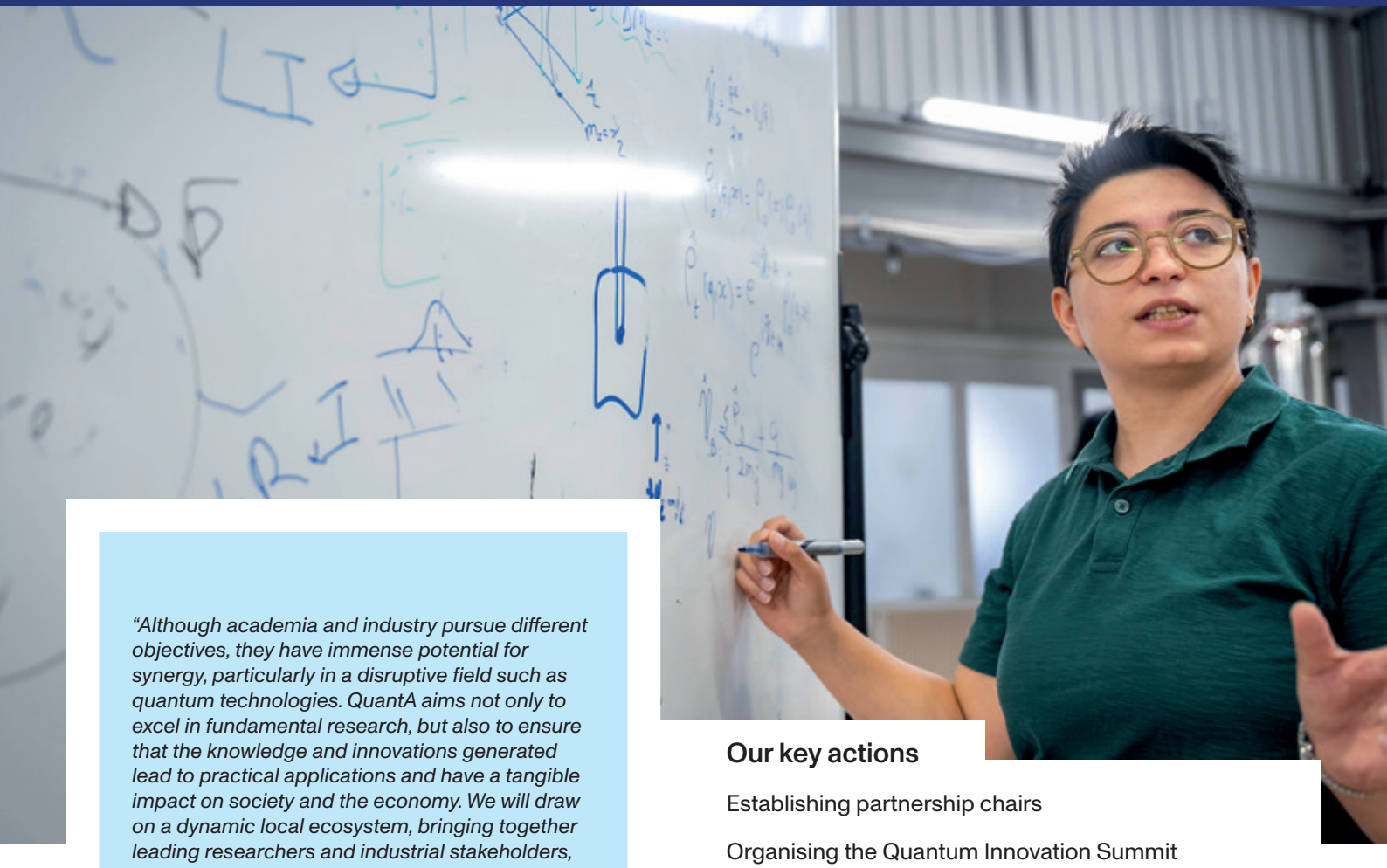


Romain Dubessy
Deputy research director

amU QuantA institute, quantum initiative Aix Marseille Université

QuantA partnerships

Building and strengthening partnerships with academic, institutional, socio-economic and cultural stakeholders



"Although academia and industry pursue different objectives, they have immense potential for synergy, particularly in a disruptive field such as quantum technologies. QuantA aims not only to excel in fundamental research, but also to ensure that the knowledge and innovations generated lead to practical applications and have a tangible impact on society and the economy. We will draw on a dynamic local ecosystem, bringing together leading researchers and industrial stakeholders, to build continuity between research, innovation and industrialisation on a daily basis and to create bridges between these two worlds."



Giuseppe Di Molfetta
Director of the QuantA Institute

Our key actions

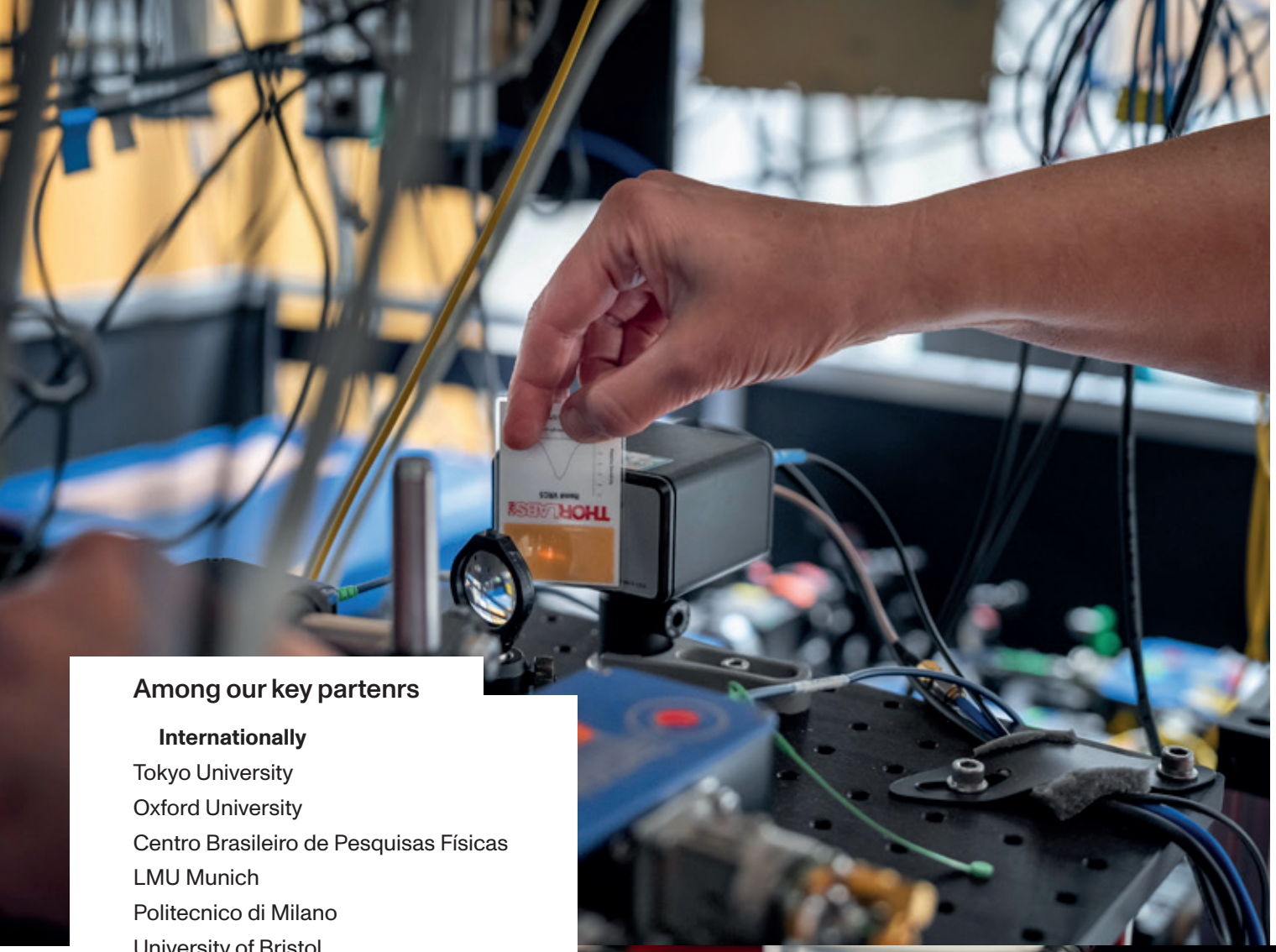
Establishing partnership chairs

Organising the Quantum Innovation Summit Day, bringing regional businesses together to discuss quantum technologies

Setting up a CIFRE PhD project and developing publicprivate contracts

Recruiting a Technology Transfer and Research Valorisation Engineer and launching a seed fund

Creating a coordination initiative for quantum technologies in the South of France



Among our key partenrs

Internationally

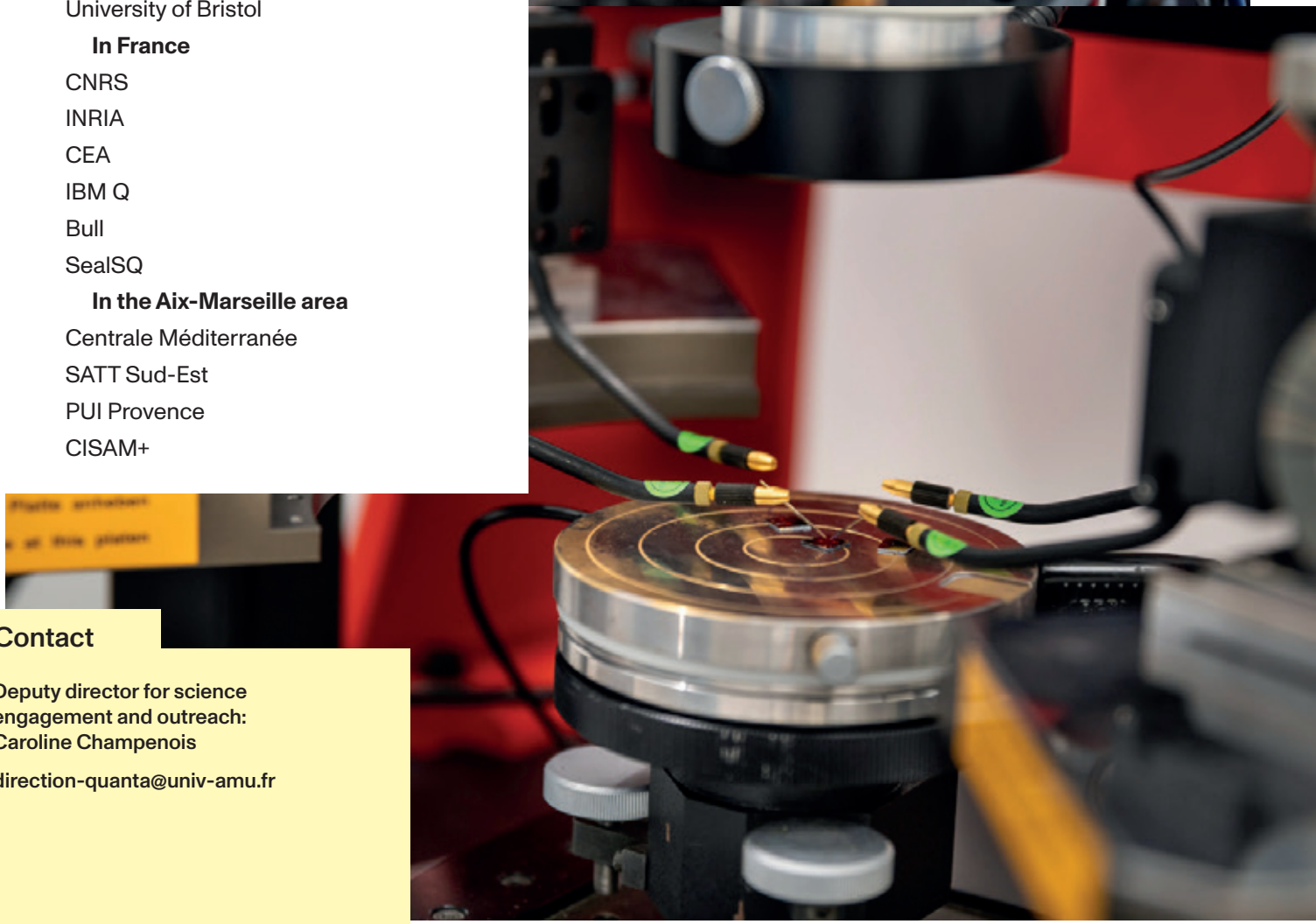
Tokyo University
Oxford University
Centro Brasileiro de Pesquisas Físicas
LMU Munich
Politecnico di Milano
University of Bristol

In France

CNRS
INRIA
CEA
IBM Q
Bull
SealSQ

In the Aix-Marseille area

Centrale Méditerranée
SATT Sud-Est
PUI Provence
CISAM+



Contact

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The QuantA institute brings together teams on 6 university and scientific sites



Saint-Jérôme site



Château-Gombert site



Saint-Charles site

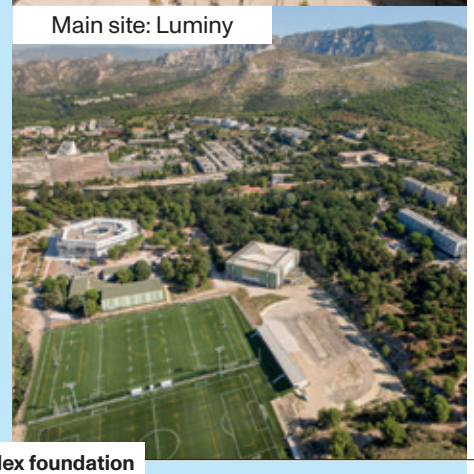




Aix-en-Provence sites



Main site: Luminy



Graphic design: DIRCOM amU | November 2026 | photos credits: Escalanta, Sarah Chambon, Jean Fondacci and Aix-Marseille Université (Eléa Ropiot)

The Aix Marseille Université institutes are coordinated by the Amidex foundation

amidex Aix Marseille Université | FRANCE 2030

Aix Marseille Université institutes: facilitators to strengthen the research-training link, interaction with the economic and cultural world, interdisciplinarity and internationalisation around twenty or so strategic fields of research. Their core unifying role: training a new generation of academics to meet the scientific and societal challenges of our time!

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

amU Aix Marseille Université | cnrs | Inserm | cea | IRD | Centrale Méditerranée | sciencespo.aix | Hôpitaux Universitaires de Marseille ap hm | INSTITUT PAOLI-CALMETTES unicancer Marseille