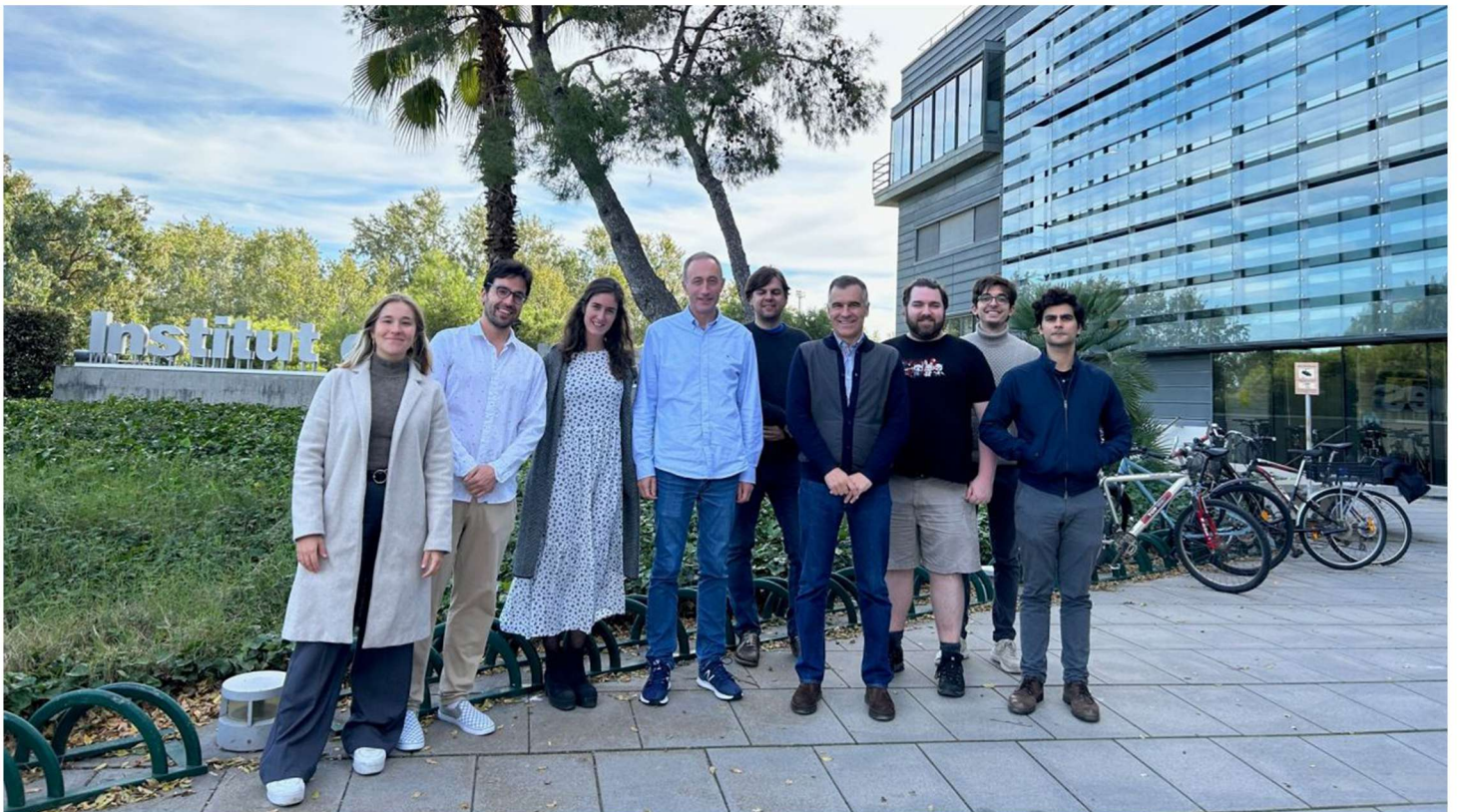


## THIRD QUANTAGENOMICS GENERAL ASSEMBLY AT ICFO, IN BARCELONA



Group photo - from right to left: Paula Alonso (ICFO), Luis Trigo (ICFO), Laura Ortiz (UPM), Valerio Pruneri (ICFO), André Chailloux (INRIA), Armando Pinto (IT), Pascal Lefebvre (SU), Adriano Innocenzi (SU), Ricardo Faleiro (IT)

The third in-person **QuantaGenomics General Assembly** was held on 13th November 2023 and took place in Barcelona, at **ICFO - The Institute of Photonic Sciences**, and was attended by the majority of the partners (IT, SU, ICFO, INRIA, and UPM). The event aimed to join teammates and partners to **discuss the running tasks and activities**, in addition to defining the following steps according to the work plan for each stage. The representatives had the opportunity to **share with their colleagues the work status, discuss new ideas, and plan further activities**.

### ABOUT THE PROJECT

QuantaGenomics is a QuantERA ERA-NET Cofund in Quantum Technologies project with a focus on the development of a quantum-enabled secure multiparty computation service for collaborative genomic medicine.

#### In this issue:

Third QuantaGenomics General Assembly at ICFO, in Barcelona; Participation in "90 Segundos de Ciência" Podcast - RTP (Portugal); Current Scientific Activities and Publications.

# PARTICIPATION IN "90 SEGUNDOS DE CIÊNCIA" PODCAST - RTP (PORTUGAL)

Nelson Muga, senior researcher at Instituto de Telecomunicações - Aveiro (Portugal), participated in the "90 Segundos de Ciência" podcast, a radio program from the RTP (Radio and Television of Portugal) - Antena 1, which discusses and presents **scientific content in a simple form** for those with a background in science and those with a general interest in learning about scientific developments. In this way, the project QuantaGenomics, and the activities that have been done with the consortium members were presented, using quantum technologies to develop and support secure multi-agent computing systems. Click [here](#) to listen to the podcast.



Member of the research team of the QuantaGENOMICS project and Senior Researcher at Instituto de Telecomunicações, Aveiro, Portugal



Joana Cardoso, Founder & CSO of Ophiomics and Bio/Medtech R&D Researcher



Distinguished Abstract Award signed by the Jury

## DISTINGUISHED ABSTRACT AWARD

Joana Cardoso (Founder & CSO of Ophiomics), Bio/Medtech R&D researcher, obtained recently a distinguished abstract award. From the 23rd to 26th of April 2024, Joana presented a work entitled "In silico validation and algorithm development of a novel tool for clinical outcome improvement of Barrett's Esophagus malignant progression" and was chosen by the Jury to figure among the 8 foremost of the Congress. This distinguished abstract plenary session took place in the OESO-SEMPIRE 16th World Conference in Strasbourg.

Joana claimed to be very proud to present the ophiomics work on #EsoDetect selected for presentation at the Distinguished Abstract Plenary Session, OESO 2024 in Strasbourg and praised the event. Furthermore took the opportunity to congratulate all the Ophiomics team on the achievement.

## NEXT GENERAL ASSEMBLY

The Fourth QuantaGENOMICS general assembly will take place in Lisbon, the next 20th of June 2024.

# CURRENT SCIENTIFIC ACTIVITIES

To date, the consortium has addressed two non-technical and three technical work packages (WPs): WP1 - Project Management, WP5 - Dissemination and Exploitation, WP2 - Quantum Foundation for SMC, WP3 - Laboratory Validation, and WP4, Integration into a Classical Optical SDN Network.

## **WP1 continues to ensure the proper administrative and scientific management of the project,**

e.g. day-to-day operational administrative and contractual tasks of the project and establishing the interface and interaction with the QuantERA office.

**WP5 has ensured the dissemination of the project,** including the presentation of project activities, objectives and results at scientific events and national and international conferences, as well as journal publications.

The **WP2 - Quantum foundation for SMC was successfully completed in January 2024,** when the last two deliverables associated with this WP were completed: D2.2 - Practical protocols for SMS with applications in genomics, led by IT, and D2.3 - Security analysis of SMC protocols, led by IT.

## **Activities in WP3 are continuing as planned and two tasks have already been completed:**

T3.1 Implementation of protocols based on DVs and T3.2 Implementation of protocols based on DVs. Associated with these two tasks, two deliverables have been produced: D3.1 - Experimental validation of a novel DV-based quantum oblivious transfer protocol and Report of the laboratory proof of principle validation addressing the CV, respectively. Implementation of the quantum entanglement-based oblivious transfer protocol is underway, with synergic interactions between the theoretical and experimental teams involved in this task.

The network integration of the quantum resources and protocols to be implemented in Task 4.1 is currently underway. This task, and the corresponding **WP4, is led by UPM, which, in collaboration with other partners, will coordinate the final demonstration of a genomic medicine service supported by quantum technologies.**

# PUBLICATIONS

- S. T. Mantey, A. N. Pinto, N. A. Silva, N. J. Muga, Design and Implementation of a Polarization-encoding System for Quantum Key Distribution, Accepted for publication in Journal of Optics, 2024
- M. Silva, R. Faleiro, P. Mateus, E. Z.Cruzeiro, A coherence-witnessing game and applications to semi-device-independent quantum key distribution, Quantum 7, 1090, 2024



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