MIRA - Microrobotics for real-world medical applications

15.oct - 16.oct 2026

Cod. Z72-26

Modalité:
En personne

Édition
2026

Type d'activité
Workshop

Date
15.oct - 16.oct 2026

Location
Aquarium

Langues
Anglais

Reconnaissance officielle par l'État
20 heures

Comité d'organisation

Description

Medical microrobotics is uniquely appealing because it enables minimally invasive interventions, precise targeted delivery of therapeutics, enhanced imaging and diagnostics, and access to previously unreachable tissues or organs. These capabilities offer transformative opportunities to improve patient outcomes, reduce procedure-related risks, and redefine standard clinical care.

Building on these potential applications, this conference will bring together researchers, engineers, clinicians, and industry experts to explore the cutting-edge field of medical microrobotics and its translation into clinical practice. By fostering interdisciplinary dialogue among medical doctors, materials scientists, bioengineers, and specialists in micro- and nanobiotechnologies, the event aims to identify pressing medical challenges and showcase how robotic and cell-based microrobotic systems can provide innovative solutions.

The conference will also highlight the field's evolution from in vitro studies to preclinical animal models, illustrating how technological advances have paved the way for early translational applications and the emergence of spin-off companies. These enterprises are actively working to secure the resources needed to advance toward first-in-human trials, underscoring the growing real-world impact of medical microrobotics.

Through invited lectures, panel discussions, and interactive sessions, participants will gain a comprehensive understanding of the scientific, technological, and clinical landscape, while building collaborations that bridge basic research, engineering, and patient-centered care. The event is designed to inspire innovation, promote translational research, and accelerate the adoption of microrobotic solutions that address critical medical needs.

IMPORTANT DATES

- **Abstract submission** period: 1 June 2026 - **1 July 2026**
- **Early Bird Registration** period: 1 June 2026 - **10 August 2026**

CONFIRMED SPEAKERS

- **Li Zhang**
- **Salvador**
- **Simone**
- **Wei Gao**
- **Metin Sitti**
- **Daniel Ahmed**
- **Verónica**
- **Brad Nelson**
- **Jong-Oh Park**
- **Ambarish**
- **Samuel Sánchez**

Objectifs

Key topics include:

- Translational Pathways: from in vitro studies to preclinical models, highlighting lessons from current clinical implementation of advanced therapies (gene editing, stem cells, immunotherapies).
- Technological Innovations: Advances in micro- and nanorobotics for medical interventions, diagnostics, and therapeutic delivery.
- Unique Functionalities of Medical Microrobotics: Advantages over existing delivery systems, particularly for life-threatening diseases or niche medical cases.
- Regulatory and Ethical Considerations: Challenges and strategies for first-in-human trials and clinical translation.
- Entrepreneurship and Commercialization: Emerging spin-offs, funding strategies, and pathways to market adoption.
- Collaborative Opportunities: Strengthening partnerships among academia, industry, and clinical stakeholders to accelerate innovation.

The conference will emphasize interactive discussions to connect technological development with actual clinical needs, ensuring that research efforts are aligned with patient-centric solutions.

Organisée par

Directed by

Mariana Medina Sánchez

Dr. Mariana Medina Sánchez is a leading scientist in bioinspired medical microrobotics and advanced microsystems, currently serving as Ikerbasque Research Professor and Group Leader at CIC nanoGUNE in San Sebastián, Spain. Dr. Medina Sánchez earned the degree of Mechatronics Engineer at the University of San Buenaverntura (Bogotá, Colombia) and undertook master's and PhD studies at the ICNN (Barcelona, Spain) to specialize on the development of nanomaterials-based and inkjet-printed electrochemical biosensors for disease diagnoses. She then joined the Leibniz Institute in Dresden (Germany), where contributed to the advancement of magnetically actuated microcarriers for immotile sperm transport and played a crucial role in developing ultrasensitive rolled-up microsensors for nucleic acid detection, promoting from a post-doctoral position to group leader. Recognized for her contributions, she secured the prestigious ERC Starting Grant for her project MicroGIFT.

Lieu

Aquarium

Plaza de Carlos Blasco Imaz 1, 20003 Donostia/San Sebastián

Gipuzkoa