## **SCIENTIFIC SEMINAR**



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## Generative, probabilistic machine learning for biomedical applications: incorporating scientific knowledge into data-driven learning

This talk explores the power of probabilistic and generative machine learning in unlocking data-driven insights, within and beyond the biosciences. We will explore the foundations of probabilistic and generative learning, emphasizing their ability to quantify uncertainty in data ---crucial for scientific rigor. We will argue that probabilistic and generative modeling enables incorporation of scientific knowledge into machine learning models.

Drawing on my recent and ongoing research, I will showcase two success stories within the context of female menstrual health. These examples demonstrate the flexibility of integrating domain-specific knowledge into machine learning, paving the way for broader applications within the biosciences. By bridging the gap between observed data and scientific knowledge, we unlock the potential for more robust and interpretable models, generating new scientific understanding.

CIC bio GUNE MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE



Thursday June 6 <u>Atrio 800</u> 12.00H

