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Ph.D. Program in Electronics, Computer Science and Electrical Engineering
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SEMINAR

Information Flow in Biological Systems: From Subjective Information to Bio-Nano Networks

Prof. Massimiliano Pierobon

University of Nebraska-Lincoln, NE, USA

Wednesday 14th January 2026, 2:00 pm – Online & E3 Room

Thursday 15th January 2026, 2:00 pm – Online & B4 Room

Zoom link: <https://unipv-it.zoom.us/j/3716753494?pwd=RVd3eU5NNGRJL3VvQnVFUmF2QnZidz09>

Abstract: This two-part seminar explores information flow in biological systems through the concept of *subjective information*, emphasizing how context and function shape biological signaling. The first seminar introduces communication and information theory as a framework to study how living systems sense, encode, and process information across scales, discussing key interdisciplinary challenges and presenting subjective information as a common metric. The second seminar builds on this foundation to examine the Internet of Bio-Nano Things (IoBNT) as an engineering paradigm for sensing, controlling, and communicating subjective biological information. It focuses on the design of bio-nano sensing, communication, and computing components, highlighting applications in implantable and wearable networks, biocomputing, and pervasive biosensing, as well as open challenges and future directions.

Bio: Massimiliano Pierobon is the Susan J. Rosowski Associate Professor at the School of Computing, University of Nebraska–Lincoln (UNL), with a courtesy appointment in Biochemistry. He received his Ph.D. in Electrical and Computer Engineering from the Georgia Institute of Technology in 2013. He is co-Editor-in-Chief of *Nano Communication Networks* (Elsevier) and Associate Editor of *IEEE Transactions on Mobile Computing*. His honors include awards from IEEE, ACM, and UNL for excellence research and teaching. His research focuses on molecular communication, nanonetworks, intra-body networks, and the Internet of Bio-Nano Things.

Organizer

Prof. Anna Vizziello

Seminar in English

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Ph.D. Coordinators

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