



ISTITUTO
DI BIORBOTICA



Sant'Anna
Scuola Universitaria Superiore Pisa

Diabetes: Models, Signals and Control

Lecture by *Claudio Cobelli*
University of Padova

BIOSKETCH

Claudio Cobelli is Emeritus Professor of Bioengineering at the **University of Padova**. His research activity is in modeling and control of the glucose system in diabetes. His research is mainly supported by NIH, JDRF and EU. He published 724 papers in refereed journals, co-authored 8 books and hold 10 patents with an h-index of 87 (Scopus). He serves as Ass. Ed. of IEEE TBME and JDST and is on the Ed. Board of DTT. He is a IEEE Fellow and received the Diabetes Technology Society Artificial Pancreas Research Award.

ABSTRACT

Between 1980 and 2017, the number of people with diabetes has more than doubled reaching **425 million people worldwide** and is projected to rise to 629 million by 2045. The last decades have seen growing attention toward biomedical engineering solutions to model and treat this burden.

In the seminar, we will first discuss oral minimal models, i.e. parsimonious system descriptions capable of measuring non-accessible parameters like insulin sensitivity and beta-cell responsivity from a phy-

siological oral test. Next, we will move to maximal models i.e. large, nonlinear model of high order with several parameters, which allow performing simulations and conducting in silico trials.

We will also discuss recent approaches to develop an artificial pancreas (AP), i.e. a system combining a glucose sensor, a control algorithm, and an insulin infusion device, both in terms of control methodology and clinical results.

BIORBOTICS PHD

*Seminar Cycle on Prostheses
and Artificial Organs*

Date

14/07/2021

Hours

14.30

Place

Istituto di BioRobotica - Scuola
Superiore Sant'Anna

Scan Qr Code to
join meeting

