

Wednesday 21st of September

Satellite course

Datasets and software will be provided in advance

8.15 *Registration*

The modeling process in nutrition: from mind to math

8.30 **Non-linear thinking: from mental models to mathematical models in animal science** 614

Alberto S. Atzori and **Büşra Atamer Balkan** (University of Sassari, Italy), **Ben Turner** (Texas A&M University Kingsville, USA)

9.15 **Credibility, evaluation, and testing of dynamic simulation models: tools and examples for feedback loop analysis** (Examples carried out with the participants) 615

Büşra Atamer Balkan and **Alberto S. Atzori** (University of Sassari, Italy), **Antonio Gallo** (Catholic University of Piacenza, Italy)

11.00 *Coffee break and poster view*
11.30

11.30 **Integrating real-time precision livestock data into dynamic models using R** (examples carried out with the participants)

Hector Menendez, **Jameson R. Brennan**, **Anna Dage** (South Dakota State University), **Alberto S. Atzori** (University of Sassari, Italy), **Ben Turner** (Texas A&M University, USA)

13.00 *Lunch*
14.45

Nutritional models: methodology and examples

14.45 **Non-linear parameter estimation: theory and application with SAS and R** (Examples carried out with the participants) 615

Ricardo A.M. Vieira (Universidade Estadual do Norte Fluminense, Brazil)

15.45 *Coffee break and poster view*
16.15

16.15 **Statistical graphics, interactive visualization and computer vision in animal science** (Theory and applications, with examples carried out with the participants)

Gota Morota (Virginia Polytechnic and State University, USA)

18.00 *End of the satellite course*

10th Workshop on Modelling Nutrient Digestion and Utilization in Farm Animals (MODNUT)

Alghero 18th-21st of September (Sardinia, Italy)

<https://www.modnut2022.com/>

For registration at the Satellite course:

<https://www.modnut2022.com/registration>

Professional, in presence	120€
Student, in presence	100€
Online attendance	80€

2022 MODNUT INTERNATIONAL COMMITTEE	2022 MODNUT ORGANIZING COMMITTEE	2022 MODNUT SUPPORT SECRETARIAT
Jan Dijkstra (The Netherlands) Mark Hanigan (USA) Ermias Kebreab (USA) Dianne Mayberry (Australia) Rafael Munoz-Tamayo (France) Izabelle Teixeira (Brazil) Antonello Cannas (Italy)	Antonello Cannas (Italy) Alberto Atzori (Italy) Antonio Gallo (Italy) Luis Tedeschi (USA) Ricardo Vieira (Brazil) Alessandro Zontini (Italy)	<p style="text-align: center;">Luisa Serra Kassiopea Group srl Via San Tommaso d' Aquino 20 09134 Cagliari. Italy luisaserra@kassiopeanews.com</p>

Dr. Ricardo A. M. Vieira (<https://orcid.org/0000-0001-9577-3820>) is Associate Professor of LZO03308-Goat Production, LZO3752-Quantitative Aspects of Ruminant Nutrition, and LZO03602-Animal Feed Analysis in the Laboratory of Animal Science (Laboratório de Zootecnia), Universidade Estadual do Norte Fluminense, Campos dos Goytacazes, Rio de Janeiro, Brazil.

He gained a bachelor's degree in animal science (B.Sc., 1993) at Universidade Federal Rural do Rio de Janeiro, a master (M.Sc., 1995) and a D.Sc. (1998) at Universidade Federal de Viçosa.

His research interests (1) and expertise (2 and 3) rely on (1) ruminant nutrition, feeding, and the quantitative aspects related to nutrient digestion and utilization by ruminants, with special reference on fiber, its digestion kinetics, and intake, together with other nonlinear phenomena in Animal Science (e.g., growth and lactation). He has been pursuing a (2) progressive understanding and developing skills about formal mathematical modeling, on designing and conducting field and laboratory experiments and interpreting results using SAS/R nonlinear procedures to assess quantitative estimates of nonlinear processes with the aim of predicting the nutritive value of feeds, animal performance, and seeking for efficiency in ruminant production systems. He also has been developing a (3) progressive understanding about Generalized Linear and Nonlinear Mixed-Effects Models and their applications to Animal Science. He did two sabbatical leaves, one in America (Texas A&M) and another in Denmark (Københavns Universitet), was an invited speaker in four international symposia, and published about 100 scientific items as primary papers, book chapters, and was Scientific and Senior Editor of *Revista Brasileira de Zootecnia* for 10 years. He has been advising several undergrad (Agricultural Engineering, Animal Science) and grad (Master and Doctorate degrees) students for 22 years.



Dr. **Gota Morota** is an assistant professor of quantitative genetics at Virginia Tech. He studied agricultural sciences at Obihiro University of Agriculture and Veterinary Medicine, where he graduated in 2008. He received his M.S. (2011) and Ph.D. (2014) degrees from the University of Wisconsin–Madison. He develops and applies statistical models to connect a variety of animal phenotypes with high-dimensional genomic data. In particular, he develops statistical models that can integrate high-throughput phenotyping data in agriculture, such as milk Fourier-transformed infrared spectroscopy data and hyperspectral imaging data, into a quantitative genetic framework. Because phenotypic data collection is paramount in quantitative genetics, he also applies computer vision to collect and evaluate a wide range of phenotypes.

