



2025 IEEE INTERNATIONAL WORKSHOP ON

Measurements and Applications in Veterinary and Animal Sciences

APRIL 28-30, 2025

PISA, ITALY



PROGRAM



2025 IEEE INTERNATIONAL WORKSHOP ON

MEASUREMENTS AND APPLICATIONS IN VETERINARY AND ANIMAL SCIENCES

PISA, ITALY / APRIL 28-30, 2025

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Welcome Message from the General Chairs and Technical Program Committee Chairs

On behalf of the Organizing Committee, it is our great pleasure to welcome you to Pisa for the third edition of the IEEE International Workshop on Measurements and Applications in Veterinary and Animal Sciences (2025 IEEE MeAVeAS).

The 2025 IEEE MeAVeAS is dedicated to exploring the diverse and dynamic intersections between veterinary medicine, animal and food sciences, and the fields of instrumentation and measurement, bioengineering, material science, chemistry, and biology. This Workshop serves as a vibrant platform for researchers, veterinarians, and animal scientists to exchange ideas, foster collaborations, and stay informed on the latest innovations in veterinary and animal science technologies. MeAVeAS brings together professionals and academics focused on the development of instrumentation and measurement methods not only for veterinary medicine but also for ecological, food, and animal science applications. The program highlights advanced technologies for animal health monitoring, metrology-assisted food production, specialized sensors, signal conditioning systems, and calibration techniques tailored for veterinary and animal science contexts.

Following the successful editions hosted by the University of Naples Federico II and the University of Turin in collaboration with the "Politecnico di Torino", this third edition is hosted in Pisa. The workshop will be held at the "Centro Congressi Le Benedettine," with the patronage of the University of Pisa and the collaboration between the Department of Veterinary Sciences and the Department of Energy, Systems, Territory and Constructions Engineering.

We are delighted to welcome you to the historic and beautiful city of Pisa. Renowned worldwide for its iconic Leaning Tower, Pisa holds a prominent place in Tuscany and Italian history. Once a powerful maritime republic in the Middle Ages, Pisa is also the birthplace of Leonardo Fibonacci and later home to Galileo Galilei, the father of the experimental method. These rich legacies make Pisa an inspiring and fitting venue for the 2025 edition of IEEE MeAVeAS. We hope you will enjoy both the conference and the cultural treasures of the city and its surroundings.

The Technical Program consists of 124 oral presentations distributed over three days and 24 Technical Sessions. These presentations were selected through submissions to both the General Track and 18 Special Sessions, which were designed to spotlight emerging topics and encourage interdisciplinary exchange and collaboration between industry and academia.

We received abstract submissions from across the world, including contributions from Italy, Spain, Albania, the United Kingdom, Tunisia, Turkey, Portugal, France, Belgium, Switzerland, Slovenia, Canada, the Netherlands, Israel, Iceland, South Korea, Mexico, Lithuania, Egypt, Algeria, Monaco, Morocco, and Colombia. Abstracts were evaluated based on technical quality, relevance, originality, and innovation. The peer-review process was made possible by the

invaluable efforts of several reviewers, whose thoughtful feedback helped authors refine their work. We extend our sincere thanks to all reviewers for their dedication.

Authors of accepted abstracts are invited to submit extended versions of their work to one of the following publications (please refer to the cover for more details):

- The Article Collection "Measurements and Application in Veterinary and Animal Sciences" in Veterinary Quarterly (Taylor & Francis Open-Access Journal);
- The Thematic Issue "Measurements and Application in Veterinary and Animal Sciences" in Acta IMEKO (Open-Access Journal).

We are honored to host two distinguished keynote speakers:

- Prof. Miel Hostens from the Cornell University (Ithaca NY, USA), who will present a talk on "How AI can transform the entire agricultural industry, or not" on the first day;
- Prof. José Alfonso Abecia from the University of Zaragoza (Zaragoza, Spain), that will give a talk on "Sensors for Monitoring Physiological Aspects of Livestock Species" on the second day.

Additionally, two plenary sessions will enrich our program:

- a Women in Science Session titled "Perspectives on Women's Careers in Engineering and Veterinary Science", sponsored by ADMV (Association of Women Veterinarians, Italy) and IEEE Women in Engineering (IEEE WIE, Italy Section), and organized by Prof. Federica Pirrone (University of Milan) and Prof. Erika Pittella (Sapienza University of Rome).
- a Round Table titled "Patent Process: From Idea to Commercialization" organized by prof. Duccio Panzani and Prof. Carmelo De Maria from the University of Pisa.

To acknowledge outstanding presentations during the workshop, the Organizing Committee established three awards: the *Best Conference Presentation Award*, the *Best Conference Presentation by a Young Researcher Award* and the *Best Conference Presentation by a Woman Award*. While all presenters are eligible for the Best Presentation Award, only those who applied will be considered for the other two Awards. A dedicated jury will evaluate presentations throughout the workshop, and winners will be announced during the Closing and Award Ceremony.

We would like to express our heartfelt gratitude to the Special Session Organizers, Reviewers, Keynote Speakers, Sponsors, and Institutional Patrons for their crucial contributions in making this event possible.

We are excited to begin this journey of scientific discovery and collaboration with you. May your experience at IEEE MeAVeAS 2025 be rewarding and inspiring. We also hope you will enjoy your stay in Pisa and take some time to explore the beauty and history the city can offer.

April 2025

Chiara Mariti and Mirko Marracci, General Co-Chairs

Duccio Panzani, Alice Buffi, Lisa Guardone, Luca Turini, TPC Co-Chairs

IEEE MeAVeAS 2025 Committee

HONORARY CHAIRS

Francesco Paolo Di Iacovo, *Dept. Veterinary Sciences, University of Pisa, Italy*

Bernardo Tellini, *Dept. Energy, Systems, Territory and Constructions Engineering, University of Pisa, Italy*

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Chiara Mariti, *Dept. Veterinary Sciences, University of Pisa, Italy*

Mirko Marracci, *Dept. Energy, Systems, Territory and Constructions Engineering, University of Pisa, Italy*

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Duccio Panzani, *Dept. Veterinary Sciences, University of Pisa, Italy*

Alice Buffi, *Dept. Energy, Systems, Territory and Constructions Engineering, University of Pisa, Italy*

Lisa Guardone, *Dept. Veterinary Sciences, University of Pisa, Italy*

Luca Turini, *Dept. Agricultural, Food and Agro-environmental Sciences, University of Pisa, Italy*

PUBLICATION CHAIRS

Vincenzo Miragliotta, *Dept. Veterinary Sciences, University of Pisa, Italy*

Francesco Lamona, *Dept. Computer Engineering, Modeling, Electronics and Systems, University of Calabria, Italy*

SPECIAL SESSION CHAIRS

Simone Mancini, *Dept. Veterinary Sciences, University of Pisa, Italy*

Gianluca Caposciutti, *Dept. Energy, Systems, Territory and Constructions Engineering, University of Pisa, Italy*

Raffaella Branciar, *Dept. Veterinary Medicine, University of Perugia, Italy*

Nicola Pasquino, *Dept. Electrical Engineering and Information Technology, University of Naples Federico II, Italy*

Domenico Ventrella, *Dept. Veterinary Medical Sciences, University of Bologna, Italy*

AWARD CHAIR

Gianluca Neglia, *Dept. Veterinary Medicine and Animal Production, University of Naples Federico II, Italy*

TREASURER

Francesco Picariello, *Dept. Engineering, University of Sannio, Italy*

INDUSTRY LIAISONS CHAIRS

Stefano Giordano, *Dept. Information Engineering, University of Pisa, Italy*

Giulia Lazzarini, *Dept. Veterinary Sciences, University of Pisa, Italy*

WOMEN IN SCIENCE

IEEE Women in Engineering (Italy Section)

Erika Pittella, *Dept. Information Engineering, Electronics and Telecommunications, Sapienza University of Rome, Italy*

Women in Animal Science

Federica Pirrone, *Dept. Veterinary Medicine, University of Milan, Italy*

INTERNATIONAL PROGRAM COMMITTEE

Emiliano Lasagna, *Dept. Agricultural, Food and Environmental Sciences, University of Perugia, Italy*

Claudio Forte, *Dept. Veterinary Science, University of Turin, Italy*

Laura Ozella, *Dept. Veterinary Science, University of Turin, Italy*

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Michael Mendl, *Bristol Veterinary School, UK*

Davide Brunelli, *Dept. of Industrial Engineering, University of Trento, Italy*

Miel Hostens, *Cornell CALS – College of Agriculture and Life Science, USA*

Alfonso Abecia, *Faculty of Veterinary Medicine, University of Zaragoza, Spain*

Luciana Bergamasco, *Dept. of Animal and Poultry Sciences, Virginia Tech, USA*

Mauro Serpelloni, *Dept. of Information Engineering, University of Brescia, Italy*

Emiliano Schena, *Università Campus Bio-Medico di Roma, Italy*

Ásgeir Bjarnason, *Star-Oddi, Iceland*

Veronica Marchetti, *Dept. Veterinary Sciences, University of Pisa, Italy*

Ultan McCarthy, *South East Technological University, Waterford, Ireland*

IEEE MeAveAS 2025 Keynote Speakers

PLENARY SESSION – MONDAY, 28TH APRIL, 2025 - 14:20 (AUDITORIUM)



How AI can transform the entire agricultural industry, or not

Miel Hostens

Cornell University, Ithaca NY, USA

ABSTRACT

The integration of Artificial Intelligence (AI) into the agricultural industry holds the potential to revolutionize farming practices, enhance sustainability, and improve overall productivity. AI-driven technologies, such as computer vision (CV) algorithms and precision livestock farming techniques, are being deployed to monitor animal welfare, detect health issues, optimize farm management practices ultimately creating a more sustainable agriculture.

However, the full potential of AI in agriculture is yet to be realized due to several challenges. The horizontal scattering of data across different research and business organizations introduces difficulties in performing integrated analytics. Moreover, the lack of comprehensive databases that integrate continuous, real-time data collected from scientific facilities hinders the establishment of benchmarks for other studies. Despite these challenges, the fusion of AI and animal & dairy science presents numerous opportunities, particularly in reducing emissions from livestock and enhancing the accuracy and reliability of generative AI models.

In conclusion, while AI has the potential to transform the agricultural industry significantly, its success depends on overcoming data integration challenges and developing robust, scalable AI models that can operate effectively in diverse farm settings. The ongoing research and development efforts in AI-driven agriculture are promising, but the journey towards full transformation requires continued innovation and collaboration across various sectors.

SPEAKER BIOGRAPHY

Miel Hostens has an MSc in Veterinary Medicine at the Ghent University (Belgium) in 2006 and a PhD in Veterinary Medicine in 2012. He also obtained a professional certificate in Epidemiology and Bioinformatics and to further deepen his data science expertise, he enrolled in a MSc in Computational Statistics in 2016. He has attracted multiple projects on data-driven agriculture and precision dairy farming overseas. The unique combination of data and dairy science in an academic profile was the main reason for attracting him as Associate Professor of Digital Dairy Management and Data Analytics at the Department of Animal Science at Cornell University. His lab focuses on developing a data-driven dairy science eventually contributing to sustainable food production systems from a global perspective.

PLENARY SESSION – TUESDAY, 29TH APRIL, 2025 - 12:00 (AUDITORIUM)



Sensors for Monitoring Physiological Aspects of Livestock Species

José Alfonso Abecia

University of Zaragoza, Zaragoza, Spain

ABSTRACT

The use of sensors in livestock farming is revolutionizing how animal health, behavior, and productivity are monitored. Among the most notable sensors are proximity and subcutaneous biologgers, and triaxial accelerometers, each with specific functions that provide precise data on animal welfare and help optimize livestock production. The proximity loggers record interactions and proximity between animals or with objects and locations within the farm. Proximity loggers allow monitoring of social behavior patterns, which can be useful for detecting the onset of estrus, identifying dominant animals, or recognizing changes in social behavior that may be associated with health issues. This data helps improve breeding decisions and flock management. Subcutaneous biologgers are devices that record physiological parameters such as body temperature, heart rate, and locomotor activity. They are used to assess overall animal health, monitor diseases, and detect important events such as parturition. By collecting precise biological information in real time, preventive disease management improves, enhancing animal welfare. Triaxial Accelerometers measure animal movement and are essential for detecting changes in movement patterns, such as inactivity or unusual increases in activity, which may indicate pain, stress, or disease. Additionally, accelerometers help monitor feeding and reproductive behavior, allowing for management adjustments to improve productivity. The use of all these sensors provides objective, real-time data, enabling more informed decision-making and improved livestock management. By integrating these devices, farmers can enhance productivity efficiency, reduce costs associated with animal health, and improve animal welfare.

SPEAKER BIOGRAPHY

Alfonso Abecia, (PhD, Dip ECSRHM) is Full Professor of Animal Production at the Department of Animal Production and Food Science of the Faculty of Veterinary Medicine of the University of Zaragoza, and director of the Research Institute in Environmental Sciences of Aragon (IUCA). He obtained his degree in Veterinary Medicine in 1988 (Universidad de Zaragoza) and his doctorate in 1992 (same university). He spent a year and a half as a postdoctoral researcher at the Macaulay Land Use Research Institute in Aberdeen, Scotland (1992-1993). His main areas of research are the study of the relationships between nutrition and reproduction in sheep, the use of melatonin to improve lamb production, and how socio-sexual signals arise from sexual activity in sheep. It is also involved in aspects of precision farming, such as electronic

identification, virtual fences, accelerometers and biologgers. He is the former president of the UEECA (Union of Spanish Entities of Animal Science), which is the association of the thirteen animal science societies present in Spain.

IEEE MeAVeAS 2025 Venue

IEEE MeAVeAS 2025 will take place at the “**Le Benedettine**” **Conference Center** of the **University of Pisa**.

Le Benedettine Conference Center is an ancient Monastery founded in 1393 and inhabited by nuns. It is located on the south bank of the Arno River, in an area historically known as "Tegularia" during the late Middle Ages. Over the centuries, the monastery has undergone significant renovations.

Today, no longer serving cult place, it has been fully restored and transformed into a venue for meetings and conferences by the University of Pisa. The Conference Venue is located in the city centre, at walking distance from the main railway station.

ADDRESS

Piazza S. Paolo a Ripa D'Arno, 16

Pisa, Italy

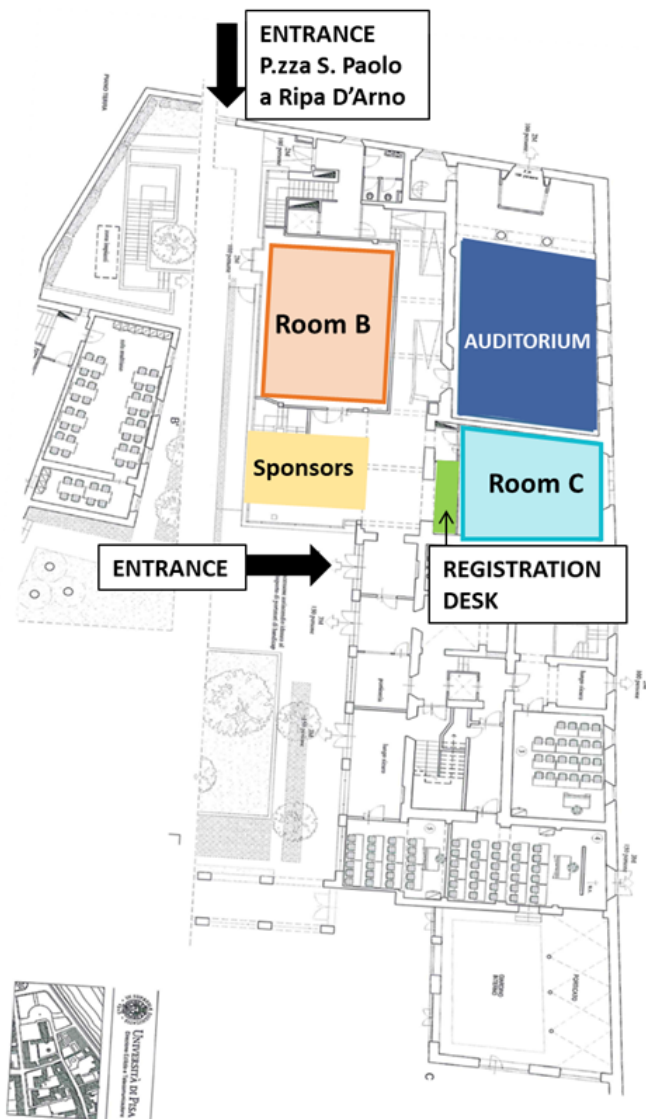
Use the QRCode to open the location on *Google Maps*



MAP



LE BENEDETTINE - CONFERENCE ROOMS



IEEE MeAVeAS 2025 Social Events



WELCOME RECEPTION - MONDAY, 28TH APRIL, 2025 – 18:45

The IEEE MeAVeAS **Welcome Reception** will be held at the “*Chiostro Santa Maria del Carmine*” on Monday, 28th April, at 18:45.



ADDRESS

Corso Italia 85, Pisa, Italy

← Use the QRCode on the left to reach the venue



SOCIAL DINNER - TUESDAY, 29TH APRIL, 2025 – 20:00

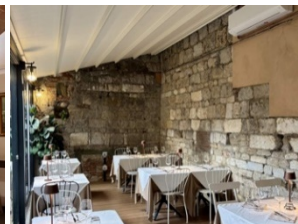
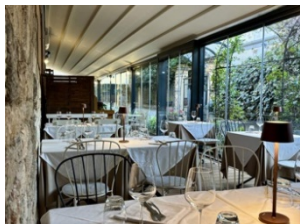
The IEEE MeAVeAS **Social Dinner** will be held at “*La Corte di San Leonardo*” on Tuesday, 29th April, at 20:00.



ADDRESS

Via Roma 40, Pisa, Italy

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Program Schedule

Monday, 28th April, 2025

Monday, 28 th April, 2025			
	Auditorium	Room B	Room C
11:00 – 12:00	 Opening Ceremony (Auditorium)		
12:00 – 13:00	A1.1 Physiological Measurements of Animal Welfare - Part I (SS2_I)	B1.1 Machine Learning in Veterinary Science - Part I (SS6_I)	C1 Measurement Techniques and Tools in Animal Reproduction (SS15)
13:00 – 14:20	Lunch		
14:20 – 15:20	Keynote Speech (Auditorium) <i>"How AI can transform the entire agricultural industry, or not"</i> <i>Prof. Miel Hostens, Cornell University, Ithaca NY, USA</i>		
15:20 – 16:00	A1.2 Physiological Measurements of Animal Welfare - Part II (SS2_II)	B1.2 Machine Learning in Veterinary Science - Part II (SS6_II)	C2.1 Circularity and Implications on Sustainability Assessment in Breeding and Food Production: New Methods and Approaches - Part I (SS18_I)
16:00 – 16:30	Coffee Break		
16:30 – 17:50	A1.3 Physiological Measurements of Animal Welfare - Part III (SS2_III)	B2 Innovation, Precision and Creation: New Tools for Measurement and Visualization in Macroscopic and Microscopic Anatomy (SS9)	C2.2 Circularity and Implications on Sustainability Assessment in Breeding and Food Production: New Methods and Approaches - Part II (SS18_II)
18:45	Welcome Reception: Chiostro Santa Maria del Carmine (Corso Italia 85, Pisa, Italy)		


Program Schedule

Tuesday, 29th April, 2025

Tuesday, 29 th April, 2025			
	Auditorium	Room B	Room C
9:00 – 10:40	A2.1 Innovative Approaches and Tools for Measuring Performances, Health, and Welfare in Farmed Animals – Part I (SS5_I)	B3.1 Biologging in Veterinary and Animal Sciences: Measuring Physiology, Behaviour and Movement - Part I (SS1_I)	C3.1 Metrology in Food Production Chain – Part I (SS4_I)
10:40 – 11:10	Coffee Break		
11:10 – 12:00	A2.2 Innovative Approaches and Tools for Measuring Performances, Health, and Welfare in Farmed Animals– Part II (SS5_II)	B3.2 Biologging in Veterinary and Animal Sciences: Measuring Physiology, Behaviour and Movement - Part II (SS1_II)	C3.2 Metrology in Food Production Chain – Part II (SS4_II)
12:00 – 13:00	Keynote Speech (Auditorium) "Sensors for Monitoring Physiological Aspects of Livestock Species" Prof. José Alfonso Abecia, University of Zaragoza, Spain		
13:00 – 14:20	Lunch sponsored by Star-Oddi		
14:20 – 16:00	A2.3 Innovative Approaches and Tools for Measuring Performances, Health, and Welfare in Farmed Animals–Part III (SS5_III)	B4 Innovative Technologies for Parasite and Vector Control (SS11)	C4 Precision Nutrition Technologies in Animal Husbandry: Advancements and Future Perspectives (SS3)
	A3 Mass Spectrometry as a Cutting-Edge Tool in Veterinary and Animal Science (SS16)		C5 Measuring Microplastics (MPs) and Nanoplastics (NPs) in the Livestock Sector (SS13)
16:00 – 16:30	Coffee Break		
16:30 – 18:00	Women in Science Session (Auditorium) "Perspectives on Women's Careers in Engineering and Veterinary Science"		
20:00	Social Dinner: "La Corte di San Leonardo" Restaurant (Via Roma 40, Pisa, Italy)		

Program Schedule

Wednesday, 30th April, 2025

Wednesday, 30 th April, 2025			
	Auditorium	Room B	Room C
8:40 – 10:40	Round Table (Auditorium) “Patent Process: From Idea to Commercialization”		
10:40 – 11:10	Coffee Break		
11:10 – 12:50	A4 Advanced Technologies and Measurement Tools for Clinical Diagnostic Procedures in Veterinary Medicine (SS10)	B5 The Importance of Measurements and Indices in Cyto and Histopathology of Tissues from Companion and Farmed Animals (SS14)	C6 Application of Measurement Concepts in Veterinary Microbiology and Infectious Diseases (SS8)
			C7 Radio Frequency Technologies for Animal Identification and Tracking (SS17)
12:50 – 13:20	 Closing and Award Ceremony (Auditorium)		

Technical Program

Monday, 28th April, 2025

10:00 - 17:00 *Le Benedettine Conference Center*
REGISTRATIONS

11:00 - 12:00 *Auditorium - Le Benedettine Conference Center*
OPENING CEREMONY
Chairs: Francesco Di Iacovo, *University of Pisa, Italy*
Bernardo Tellini, *University of Pisa, Italy*



Institutional greetings

Riccardo Zucchi, *Rector of the University of Pisa, Italy*

Francesco Paolo Di Iacovo, *Honorary Chair, University of Pisa, Italy*

Bernardo Tellini, *Honorary Chair, University of Pisa, Italy*

Vincenzo Migliarotta, *Director of the Department of Veterinary Science, University of Pisa, Italy*

Renato Iannelli, *Director of the Department of Energy, Systems, Territory and Constructions Engineering, University of Pisa, Italy*

Welcome Message

Chiara Mariti and Mirko Marracci, *General Chairs, University of Pisa, Italy*

Overview of the Technical Program

Duccio Panzani, Alice Buffi, Lisa Guardone, and Luca Turini, *TPC Co-Chairs, University of Pisa, Italy*

12:00 - 13:00 *Auditorium - Le Benedettine Conference Center*
Session A1.1 - Physiological Measurements of Animal Welfare - Part I
Organizers: Olimpia Barbato (University of Perugia, Italy), Laura Menchetti (University of Camerino, Italy), Stella Agradi (University of Torino, Italy)
Giulio Curone, Alda Quattrone, and Nour Elhouda Fehri (University of Milano, Italy)
Chairs: Laura Menchetti, *University of Camerino, Italy*
Alda Quattrone, *University of Milano, Italy*

- 12:00 Non-Invasive Stress Monitoring in Domestic Dogs: a Multi-Parameter Approach Incorporating Body Temperature, Behaviour, and Hormonal Indicators**
Giacomo Riggio (University of Pisa, Italy); Durmus Atilgan (University of Ankara, Turkey); Carmen Borrelli, Giulia Russo, and Chiara Mariti (University of Pisa, Italy)
- 12:10 Impacts of Animal Assisted Interventions on Elderly Wellbeing and Canine Welfare: a Multiparametric Assessment**
Carmen Borrelli, Giulia Granai, Giulia Russo, Francesco Di Iacovo, Angelo Gazzano, Roberta Moruzzo, and Chiara Mariti (University of Pisa, Italy)
- 12:30 Smart Textiles to Assess Physiological and Emotional States in Horses During Positive Reinforcement Training**
Martina Felici (University of Bologna, Italy); Angelo Gazzano, and Micaela Sgorbini (University of Pisa, Italy); Antonio Lanata (University of Florence, Italy); Aobh Gray and Adam R Reddon (Liverpool John Moores University, United Kingdom); Paolo Baragli (University of Pisa, Italy)
- 12:40 Body Condition Assessment in Sled Dogs: Intra- and Inter- Observer Agreement of BCS and Its Correlation with Ultrasonography and Plicometry**
Sergio Maffi (Clinica Veterinaria Maffi, Italy); Alice Bonometti (Clinica Veterinaria La Quercia, Travagliato BS, Italy); Chiara Chiaffredo (Clinica Veterinaria Città di Torino, Italy); Andrea Galimberti (Clinica Veterinaria Caravaggio, Italy); Chiara Barletta (Clinica Veterinaria Fit Pet, Brembate BG, Italy); Laura Menchetti (University of Camerino, Italy); Alda Quattrone (University of Milano, Italy)

12:00 - 13:00 *Room B - Le Benedettine Conference Center*
Session B1.1 - Machine Learning in Veterinary Science - Part I
Organizers: Nicola Pasquino, Angela Salzano, Lucia Trapanese (University of Naples Federico II, Italy), and Miel Hostens (Cornell University, USA)
Chairs: Miel Hostens, *Cornell University, USA*
Angela Salzano, *University of Naples Federico II, Italy*

- 12:00 Recognition of Horse Behaviours Using Deep Learning Techniques**
Claudia Giannone (University of Bologna, Italy); Emanuela Dalla Costa, Chiara Maccario, Elie Atallah (Università Degli Studi di Milano, Italy); Marco Bovo (University of Bologna, Italy)
- 12:10 Exploring Saanen Lactation Curves Through Wood and Milkbot Models**
Lucia Trapanese, Francesca Aragona, Giovanna Bifulco, Nadia Piscopo, Giuseppe Campanile, and Angela Salzano (University of Naples Federico II, Italy)
- 12:20 Use of Machine Learning Models for Detection of Dry off Intramammary Infections in Dairy Cows**
Luca Barin, Giorgio Marchesini, and Paolo Balasso (University of Padua, Italy); Antonio Barberio, Lara Biasio, Erica Littamè, and Federico Martignago (Istituto Zooprofilattico

Sperimentale delle Venezie, Italy); Henk Hogeveen and Mariska van der Voort (Wageningen University & Research, The Netherlands)

12:40 Assessing the Future Production Level of Dairy Cows with Machine Learning Tools
Marco Bovo (University of Bologna, Italy); Laura Ozella and Edoardo Fiorilla (University of Turin, Italy); Daniele Torreggiani and Patrizia Tassinari (University of Bologna, Italy)

12:50 Real-Time Classification of Ovine Pulmonary Diseases in Sheep Lungs Using AI-Powered CNN Models and Edge Computing
Muhammad Furqan Arshad (University of Sassari, Italy); Tesfalem Mehari Berhe (University of Pisa, Italy); Giovanni Lai (University of Sassari, Italy); Ilaria Fadda (IZS Sassari, Italy); Antonio Varcasia and Maria Luisa Pinna Parpaglia (University of Sassari, Italy); Riccardo Bazzardi (Istituto Zooprofilattico Sperimentale della Sardegna, Italy); Davide Adami (CNIT Pisa Research Unit, University of Pisa, Italy); Delaram Ghadir, Setayesh Ghadir and Stefano Giordano (University of Pisa, Italy); Ciriaco Ligios (Istituto Zooprofilattico Sperimentale della Sardegna, Italy); Giovanni Pietro Burrai (University of Sassari, Italy)

12:00 - 12:50 *Room C - Le Benedettine Conference Center*
Session C1 - Measurement Techniques and Tools in Animal Reproduction
Organizers: Matteo Tesi (University of Pisa, Italy), Jole Mariella (University of Bologna, Italy), Jasmine Fusi (University of Milano, Italy), and (Antonella Mastrorocco (University of Bari, Italy)
Chairs: Jasmine Fusi, *University of Milano, Italy*
Duccio Panzani, *University of Pisa, Italy*

12:00 Assessment of Pelvic Diameter in Calves During Parturition Using Measurements of the Leg Distal Bone Diameters to Determine Delivery Method
Mirko Marracci, Duccio Panzani, Carmelo De Maria, Gianluca Caposciutti, Alice Buffi, and Bernardo Tellini (University of Pisa, Italy)

12:20 Performing Early Pregnancy Tests on Milk and Their Effect on Cow Welfare Compared to Rectal Pregnancy Tests 40 -45 Days Post-Insemination
Yaniv Lavon (Israel Cattle Breeders Association, Israel); Shmuel Friedman (Company & ISRAEL DAIRY BOARD, Israel)

12:40 Evaluation of a New Technological Device for Continuous Monitoring of Vital Functions in Newborn Foals
Maria Chiara Alterisio, Chiara Del Prete, Beatrice Mercaldo, Chiara Montano, Mariaelena De Chiara, Maria Pia Pasolini, and Paolo Ciaramella (University Federico II Naples, Italy)

13:00 - 14:20 *Le Benedettine Conference Center*
LUNCH

14:20 - 15:20

Auditorium - Le Benedettine Conference Center

PLENARY SESSION - KEYNOTE SPEECH

Chair: Mirko Marracci, *University of Pisa, Italy*

How AI can transform the entire agricultural industry, or not

Miel Hostens, *Cornell University, Ithaca NY, USA*

15:20 - 16:00

Auditorium - Le Benedettine Conference Center

Session A1.2 - Physiological Measurements of Animal Welfare - Part II

Organizers: Olimpia Barbato (University of Perugia, Italy), Laura Menchetti (University of Camerino, Italy), Stella Agradi (University of Torino, Italy) Giulio Curone, Alda Quattrone, and Nour Elhouda Fehri (University of Milano, Italy)

Chairs: Olimpia Barbato, *University of Perugia, Italy*
Stella Agradi, *University of Torino, Italy*

15:20 Hormonal Changes as Physiological Indicators of Welfare in Rabbit Does Supplemented with Omega-3

Alda Quattrone and Nour Elhouda Fehri (University of Milano, Italy); Stella Agradi (University of Torino, Italy); Laura Menchetti (University of Camerino, Italy); Olimpia Barbato (University of Perugia, Italy); Daniele Vigo (University of Milano, Italy); Luigi Turmalaj and Majlind Sulçe (University of Tirana, Albania); Marta Castrica (University of Padova, Italy); Maria Laura Marongiu (University of Sassari, Italy); Alessandro Dal Bosco (University of Perugia, Italy); Rafik Belabbas (Higher National Veterinary School, Algeria); Gerald Muça (University of Tirana, Albania); Fabio Gualazzi (University of Camerino, Italy); Gabriele Brecchia and Giulio Curone (University of Milano, Italy)

15:30 Metabolic Response and Growth Performance in Fattening Rab-Bits Supplemented with Linseed and Padina Pavonica Algae

Nour Elhouda Fehri (University of Milano, Italy); Stella Agradi (University of Torino, Italy); Laura Menchetti (University of Camerino, Italy); Olimpia Barbato (University of Perugia, Italy); Daniele Vigo and Giulio Curone (University of Milano, Italy); Marta Castrica (University of Padova, Italy); Simona Mattioli (University of Perugia, Italy); Sebastiana Failla and Michela Conto (CREA, Italy); Albana Munga (University of Tirana, Albania); Enkeleda Ozuni (University of Albania, Albania); Egon Andoni (University of Tirana, Albania); Fabio Gualazzi (University of Camerino, Italy); Bayrem Jemmali (University of Carthage, Tunisia); Sayed Abdel Kafi Mahfoz (Animal Production Research Institute, Egypt); Gabriele Brecchia and Alda Quattrone (University of Milano, Italy)

15:40 Hair Steroid Quantification: a Non-Invasive Method to Asses Reproductive and Welfare in Wild and Laboratory Species

Mattia Cesauri (Università di Pisa, Italy); Domenico Ventrella, Ilaria Troisio, Nadia Govoni, and Maria Laura Bacci (University of Bologna, Italy); Alberto Elmi (University of Pisa, Italy)

15:50 Animal Welfare Measures in the CAP 2023 - 2027: a Comparison of Member States with a Focus on Italian Outcomes During the First Year of Implementation

Giulia Pastorelli, Pietro Manzoni Di Chiosca Poggiolo, and Rita Iacono (CREA, Italy)

15:20 - 16:00

Room B - Le Benedettine Conference Center

Session B1.2 - Machine Learning in Veterinary Science - Part II

Organizers: Nicola Pasquino, Angela Salzano, Lucia Trapanese (University of Naples Federico II, Italy), and Miel Hostens (Cornell University, USA)
Miel Hostens, *Cornell University, USA*

Chairs: Nicola Pasquino, *University of Naples Federico II, Italy*
Lucia Trapanese, *University of Naples Federico II, Italy*

15:20 An Innovative Approach to Raise and Manage Buffalo Herds

Valentina Russo (Logogramma, Italy); Lucia Trapanese (University of Naples Federico II, Italy); Martina Di Bratto and Marco Grazioso (Logogramma, Italy); Nicola Pasquino and Angela Salzano (University of Naples Federico II, Italy); Azzurra Mancini (Logogramma, Italy)

15:40 Leveraging Machine Learning and Explainable AI for Animal Health Assessment and Nutritional Analysis

Michele Magarelli (Università Degli Studi di Bari, Italy); Pierfrancesco Novielli and Donato Romano (Università Degli Studi di Bari Aldo Moro and INFN, Italy); Pierpaolo Di Bitonto (Università Degli Studi di Bari Aldo Moro, Italy); Sabina Tangaro (Università Degli Studi di Bari Aldo Moro and INFN, Italy)

15:50 Exploring Buffalo Lactation Curves with Clustering Algorithms

Nunzia Solmonte, Lucia Trapanese, Angela Salzano, and Nicola Pasquino (University of Naples Federico II, Italy)

15:20 - 16:00

Room C - Le Benedettine Conference Center

Session C2.1 - Circularity and Implications on Sustainability Assessment in Breeding and Food Production: New Methods and Approaches - Part I

Organizers: Carlo Russo, Sergio Saia, Francesco Riccioli (University of Pisa, Italy), and Giulio Mario Cappelletti (University of Foggia)

Chairs: Carlo Russo, *University of Pisa, Italy*
Giulio Mario Cappelletti, *University of Foggia, Italy*
Carlo Bibbiani, *University of Pisa, Italy*

- 15:20 Assessing Water Scarcity in the Poultry Chain**
Carlo Russo (University of Pisa, Italy); Giulio Mario Cappelletti and Filomena Chiara (University of Foggia, Italy); Pietro Russo (Data Analyst, Italy); Antonio Giovanni D'emilio (Department of Health Prevention, Italy); Giovanna Liguori (University of Naples, Italy)
- 15:30 Low-Cost IoT Sensors for Environmental Monitoring in Veterinary Applications**
 Alessandro Franco, Emanuele Crisostomi, and Carlo Bibbiani (University of Pisa, Italy)
- 15:40 Adopting Insect Meal in the Italian Trout Farming: a Multistage Process**
Margherita Masi, Yari Vecchio, and Ernesto Simone Marrocco (University of Bologna, Italy); Marcello De Rosa (University of Cassino, Italy); Felice Adinolfi (University of Bologna, Italy)
- 15:50 Unlocking the Economic Potential of Neglected and Underutilized Fish Species as Food**
Yari Vecchio and Margherita Masi (University of Bologna, Italy); Francesca Troise (University of Padova, Italy); Felice Panebianco and Tiziana Civera (University of Turin, Italy); Laura Prandini, Federica Savini, and Valentina Indio (University of Bologna, Italy); Valentina Terio, Elisabetta Bonerba, and Annamaria Pandiscia (University of Bari Aldo Moro, Italy); Leonardo Alberghini (University of Padova, Italy); Alessandra De Cesare and Andrea Serraino (University of Bologna, Italy); Federica Giacometti (University of Padova, Italy)

16:00 - 16:30 *Le Benedettine Conference Center*
COFFEE BREAK

16:30 - 17:30 *Auditorium - Le Benedettine Conference Center*
Session A1.3 - Physiological Measurements of Animal Welfare - Part III
Organizers: Olimpia Barbato (University of Perugia, Italy), Laura Menchetti (University of Camerino, Italy), Stella Agradi (University of Torino, Italy) Giulio Curone, Alda Quattrone, and Nour Elhouda Fehri (University of Milano, Italy)
Chairs: Giulio Curone, *University of Milano, Italy*
 Nour Elhouda Fehri, *University of Milano, Italy*

- 16:30 Assessment of Plasma Concentrations of Procalcitonin (PCT), Protein Carbonylated Content (PCC), Symmetric Dimethylarginine (SDMA) and Asymmetrical Dimethylarginine (ADMA) in Healthy Dairy Cows During Lactation**
Giulia Sala, Giovanni Armenia, Chiara Orsetti, Matteo Castelli, Valentina Meucci, Lucia De Marchi, Micaela Sgorbini, and Francesca Bonelli (University of Pisa, Italy)

16:40 Impact of Milking Practices on the Welfare of Dairy Camels: a Behavioural and Physiological Approach

Marwa Brahmi (University of Sousse, Tunisia); Moufida Atigui (Institution de la Recherche et de l'Enseignement Supérieur Agricoles (IRESA), Tunisia); Mohamed Hammadi (Université de Gabès, Tunisia)

16:50 Optimization of Holstein Cow Lactation Curves in Tunisia: Im-Pact on Milk Production and Animal Welfare

Mohamed Amine Ferchichi and Safa Bejaoui (University of Carthage, Tunisia); Nour Elhouda Fehri (University of Milano, Italy); Laura Menchetti (University of Camerino, Italy); Gabriele Brecchia (University of Milan, Italy); Bayrem Jemmali (University of Carthage, Tunisia)

17:00 Monitoring Metabolic and Hormonal Changes in Sarda Rams Throughout the Breeding Season: a Key to Optimizing Their Management and Productivity

Francesca D. Sotgiu and Claudia Caporali (University of Sassari, Italy); Antonio Spezzigu (Embryosardegna, Tecnologia, Riproduzione e Fertilità, Perfugas, Sardinia, Italy); Matteo Sini, Andrea Mattu, Valeria Pasciu, and Francesca Mossa (University of Sassari, Italy); Pawel M Bartlewski (University of Guelph, Canada); Fiammetta Berlinguer (University of Sassari, Italy)

17:10 The Importance of Bovine Tuberculosis Genetic Resistance in Im-Proving Animal Welfare

Safa Bejaoui (University of Carthage, Tunisia); Nour Elhouda Fehri (University of Milano, Italy); Mohamed Amine Ferchichi (University of Carthage, Tunisia); Laura Menchetti (University of Camerino, Italy); Gabriele Brecchia (University of Milan, Italy); Bayrem Jemmali (University of Carthage, Tunisia)

17:20 Livestock Animal Hair as Indicator of Environmental Heavy Metals Pollution in Central Albania

Stella Agradí (University of Torino, Italy); Egon Andoni and Xhelil Koleci (University of Tirana, Albania); Enkeleda Ozuni (University of Albania, Albania); Rezart Postoli (University of Tirana, Albania); Laura Menchetti (University of Camerino, Italy); Gabriele Brecchia and Alda Quattrone (University of Milano, Italy); Mehmet Erman Or and Bengü Bilgiç (Istanbul University Cerrahpasa, Turkey); Duygu Tarhan (Bahcesehir University, Turkey); Ilir Dova (University of Tirana, Albania); Claudia Maria Balzaretto and Nour Elhouda Fehri (University of Milano, Italy); Ibrahim Ertugrul Yalcin (Bahcesehir University, Turkey); Albana Munga, Doriana Beqiraj and Pellumb Zalla (University of Tirana, Albania); Olimpia Barbato (University of Perugia); Giulio Curone (University of Milano, Italy); Marta Castrica (University of Padova, Italy)

16:30 - 17:50

Room B - Le Benedettine Conference Center

Session B2 - Innovation, Precision and Creation: New Tools for Measurement and Visualization in Macroscopic and Microscopic Anatomy

Organizers: Andrea Pirone (University of Pisa, Italy), Jean-Marie Graïc (University of Padova, Italy), Valentina Vadori (London South Bank University, UK), and Etienne Levy (One Health Photography, France)

Chairs: Jean-Marie Graïc, *University of Padova, Italy*

Valentina Vadori, *London South Bank University, UK*

- 16:30 How to Measure Neurons: a Pipeline to Characterize Their Shape and Morphology**
Federico Tozzi and Ester Bruno (University of Pisa, Italy); Simone Cauzzo (University of Padua, Italy); Alejandro Luis Callara (Research Center "E. Piaggio", University of Pisa, Italy); Nicola Vanello, and Chiara Magliaro (University of Pisa, Italy)
- 16:40 Automatic Segmentation of Peripheral Nerve Histological Sections for Hybrid Models of Neuromodulation**
Alice Giannotti and Claudio Verardo (Scuola Superiore Sant'Anna, Italy); Clement Albert (Ecole Polytechnique Federal de Lausanne, Switzerland); Giovanni Faoro (Scuola Superiore Sant'Anna, Italy); Chléa Schiff and Justine Bourgeot (Ecole Polytechnique Federal de Lausanne, Switzerland); Giulia Lazzarini, Andrea Pirone and Vincenzo Miragliotta (University of Pisa, Italy); Sara Moccia (Scuola Superiore Sant'Anna, Italy); Silvestro Micera (Scuola Superiore Sant'Anna, Italy & EPFL, Switzerland); Simone Romeni (EPFL, Switzerland)
- 16:50 Hybridizing Photogrammetry Techniques and AI to Produce a 3D Printing Realistic Replica of the Horse Colon**
Anneliese Demil (University of Liege, Belgium); Etienne Levy (One Health Photography, France); Helene Leroy (University of Liege, Belgium)
- 17:00 Morphometric Analysis of Cerebellar Microglia in Male and Female Rats Using AI-Based Deep Learning**
Giulia Lazzarini and Alessandra Gatta (University of Pisa, Italy); Alessia Cuccaro (Scuola Superiore Sant'Anna, Italy); Naif Onur Ceylan, Vincenzo Miragliotta, and Andrea Pirone (University of Pisa, Italy)
- 17:10 Deep Learning Based Approach to Quantify Cerebellar Neuronal Cell Loss in Feline Neurological Diseases: a New Potential Tool to Overcome Subjective Evaluation**
Giulia Vadori (University of Padova, Italy); Valentina Vadori and Enrico Grisan (London South Bank University, United Kingdom); Maria Teresa Mandara (University of Perugia, Italy); Carlo Cantile (University of Pisa, Italy); Antonella Peruffo, Massimo Castagnaro, and Jean-Marie Graïc (University of Padova, Italy)
- 17:20 Deep Learning-Based Cell Segmentation on Nissl-Stained Histology Slices to Quantify Sexual Dimorphisms in the Cytoarchitecture of the Chimpanzee Cerebellum**
Valentina Vadori (London South Bank University, United Kingdom); Jean-Marie Graïc (University of Padova, Italy); Antonella Peruffo, Livio Finos, and Giulia Vadori

(University of Padova, Italy); Enrico Grisan (London South Bank University, United Kingdom)

17:30 Application of Surface Measurement Techniques in Veterinary and Animal Sciences: Integrating 3D Scanning, Photogrammetry, and 3D Printing

Luca Ceolotto, Jean-Marie Graïc, Tommaso Gerussi, and Sandro Mazzariol (University of Padua, Italy)

17:40 Enhancing Histopathological Assessment: Automated Analysis of Bovine and Equine Optic Nerves

Cağla Aytas, Giulia Lazzarini, Andrea Pirone, and Carlo Cantile (University of Pisa, Italy)

16:30 - 17:40

Room C - Le Benedettine Conference Center

Session C2.2 - Circularity and Implications on Sustainability Assessment in Breeding and Food Production: New Methods and Approaches - Part II

Organizers: Carlo Russo, Sergio Saia, Francesco Riccioli (University of Pisa, Italy), and Giulio Mario Cappelletti (University of Foggia)

Chairs: Carlo Russo, *University of Pisa, Italy*

Giulio Mario Cappelletti, *University of Foggia, Italy*

Carlo Bibbiani, *University of Pisa, Italy*

16:30 Sustainable Grass-Fed Supply Chain: the "Filerba" Case

Giulio Mario Cappelletti (University of Foggia, Italy); Giorgio Mina (University of Turin, Italy); Carlo Russo (University of Pisa, Italy); Alessandro Bonadonna and Giovanni Peira (University of Turin, Italy)

16:40 Soil Health and Circularity in Livestock Breeding

Carlo Russo, Francesco Riccioli, and Carlo Bibbiani (University of Pisa, Italy); Giulio Mario Cappelletti (University of Foggia, Italy); Sergio Saia (University of Pisa, Italy)

16:50 Towards Sustainable Mussel Farming: Innovative Practices and Perceptions of Italian Operators

Ernesto Simone Marrocco, Gizem Yeter, Emanuele Dolfi, Margherita Masi, Yari Vecchio, and Felice Adinolfi (University of Bologna, Italy)

17:00 ARMONIA: an Automated Remote MONitoring System of Nitrogen in Agriculture

Alessandra Apostolico, Francesco Bonavolontà, Ester Scotto di Pertà, Pierluigi Guerriero, Maria Teresa Verde, and Stefania Pindozi (University of Naples Federico II, Italy)

17:10 Comparison Between Offshore and Inland Aquaculture from an Environmental Perspective

Michele Zoli (University of Milan, Italy); Lorenzo Rossi, Carlo Bibbiani, and Baldassare Fronte (University of Pisa, Italy); Aurelie Wilfart, Christophe Jaeger, and Joël Aubin

(INRAE, Italy); Alberto Pardossi (University of Pisa, Italy); Jacopo Bacenetti (University of Milano, Italy)

17:20 Smart Monitoring and Control of the Environmental Conditions of a Swine Nursery Barn for Fossil-Free Heating

Stefano Benni, Carlos Alejandro Perez Garcia, Claudia Giannone, Patrizia Tassinari, and Daniele Torreggiani (University of Bologna, Italy)

18:45	<i>Chiostro Santa Maria del Carmine (Corso Italia 85, Pisa, Italy)</i> WELCOME RECEPTION
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Technical Program

Tuesday, 29th April, 2025

08:30 - 17:00 *Le Benedettine Conference Center*
REGISTRATIONS

09:00 - 10:40 *Auditorium - Le Benedettine Conference Center*
Session A2.1 - Innovative Approaches and Tools for Measuring Performances, Health, and Welfare in Farmed Animals - Part I
Organizers: Marco Birolo (University of Padova, Italy), Alice Cartoni Mancinelli (University of Perugia, Italy), Edoardo Fiorilla (University of Turin, Italy), and Martina Zappaterra (University of Bologna, Italy)
Chairs: Edoardo Fiorilla, *University of Turin, Italy*
Martina Zappaterra, *University of Bologna, Italy*

09:00 Do the Largemouth Bass Like Live Insects? a Preliminary Study with Three Insect Species as Feed Enrichment
Emma Copelotti (University of Pisa, Italy); Veronica Trabacchin and Sofia Violino (University of Padova, Italy); Simone Mancini (University of Pisa, Italy); Marco Birolo (University of Padova, Italy)

09:10 Antimicrobial Resistance and Virulence Genes in Escherichia Coli Isolated from Young Healthy Chickens
Giulia Cagnoli, Fabrizio Bertelloni, Margherita Marzoni Fecia Di Cossato, and Valentina Virginia Ebani (University of Pisa, Italy)

09:20 Application of Digital Technologies to Promote Coexistence Between Wolves and Sheep Farms
Alessia Di Rosso and Carlo Bibbiani (University of Pisa, Italy); Sandra Evans (Apidea Ltd, United Kingdom); Lucia Casini (University of Pisa, Italy); Huw Evans (Apidea Ltd, United Kingdom); Francesca Coppola, Chiara Benedetta Boni, and Antonio Felicioli (University of Pisa, Italy)

09:30 Potential Application of Precision Technology to Monitor Welfare and Interactions of Cage-Farmed Fish with Wild Fish Species
Alessandra Roncarati, Martina Quagliardi, Gian Enrico Magi, Francesca Mariotti, and Livio Galosi (University of Camerino, Italy); Michele Di Iorio, Giusy Rusco, Emanuele Antenucci, Isabella Coccia, and Celeste Santoianni (University of Molise, Italy); Michela Cariglia (Consorzio Gargano Pesca, Italy); Luca Pozzato (Aquacloud, Polo Tecnologico Trentino Sviluppo, Italy); Nicolaia Iaffaldano (University of Molise, Italy)

- 09:40 Development and Validation of a Multi-Source Decision Support System for Cold Stress Management in Dairy Buffalo Farming, Including IoT Sensors and Milking Robot Data**
Maria Teresa Verde, Roberta Matera, Matteo Santinello, Francesco Bonavolontà, Lorenzo Coppola, Pierluigi Guerriero, and Gianluca Neglia (University of Naples Federico II, Italy)
- 09:50 Enhancing Dairy Goat Health Monitoring: Thermal Imaging for Heat Stress Detection and Behavioural Insights**
Martina Felici, Naod Thomas Masebo, Marilena Bolcato, Martina Zappaterra, Barbara Padalino, and Leonardo Nanni Costa (University of Bologna, Italy)
- 10:00 Fluorescent Microneedles for Real-Time Analyte Detection via Optical Readout**
Farbod Abazar and Giuseppe Barillaro (University of Pisa, Italy)
- 10:10 Evaluating Welfare, Milk Quality and Yield of Rendena Cows in Loose vs. Tied Housing Systems**
 Silvia Sabbadin and Silvia Magro (University of Padova, Italy); Angela Costa (University of Bologna, Italy); Valentina Lorenzi, Francesca Fusi, and Luigi Bertocchi (Istituto Zooprofilattico Sperimentale Lombardia ed Emilia Romagna, Italy); Massimo De Marchi (University of Padua, Italy)
- 10:20 Dolfake: an Open-Source 3d Printed Dolphin Allowing the Standardization of Stranding Data Collection**
 Etienne Levy (One Health Photography, France); Imane Taï (INRH, Morocco); Thierry Jauniaux (University of Liege, Belgium); Maÿlis Salivas (ACCOBAMS, Monaco)

09:00 - 10:40 *Room B - Le Benedettine Conference Center*
Session B3.1 - Biologging in Veterinary and Animal Sciences: Measuring Physiology, Behaviour and Movement - Part I
Organizers: José Alfonso Abecia (Universidad de Zaragoza, Spain) and Asgeir Bjarnason (Star-Oddi, Iceland)
Chairs: José-Alfonso Abecia, *Universidad de Zaragoza, Spain*
 Asgeir Bjarnason, *Star-Oddi, Iceland*

- 09:00 From Wildlife to Domestic: How New Technologies Can Help Veterinary and Animal Sciences**
 Carlo Catoni and Marco Cianchetti (Ornis italica & Technosmart Europe srl, Italy)
- 09:10 Exogenous Melatonin Alters Nocturnal and Diurnal Locomotor Activity, Body Temperature, Heart Rate, and Heart Rate Variability in Lambs, Measured by Triaxial Accelerometers and Subcutaneous Biologgers**
José-Alfonso Abecia (Universidad de Zaragoza, Spain); Carlos Palacios, Jaime Nieto and Javier Plaza (Universidad de Salamanca, Spain); Francisco Canto (Universidad de Zaragoza, Spain)

- 09:20 Smart Farming in Aquaculture: Using Biologgers to Improve Welfare and Yield**
Asgeir Bjarnason (Star-Oddi, Iceland)
- 09:40 Effect of Aquarium Environmental Enrichment in Welfare of Ornamental Fish (*Poecilia Reticulata*)**
Riccardo Crosetto, Elisabetta Macchi, Isabella Manenti, Martina Tarantola, Benedetto Sicuro, Patrizia Ponzio, Valentina Tafuro, and Cecilia Mugnai (University of Turin, Italy)
- 09:50 Cardiac Activity of Horses During Training Measured with External Polar Sensors**
Carlos Palacios, Santos Del Pozo, Jaime Nieto, and Javier Plaza (Universidad de Salamanca, Spain); José-Alfonso Abecia (Universidad de Zaragoza, Spain)
- 10:00 Unveiling Sleep in Horses: Monitoring Lying Behaviour in Different Housing Conditions**
Chiara Maccario (Università degli Studi di Milano, Italy); Elena Gobbo and Manja Zupan Šemrov (University of Ljubljana, Slovenia); Marco Bovo (University of Bologna, Italy); Elie Atallah, and Emanuela Dalla Costa (Università Degli Studi di Milano, Italy)
- 10:10 Monitoring Behavior in Heat-Stressed Dairy Buffaloes: General Pattern and Effect of a Nutritional Strategy**
Francesca Petrocchi Jasinski, Chiara Evangelista, and Loredana Basiricò (University of Tuscia, Italy); Miriam Iacurto, Roberto Steri, and David Meo Zilio (Council for Agricultural Research and Economics, Italy); Umberto Bernabucci (University of Tuscia, Italy)
- 10:20 Activity of Native Spanish Roosters (*Castellana Negra* and *Pita Pinta*) in Response to Hens of Different Breeds, Measured by Actigraphy**
Carlos Palacios, Jaime Nieto, and Javier Plaza (Universidad de Salamanca, Spain); José-Alfonso Abecia (Universidad de Zaragoza, Spain)
- 10:30 Precision Beekeeping Systems as Tools for Monitoring Bees to Agroecosystems Interactions**
Pier Paolo Danieli, Raffaello Spina, Riccardo Primi, Filippo Lazzari, Gloria Bernabucci, Federico Manganello, Paolo Viola, Pedro Girotti, and Bruno Ronchi (University of Tuscia, Italy)

09:00 - 10:40 *Room C - Le Benedettine Conference Center*
Session C3.1 - Metrology in Food Production Chain - Part I
Organizers: Andrea Armani (University of Pisa, Italy), Raffaella Branciarì (University of Perugia, Italy), Raffaele Marrone (University of Naples Federico II, Italy), and Felice Panebianco (University of Torino, Italy)
Chairs: Raffaele Marrone, *University of Naples Federico II, Italy*
Felice Panebianco, *University of Turin, Italy*

- 09:00 Assessment of Plasma Treated Seawater (PTSW) in Shellfish Depuration Systems**
Annamaria Pandiscia, Eloisa Sardella, Patrizio Lorusso, Alessio Manfredi, and Valentina Terio (University of Bari Aldo Moro, Italy)
- 09:10 Valorisation of Neglected Fish Species Through the Dry-Curing Process: Microbiological Assessment of Thinlip Grey Mullet Fillets**
Francesca Troise (University of Padova, Italy); Felice Panebianco and Tiziana Civera (University of Turin, Italy); Laura Prandini, Federica Savini, Valentina Indio, Margherita Masi, and Yari Vecchio (University of Bologna, Italy); Valentina Terio, Elisabetta Bonerba, and Annamaria Pandiscia (University of Bari Aldo Moro, Italy); Leonardo Alberghini (University of Padova, Italy); Alessandra De Cesare and Andrea Serraino (University of Bologna, Italy); Federica Giacometti (University of Padova, Italy)
- 09:20 Analytical Measurement of Goat Cheese Aroma: Use of Electronic Nose Technology to Identify Products and to Value Their Quality**
Marica Egidio, Roberta Matera, Marika Di Paolo, Federica Pierro (University of Naples Federico II, Italy); Loriana Casalino (Universitas Mercatorum, Italy); Sophia Alesio and Raffaele Marrone (University of Naples Federico II, Italy)
- 09:30 Application of Next-Generation Sequencing Technologies to Insect-Based Products: Species Authentication and Microbiome Characterisation for Risk Assessment**
Gabriele Spatola, Alice Giusti, Simone Mancini, Lara Tinacci, Roberta Nuvoloni, Filippo Fratini, and Francesco Di Iacovo (University of Pisa); Laura Gasperetti (Istituto Zooprofilattico Sperimentale Lazio e Toscana, Italy); Andrea Armani (FishLab, Department of Veterinary Sciences, University of Pisa)
- 09:50 Using Cricket Flour (*Acheta Domesticus*) as an Additional Source of Protein in the Production of Freshwater Fish Patties**
Filomena Limone (University of Perugia, Italy); Sara Di Bella (IZSUM, Italy); Paolo Mantione (Alphafood s.r.l, Italy); David Ranucci, and Rossana Roila (University of Perugia, Italy); Maria Lucia Mercuri (IZSUM, Italy); Raffaella Franceschini (University Guglielmo Marconi, Italy); Raffaella Branciarì (University of Perugia, Italy)
- 10:00 Determination of Iodine Content in Dairy Food Matrices**
Giovanni Niero, Marta Pozza, and Massimo De Marchi (University of Padova, Italy)
- 10:10 Measurement of Antioxidant Properties of Lactic Acid Bacteria (LABs) Isolated from Buffalo Milk**
Marika Di Paolo (University of Naples Federico II, Italy); Alejandra Cardelle Cobas (Universidad de Santiago de Compostela, Spain); Rosa Luisa Ambrosio, Marica Egidio and Alma Sardo (University of Naples Federico II, Italy); Carlos Manuel Franco Abuín (Universidad de Santiago de Compostela, Spain); Raffaele Marrone (University of Naples Federico II, Italy)
- 10:20 Controlling *E. Coli* STEC in Raw Milk Cheese: the Role of Curd Testing**
Giulia Cento, Giulia Weiss, Emanuela Cristelli, Katia Debiassi and Sonia Rodas (Istituto Zooprofilattico Sperimentale delle Venezie, Italy); Nicola Cologna, Alice Damaggio,

Marco Nardelli, Pamela Piffer, and Marco Ramelli (Trentingrana Consorzio dei Caseifici Sociali Trentini, Italy); Rosaria Lucchini (Istituto Zooprofilattico Sperimentale delle Venezie, Italy)

10:40 - 11:10 *Le Benedettine Conference Center*
COFFEE BREAK

11:10 - 12:00 *Auditorium - Le Benedettine Conference Center*
Session A2.2 - Innovative Approaches and Tools for Measuring Performances, Health, and Welfare in Farmed Animals - Part II
Organizers: Marco Birolo (University of Padova, Italy), Alice Cartoni Mancinelli (University of Perugia, Italy), Edoardo Fiorilla (University of Turin, Italy), and Martina Zappaterra (University of Bologna, Italy)
Chairs: Edoardo Fiorilla, *University of Turin, Italy*
 Martina Zappaterra, *University of Bologna, Italy*

11:10 **A Smart Harness to Detect Attacks from Predators in Herds**
 Luca Turini, Gianluca Caposciutti, Carlo Mancuso, Alice Buffi, Mirko Marracci, Bernardo Tellini, and Marcello Mele (University of Pisa, Italy)

11:30 **Evaluating Welfare and Stress in Two Slow-Growing Local Poultry Breeds Versus a Commercial Hybrids in a Free-Range Farming System**
Edoardo Fiorilla, Patrizia Ponzio, Elisabetta Macchi, Isabella Manenti, Barbara Miniscalco, Laura Ozella, and Cecilia Mugnai (University of Turin, Italy)

11:40 **Evaluation of Milk Ejection Physiology in Italian Mediterranean Buffaloes Using Lactocorder**
Roberta Matera and Federica Pierro (University of Naples Federico II, Italy); Lorenzo Pascarella (Associazione Italiana Allevatori, Italy & Università Cattolica del Sacro Cuore, Italy); Antonio Iraci Fuintino, Alessia Lombardi, and Giovanmaria Pacelli (University of Naples Federico II, Italy); Stefano Biffani (IBBA - CNR, Italy); Valentina Longobardi (University of Naples Federico II, Italy)

11:50 **Electroencephalographic Analysis of Stunning Effectiveness in Donkeys at Slaughter**
Beatrice Benedetti (University of Bologna, Italy); Katharine Ann Fletcher (Royal Veterinary College, United Kingdom); Mariano Hernandez Gil (National Autonomous University of Mexico, Mexico); Barbara Padalino (University of Bologna, Italy); Troy Gibson (Royal Veterinary College, United Kingdom)

11:10 - 11:40

Room B - Le Benedettine Conference Center

Session B3.2 - Biologging in Veterinary and Animal Sciences: Measuring Physiology, Behaviour and Movement - Part II

Organizers: José Alfonso Abecia (Universidad de Zaragoza, Spain) and Asgeir Bjarnason (Star-Oddi, Iceland)

Chairs: José-Alfonso Abecia, *Universidad de Zaragoza, Spain*
Asgeir Bjarnason, *Star-Oddi, Iceland*

11:10 Weaning Reduces Body Temperature and Heart Rate While Increasing Heart Rate Variability in Ewes

José-Alfonso Abecia (Universidad de Zaragoza, Spain); Asgeir Bjarnason (Star-Oddi, Iceland); Francisco Canto (Universidad de Zaragoza, Spain); Irene Viola, Isabella Manenti, Paola Toschi, and Silvia Miretti (University of Torino, Italy)

11:20 Measuring Activity and Space Use Overlap Between Domestic and Wild Ungulates in a Silvo-Pastoral System Using Camera Traps

Pedro Girotti, Paolo Viola, Gloria Bernabucci, Francesco Spada, Silvia Compagnucci, Carlo Maria Rossi, and Luciano Ortenzi (University of Tuscia, Italy); Luigi Esposito and Nadia Piscopo (University of Naples Federico II, Italy); Bruno Ronchi and Riccardo Primi (University of Tuscia, Italy)

11:30 An IoT-Driven Smart System for Rams' Physiological Status and Activity Monitoring

Delaram Ghadir, Setayesh Ghadir and Tesfalem Mehari Berhe (University of Pisa, Italy); Davide Adami (CNIT Pisa Research Unit, University of Pisa, Italy); Stefano Giordano (University of Pisa, Italy); Pietro Rossi (University of Veterinary Medicine, Sassari, Italy); Claudia Caporali, Antonio Spezzigu, Francesca D. Sotgiu, Francesca Mossa, and Fiammetta Berlinguer (University of Sassari, Italy)

11:10 - 11:50

Room C - Le Benedettine Conference Center

Session C3.2 - Metrology in Food Production Chain - Part II

Organizers: Andrea Armani (University of Pisa, Italy), Raffaella Branciarì (University of Perugia, Italy), Raffaele Marrone (University of Naples Federico II, Italy), and Felice Panebianco (University of Torino, Italy)

Chairs: Raffaele Marrone, *University of Naples Federico II, Italy*
Felice Panebianco, *University of Turin, Italy*

11:10 Measurements of Diet-Related Colour Changes in the Livery and Fillets of Gilthead Seabream: Focus on Quality Characteristics in the InsectFish Project

Emma Copelotti, Asia Zanzot, Chiara Sangiacomo, Roberta Moruzzo and Baldassare Fronte (University of Pisa, Italy); Giulia Andreani and Giovanni Sogari (University of Parma, Italy); Simone Mancini (University of Pisa, Italy)

11:20 Investigating the Microbiome of Acheta Domesticus and Locusta Migratoria-Based Food: a Preliminary Study

Anna Mottola and Chiara Intermite (University of Bari Aldo Moro, Italy); Roberta Piredda (Stazione Zoologica Anton Dohrn, Italy); Lucia Ranieri, Lucilia Lorusso, and Angela Di Pinto (University of Bari Aldo Moro, Italy)

11:30 Application of DNA Metabarcoding for the Botanical Traceability of Honey

Lucia Ranieri (University of Bari Aldo Moro, Italy); Roberta Piredda (Stazione Zoologica Anton Dohrn, Italy); Anna Mottola, Lucilia Lorusso, Chiara Intermite, and Angela Di Pinto (University of Bari Aldo Moro, Italy)

11:40 Boosting Industry Transparency and Sustainability Through Portable Long-Read Sequencing of Processed Seafood Products

Lucilia Lorusso (University of Bari Aldo Moro, Italy); Peter Shum (Liverpool John Moores University, United Kingdom); Anna Mottola (University of Bari Aldo Moro, Italy); Stefano Mariani (Liverpool John Moores University, United Kingdom); Roberta Piredda (Stazione Zoologica Anton Dohrn, Italy); Chiara Intermite, Lucia Ranieri and Angela Di Pinto (University of Bari Aldo Moro, Italy)

12:00 - 13:00 Auditorium - Le Benedettine Conference Center
PLENARY SESSION - KEYNOTE SPEECH
Chair: Chiara Mariti, University of Pisa, Italy

Sensors for Monitoring Physiological Aspects of Livestock Species

José Alfonso Abecia, University of Zaragoza, Zaragoza, Spain

13:00 - 14:20 Le Benedettine Conference Center
LUNCH
Sponsored by Star-Oddi

STAR ODDI
Logging Life Science

14:20 - 15:10 Auditorium - Le Benedettine Conference Center
Session A2.3 - Innovative Approaches and Tools for Measuring Performances, Health, and Welfare in Farmed Animals - Part III
Organizers: Marco Birolo (University of Padova, Italy), Alice Cartoni Mancinelli (University of Perugia, Italy), Edoardo Fiorilla (University of Turin, Italy), and Martina Zappaterra (University of Bologna, Italy)
Chairs: Edoardo Fiorilla, University of Turin, Italy
Martina Zappaterra, University of Bologna, Italy

- 14:20 Bio-Acidification for Mitigating Ammonia Emissions in Dairy Barns: a Preliminary Laboratory Study**
Serena Vitaliano, Grazia Cinardi, Provvidenza Rita D'Urso, Luciano Manuel Santoro, Emanuele La Bella, Rossella Saccone, Ferdinando Fragalà, Alice Finocchiario, and Giovanni Cascone (University of Catania, Italy)
- 14:30 Zebrafish from Human to Veterinary and Animal Sciences: a Key Model for Measuring Physiology, Behaviour, and Nutritional Interventions**
Rosario Licitra, Valentina Gazzano, Carlo Bibbiani, Chiara Sangiacomo (University of Pisa, Italy); Mahanama De Zoysa (Chungnam National University, Korea); Zivile Jurgelene (State Scientific Research Institute Nature Research Centre, Lithuania); Filippo Santorelli and Maria Marchese (IRCCS Stella Maris Foundation, Italy); Alessandro Cellerino and Letizia Brogi (Scuola Normale Superiore, Italy); Baldassare Fronte (University of Pisa, Italy)
- 14:40 APPàre: the Digital Platform for Innovation in the Sardinian Livestock Sector**
Matteo Sini, Andrea Mattu, Pietro Masala, and Antonio Spezzigu (University of Sassari, Italy); Nicoletta Deiana and Tiziana Fanni (Abinsula srl, Italy); Riccardo Bazzardi and Ciriaco Ligios (Istituto Zooprofilattico Sperimentale della Sardegna, Italy); Fiammetta Berlinguer (University of Sassari, Italy); Katuscia Zedda (Abinsula srl, Italy)
- 14:50 Impact of Cold Stress on Daily Milk Production in Italian Mediterranean Buffaloes**
Matteo Santinello, Maria Teresa Verde, Federica Pierro, Francesco Bonavolontà, Lorenzo Coppola, Pierluigi Guerriero, and Gianluca Neglia (University of Naples Federico II, Italy)

14:20 - 15:50

Room B - Le Benedettine Conference Center

Session B4 - Innovative Technologies for Parasite and Vector Control

Organizers: Lisa Guardone, Valentina Mangano (University of Pisa, Italy), Maria Paola Maurelli (University of Naples Federico II, Italy), and Fabrizia Veronesi (University of Perugia, Italy)

Chairs: Lisa Guardone, *University of Pisa, Italy*

Maria Paola Maurelli, *University of Naples Federico II, Italy*

- 14:20 Evaluation of Coccimorph Image-Based Software as a Complementary Tool for the Identification of Chicken *Eimeria* Species in Field Samples**
Marta Raffaelli and Valentina Meucci (University of Pisa, Italy); Alessia Zoroaster (University of Padova, Italy); José Jaramillo-Ortiz (Royal Veterinary College, United Kingdom); Antonio Frangipane Di Regalbono (University of Padova, Italy); Damer Blake (Royal Veterinary College, United Kingdom); Stefania Perrucci (University of Pisa, Italy)
- 14:40 Optimizing Current Approach to Control Cystic Echinococcosis Using Drone Technology and Geospatial Tools**
Nicola Lattero, Martina Nocerino, Paola Pepe, Antonio Bosco, Elena Ciccone, Maria Paola Maurelli, and Laura Rinaldi (University of Naples Federico II, Italy)

- 14:50 Open-Source Toolkit for in Vitro Diagnosis of Malaria Tailored for Low-Resource Settings**
Florinda Coro, Carmelo De Maria, Valentina Mangano, and Arti Ahluwalia (University of Pisa, Italy)
- 15:10 Integrating Engineering and Public Health to Monitor Waterborne Intestinal Pathogens: a One Health Approach**
Vincenzo Mignano, Antonino Pace, Paola Pepe, Federica Ceraso, Ludovico Di Pineto, Laura Rinaldi, and Massimiliano Fabbicino (University of Naples Federico II, Italy)
- 15:20 Innovative Technologies for Diagnosis of Intestinal Parasites in Animals and Humans**
Maria Paola Maurelli and Salvatore Capuozzo (University of Naples Federico II, Italy); Giuseppe Martone (Universitas Mercatorum, Italy); Paola Vitiello, Paola Pepe, Antonio Bosco, Mirella Santaniello, Michela Gravina and Stefano Marrone (University of Naples Federico II, Italy); Biase Celano (Officina Elettronica SPA, Italy); Carlo Sansone, Giuseppe Cringoli, and Laura Rinaldi (University of Naples, Federico II, Italy)
- 15:40 Risk Assessment of (Re)-Emerging Vector-Borne Diseases in Southern Europe Based on Machine Learning Processing of Poly-Observational Data**
Monica Falcinelli, Claudia Damiani, Alessia Cappelli, Irene Ricci,, and Guido Favia (University of Camerino, Italy)

14:20 - 15:20 *Room C - Le Benedettine Conference Center*
Session C4 - Precision Nutrition Technologies in Animal Husbandry: Advancements and Future Perspectives
Organizers: Damiano Cavallini and Giovanni Buonaiuto (University of Bologna, Italy)
Chairs: Damiano Cavallini, *University of Bologna, Italy*
Marco Bovo, *University of Bologna, Italy*

- 14:20 The Use of Ruminal Boluses to Detect Bouts in Beef Cattle**
Davide Martini and Silvia Magro (University of Padova, Italy); Angela Costa and Martina Lamanna (University of Bologna, Italy); Clotilde Villot, Eric Chevaux and Bruno Martin (Lallemand Animal Nutrition, France); Alberto Guerra (University of Padova, Italy); Matteo Santinello (University of Naples Federico II, Italy); Massimo De Marchi (University of Padua, Italy)
- 14:30 Heart Girth as a Predictor of Body Weight in Lactating Cows**
Silvia Magro, Alberto Guerra, Mauro Penasa, and Massimo De Marchi (University of Padova, Italy)
- 14:40 Using Solomon Coder for the Ethological and Feeding Behaviour Analysis of Dairy Cows in Tie-Stall Housing: a Practical Guide**

Martina Lamanna, Claudia Giannone, Marco Bovo, and Giacomo Bellisola (University of Bologna, Italy); Alberto Romanzin (University of Udine, Italy); Damiano Cavallini (University of Bologna, Italy)

14:50 Eating Time of Growing Simmental Bulls Evaluated with Different Approaches

Matteo Braidot and Anita Cabbia (University of Udine, Italy); Damiano Cavallini (University of Bologna, Italy); Mauro Spanghero and Alberto Romanzin (University of Udine, Italy)

15:00 Impact of Different Feeding Strategies on Carcass Characteristics, Meat Quality, and Organoleptic Properties of Meat from Old Sheep for Arrostiticini Production

Daria Zoe De Angelis, Luigi Pompei, Hassan Jalal and Paraskevyy Prasinou (University of Teramo, Italy); Mirella Bellocci, and Leopoldo Di Luca (Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale", Italy); Isa Fusaro (University of Teramo, Italy)

15:10 - 16:00 Auditorium - Le Benedettine Conference Center

Session A3 - Mass spectrometry as a cutting-edge tool in veterinary and animal science

Organizers: Valentina Meucci, Lucia De Marchi, Alessio Lenzi, and Denise Biagini (University of Pisa, Italy)

Chairs: Valentina Meucci, *University of Pisa, Italy*
Lucia De Marchi, *University of Pisa, Italy*

15:10 Liquid Chromatography-High Resolution Mass Spectrometry Analysis of Milk as a Non-Invasive Matrix for Assessing Dairy Cows' Exposure to Perfluoro-Alkyl Substances in Italy

Federica Di Cesare and Susanna Draghi (University of Milan, Italy); Pavlovic Radmila (IRCCS San Raffaele Scientific Institute, Italy); Giulio Curone, Petra Cagnardi (University of Milan, Italy); Alberto Pellegrini and Marco Fidani (UNIRELAB Srl, Italy); Francesco Arioli (University of Milan, Italy)

15:20 Advancing Veterinary Medicine with LC-MS/MS: Applications in Pharmacology, Toxicology, and Precision Diagnostics

Anisa Bardhi and Andrea Barbarossa (University of Bologna, Italy)

15:40 Salinity-Driven Alterations in Tetracycline Exposed *Mytilus Galloprovincialis*: a Metabolomics Perspective

Alessio Lenzi (University of Pisa, Italy); Marta Cunha, Constança Figueiredo, and Carla Leite (University of Aveiro, Portugal); Lucia De Marchi, Gianfranca Monni, and Valentina Meucci (University of Pisa, Italy); Tania Russo and Gianluca Polese (University of Naples Federico II, Italy); Amadeu Soares and Rosa Freitas (University of Aveiro, Portugal)

15:50 1H NMR for Comparative Metabolic Analysis of Whey and WPC-80

Ingrid Maria Sousa Gurgel do Amaral (University of Padova, Italy); Gaia Meoni and Leonardo Tenori (University of Florence, Italy); Marta Pozza, Massimo De Marchi, and Giovanni Niero (University of Padova, Italy)

15:20 - 16:00 *Room C - Le Benedettine Conference Center*
Session C5 - Measuring Microplastics (MPs) and Nanoplastics (NPs) in the Livestock Sector
Organizers: Sonia Tassone (University of Turin, Italy) and Valentina Balestra (Politecnico di Torino, Italy)
Chairs: Sonia Tassone, *University of Turin, Italy*
 Valentina Balestra, *Politecnico di Torino, Italy*

- 15:20 Development of Portable NIR Calibration Models for Micro-Plastic Detection and Quantification in Corn Silage**
 Federico Manganello and Pier Paolo Danieli (University of Tuscia, Italy); Abid Khalil and Salvatore Barbera (University of Turin, Italy); Rabeb Issaoui (University of Tunis El Manar, Tunisia); Hatsumi Kaihara and Sonia Tassone (University of Turin, Italy)
- 15:30 Microplastics Measurements in Cow Milk: Extraction and Characterization Methodologies**
Valentina Balestra, Monica Granetto, and Rossana Bellopede (Politecnico di Torino, Italy); Sonia Tassone (University of Turin, Italy)
- 15:50 Enhancing Microplastic Detection Directly in Feeds Using Ghost NIR Spectra**
Salvatore Barbera (University of Turin, Italy); Giorgio Masoero (Accademia di Agricoltura di Torino, Italy)

16:00 - 16:30 *Le Benedettine Conference Center*
COFFEE BREAK

16:30 - 18:00

Auditorium - Le Benedettine Conference Center

Women in Science Session

Organizers: Federica Pirrone (University of Milan, Italy) and Erika Pittella (Sapienza University of Rome, Italy)

Chair: Erika Pittella, *Sapienza University of Rome, Italy*



Perspectives on Women's Careers in Engineering and Veterinary Science: Challenges and Opportunities across Academia, Professional Practice, and Industry

16:30 Welcome

Erika Pittella, *Sapienza University of Rome, Italy*

Federica Pirrone, *University of Milan, Italy*

Paola Saccomandi, *Vice Chair, IEEE WIE Italy Section*

Mara di Noia, *DVM, Vice President, ADMV*

16:40 Shaping a career as a veterinarian: growth, change and new challenges in the private sector

Sara Nicolini, *Freelancer consultant, Italy*

16:55 From student to professor in veterinary medicine: a career experience of challenges and milestones in Italian academia

Federica Pirrone, *University of Milan, Italy*

17:10 Engineering the future of parasite control: women pioneering innovation in Veterinary Science

Martina Nocerino, *University of Naples Federico II, Italy*

17:25 Harnessing interdisciplinary collaborations to advance your career while pursuing future grant opportunities

Andrea Pacheco, *Politecnico di Milano, Italy*

17:40 Discussion and closing of the session

Technical Program

Wednesday, 30th April, 2025

08:00 - 12:00 *Le Benedettine Conference Center*
REGISTRATIONS

08:40 - 10:40 *Auditorium - Le Benedettine Conference Center*
ROUND TABLE
Organizers: Duccio Panzani (University of Pisa, Italy) and Carmelo De Maria, University of Pisa, Italy)
Chairs: Duccio Panzani, *University of Pisa, Italy*
Carmelo De Maria, *University of Pisa, Italy*

Patent Process: From Idea to Commercialization

From Genesis to Valorization of the Catcet Project: Results of an Effective Interdepartmental Collaboration

Duccio Panzani, *University of Pisa, Italy*
Carmelo De Maria, *University of Pisa, Italy*

An Office Serving Researchers for the Protection and Valorization of Innovations: Catcet, a Practical Case of Valorization

Serena Fortunato, *Technology Transfer Office, University of Pisa, Italy*

Strategies for Protecting and Economically Valorizing an Innovation

Barbara Politi, *Addi Srl, Livorno, Italy*

The Patent: Requirements, Drafting Techniques, and Filing Procedures in Italy

Lunati Valerio, *Lunati & Mazzoni, Milano, Italy*
Michele Frediani, *Lunati & Mazzoni, Lucca, Italy*

Protecting an Italian Patent Application Abroad: Procedures and Strategies

Marco Celestino, *Abm Pat, Pisa, Italy*

Questions and Discussion

10:40 - 11:10 *Le Benedettine Conference Center*
COFFEE BREAK

11:10 - 12:40

Auditorium - Le Benedettine Conference Center

Session A4 - Advanced Technologies and Measurement Tools for Clinical Diagnostic Procedures in Veterinary Medicine

Organizers: Caterina Puccinelli (University of Pisa, Italy), Irene Nocera (School of Advanced Studies Sant'Anna, Italy), Chiara Di Franco (University of Pisa and CNR, Italy), and Enrica Zucca (University of Milan, Italy)

Chairs: Irene Nocera, *School of Advanced Studies Sant'Anna, Italy*
Caterina Puccinelli, *University of Pisa, Italy*

11:10 Evaluation of Learning Curve for Point-of-Care Ultrasound Protocol in Equine Species: Preliminary Study

Dania Cingottini (University of Pisa, Italy); Irene Nocera (Scuola Suuperiore Sant'Anna, Italy); Benedetta Sorvillo and Giulia Sala (University of Pisa, Italy); Soren Boysen (University of Calgary, Canada); Francesca Bindi, Francesca Bonelli, and Micaela Sgorbini (University of Pisa, Italy)

11:20 Reliability of a Digital Stethoscope Associated with Phonocardiography for Cardiac Auscultation in Dogs

Lisa Alibrandi (Sant'Anna School of Advanced Studies, Italy & Veterinary Science, University of Pisa, Italy); Nicole Parrucci, Giovanni Grosso, Rosalba Tognetti, and Tommaso Vezzosi (University of Pisa, Italy)

11:30 Applicability of Two-Dimensional Shear Wave Elastography for Assessing Hepatic Stiffness in Dogs with Right-Sided Congestive Heart Failure

Caterina Puccinelli, Pelligra Tina, Tommaso Vezzosi, and Simonetta Citi (University of Pisa, Italy)

11:40 Smart Textile Biotechnology for ECG Monitoring in Minipigs: a Validation Study

Aurora Paganelli (Scuola Superiore Sant'Anna di Pisa, Italy); Emma Tognetti (University of Pisa, Italy); Martina Felici (University of Bologna, Italy); Antonio Lanata (University of Florence, Italy); Fabio Anastasio Recchia (National Research Council, Italy); Angelo Gazzano and Micaela Sgorbini (University of Pisa, Italy)

11:50 Electrocardiographic Recording and Sharing Using Digital Devices in Equids

Chiara Bozzola, Lorenzo Schinardi, and Enrica Zucca (University of Milano, Italy)

12:10 Pilot Study for the Feasibility of Deep Photoacoustic Imaging in Pig Bladder Throughout Developed Laser Catheter Consumable

Chiara Di Franco (CNR-Institute of Clinical Physiology, National Research Council, Pisa & University of Pisa, Italy); Paolo Armanetti (Institute of Clinical Physiology, Italian National Research Council, Italy); Cosimo Trono (Istituto di Fisica Applicata Nella Carrara CNR-IFAC, Italy); Jose Jithin (FUJIF ILM Visua ISo nics, Amsterdam, Belgium); Mauro Comes Franchini (University of Bologna, Italy); Massimo Alfano (Division of Experimental Oncology Unit of Urology Ospedale San Raffaele, Italy); Luca Menichetti (National Council of Research, Institute of Clinical Physiology, Pisa, Italy)

12:20 Computed Tomography (CT) Scan Measurements for the Assessment of the Appropriate Tidal Volume to Apply in Mechanically Ventilated Rabbits Under General Anesthesia

Luca Pennasilico (University of Camerino, Italy); Elisa Silvia D'urso (Mindray company, Italy); Paolo Selleri (Centro Veterinario Specialistico, Italy); Caterina Di Bella (University of Camerino, Italy)

12:30 Validation of a Novel Technological Device for Vital Functions Monitoring in Hospitalized Dogs

Beatrice Mercaldo, Maria Chiara Alterisio, Antonio Di Loria, Jacopo Guccione, Camilla Sangiuliano, Fabiana Miceli, Sergio Esposito, and Paolo Ciaramella (University of Naples Federico II, Italy)

11:10 - 12:40

Room B - Le Benedettine Conference Center

Session B5 - The importance of Measurements and Indices in Cyto and Histopathology of Tissues from Companion and Farmed Animals

Organizers: Martina Quagliardi, Livio Galosi, Alessandra Gavazza, and Giacomo Rossi (University of Camerino, Italy)

Chairs: Martina Quagliardi, *University of Camerino, Italy*
Livio Galosi, *University of Camerino, Italy*

11:10 Assessing the Health of Farmed Rainbow Trout (*Oncorhynchus Mykiss*): Use of an Open-Source Software for Intestine Histology

Martina Quagliardi, Livio Galosi, Francesca Mariotti, Alessandra Roncarati, and Gian Enrico Magi (University of Camerino, Italy)

11:30 Measurement of Intestinal Morphology, Growth Rate, and Immunity Response in Nile Tilapia (*Oreochromis Niloticus*) Fed with Slab51 Probiotic Mixture

Danilo De Bellis, Lucia Biagini, and Sara Berardi (University of Camerino, Italy); Mateo Espejo Valencia and Gilberto Gonzalez Aguirre (Universidad Tecnologica de Pereira, Colombia); Giacomo Rossi (University of Camerino, Italy)

11:40 Reference Intervals and Innovative Parameters Using Sysmex XN-2000V in Horses
Chiara Masci (University of Camerino, Italy); Caterina Fani (CDVet, Italy); Martina Quagliardi, Giacomo Rossi, and Alessandra Gavazza (University of Camerino, Italy)

12:00 Morphometric and Histopathological Evaluation of Chickens' Immune Organs Following in-Ovo Probiotic and Postbiotic Administration

Lucia Biagini, Livio Galosi, Danilo De Bellis, Valentina Grifantini, Subeide Mari, and Giacomo Rossi (University of Camerino, Italy)

12:10 A New Approach to Evaluate Veterinary Histopathological Tissue Sample with Image and Ultrasound Data

Giacomo Rossi (University of Camerino, Italy); Marton Csaba Mezei, Ilaria Benedetti and Fabrizia Auletta, and Calogero Maria Oddo (Scuola Superiore Sant'Anna, Italy); Alessandra Gavazza (University of Camerino, Italy)

12:30 Digital Immunohistochemical Quantification of Neu5Gc Expression in Canine Intestinal Biopsies and Its Correlation with Colitis Severity

Maria Chiara Muollo, Lucia Biagini, Daniele Tomassoni, Vincenzo Bellitto, Danilo De Bellis, and Giacomo Rossi (University of Camerino, Italy)

11:10 - 12:10

Room C - Le Benedettine Conference Center

Session C6 - Application of Measurement Concepts in Veterinary Microbiology and Infectious Diseases

Organizers: Valentina Stefanetti and Elisa Rampacci (University of Perugia, Italy)

Chairs: Valentina Stefanetti, *University of Perugia, Italy*
Elisa Rampacci, *University of Perugia, Italy*

11:10 Prevalence and Antimicrobial Resistance Profiles of Bacteria Recovered from Wounds of Stray Dogs and Cats Before and After Washing with Sterile Physiological Solution

Francesca Paola Nocera, Sinem Arslan, Rossana Schena, and Francesca Pizzano (University of Naples Federico II, Italy); Cristina Di Palma (Azienda Sanitaria Locale Napoli 3 Sud, Italy); Silvia Capiello and Marina Pompameo (Veterinary Hospital, ASL Napoli 1 Centro, Italy); Barbara Lamagna, and Luisa De Martino (University of Naples Federico II, Italy)

11:20 Methodological Framework to Study the Antibiotic Resistance Evolvability of Pathogenic Staphylococcal Species

Elisa Rampacci, Tommaso Felicetti, Francesco Biretoni, Rolando Arcelli, Riccardo Zelli, Stefano Sabatini, and Fabrizio Passamonti (University of Perugia, Italy)

11:30 Challenges in Measuring the Antimicrobial Activity of Natural Compounds in in Vitro Tests

Valentina Stefanetti, Elisa Rampacci, Patrizia Casagrande Proietti, David Ranucci, and Fabrizio Passamonti (University of Perugia, Italy)

11:40 Proposal of a Risk-Based Approach for Defining the Calibration Frequency of Remote Temperature Sensors in Use at the Laboratories of Istituto Zooprofilattico Sperimentale Delle Venezie (IZSve)

Silvia Benato, Laura Trevisan, Riccardo Muliari, Paola Carnieletto, Lavinia Guerra, and Laura Zanollo (Istituto Zooprofilattico Sperimentale delle Venezie, Italy)

12:00 Development of an Autogenous Dip Vaccine Against Furunculosis (*Aeromonas Salmonicida*) as Tool for Animal Precision Medicine and Management: Preliminary Data

Giulio Severi, Martina Pellegrini, Giulia Vita, Chiara Ovidi, Silvia Cardaioli, Massimo Bugatti, and Monica Cagiola (IZSUM, Italy); Ciro Castellano (Eredi Silvio Rossi, Italy); Antonella Di Paolo (Istituto Zooprofilattico sperimentale dell'Umbria e delle Marche Togo Rosati, Italy); Laura Boriani, Eleonora Radicchi, Rosario Liberti, Lucia Anzalone, Martina Torricelli, and Francesco Agnetti (IZSUM, Italy)

12:10 - 12:50 *Room C - Le Benedettine Conference Center*
Session C7 - Radio Frequency Technologies for Animal Identification and Tracking
Organizers: Alice Buffi (University of Pisa, Italy) and Luca Catarinucci (University of Salento, Italy)
Chairs: Alice Buffi, *University of Pisa, Italy*
Gianluca Caposciutti, *University of Pisa, Italy*

12:10 RFID-Enabled Smart Livestock Management Systems
Debi Dutta, Marcello Mele, and Filippo Costa (University of Pisa, Italy)

12:20 Battery-Less Implantable Wireless Sensor for Proactive Fever Monitoring in Livestock
Nicoletta Panunzio (University of Rome Tor Vergata, Italy); Carolina Miozzi (University of Rome "Tor Vergata", Italy & Radio6ense Srl, Italy); Gaetano Marrocco (University of Rome Tor Vergata, Italy)

12:40 UHF-RFID Localization for Sheep Monitoring in Milking Parlour
Alice Buffi, Luca Turini, Gianluca Caposciutti, Mirko Marracci, Bernardo Tellini, and Marcello Mele (University of Pisa, Italy)

12:50 - 13:20 *Auditorium - Le Benedettine Conference Center*
CLOSING AND AWARD CEREMONY
Chairs: Francesco Di Iacovo, *University of Pisa, Italy*
Bernardo Tellini, *University of Pisa, Italy*

