Monday, 29 August

12:00   **Registration / Conference Office**
Banquet Hall

18:00   **Welcome Reception**
Lecture Hall and University Campus

Tuesday, 30 August

07:00   **Registration / Conference Office**
Banquet Hall

07:00   **Untitled Event**
Lecture Hall A

09:00   **Opening ECPLF**
Lecture Hall A

09:00   **Poster Session**
Banquet Hall

09:30   **Keynote Lecture**
Lecture Hall A

ONE HEALTH - From farm to fork
» Dr. Ulrich Herzog

10:15   **Keynote Lecture**
Lecture Hall A

Digital tools and AI in veterinary training and practice
» Prof. Dr. Pierre Lekeux

11:00   **Coffee and Tea Break**
Lecture Hall and University Campus

11:30   **(1) Cows: Behavior I**
Lecture Hall A

11:30   **Automatic classification of dairy cow activity using eartag-housed accelerometers – comparison of strategies**
» Dr. Dan Jensen, <u>Dr. Leonardo Victor de Knegt</u>, Dr. Min Jin, Mr. Jeff Hindsborg, Prof. Anders Ringgaard Kristensen

11:45   **Validation and comparison of different sensor technologies to classify behaviour of dairy cows on pasture**
» <u>Mrs. Barbara Pichlbauer</u>, Mr. Jose Chapa, Mr. Martin Bobal, Mr. Christian Guse, Dr. Michael Iwersen, Prof. Marc Drillich

12:00   **Validation of proximity sensors to monitor social proximity in dairy cows: a pilot study**
» <u>Dr. Lorenzo Leso</u>, Dr. Laura Ozella, Dr. Valentina Becciolini, Mr. Stefano Camiciottoli, Prof. Matteo Barbari

12:15   **Preliminary outcomes of cow behavioural activity classification by convolutional neural networks**
» <u>Ms. Giulia Castagnolo</u>, Ms. Dominga Mancuso, Prof. Simone Palazzo, Prof. Concetto Spampinato, Prof. Simona Porto

12:30   **Prototype design of an integrated system to monitor dairy cow welfare**
» <u>Dr. Lisette Leliveld</u>, Dr. Elisabetta Riva, Dr. Giorgio Provolo

	Continued from **Tuesday, 30 August**

12:45 — **Effect of separation at weaning on the activity of cows and calves reared in a cow-calf contact system measured with accelerometer sensors.**

» Ms. Sarah McPherson, <u>Dr. Lucile Riaboff</u>, Mr. Oshana Dissanayake, Ms. Alison Sinnott, Prof. Padraig Cunningham, Dr. Emer Kennedy

11:30 — **(2) Pigs: Computer Vision in Piglets**
Lecture Hall B

11:30 — **Dense tracking of pig behavioral features before tail biting**

» <u>Dr. Peter Wißkirchen</u>, Dr. Friederike Warns, Dr. Katharina Dahlhoff, Mr. Jad Maalouly, Mrs. Gina-Marie Vollert, Prof. Harald Mathis, Dr. Astrid van Asten

11:45 — **Parameter testing and systematic performance assessment of machine-learning models for video-based classification of damaging social behaviour in groups of pigs**

» <u>Dr. Franziska Hakansson</u>, Dr. Dan Jensen

12:00 — **First step to remote detection of locomotor play in young pigs: a preliminary study**

» <u>Dr. Mona Lilian Vestbjerg Larsen</u>, Ms. Meiqing Wang, Mr. Sam Willems, Dr. Dong Liu, Prof. Tomas Norton

12:15 — **Evaluating piglet activity after different vaccination protocols using automated cameras and drink water monitoring**

» <u>Mr. Rutger Jansen</u>, Mr. Martijn Steenaert, Mr. Herman Pruest, Mr. Daniel Guiñón, Dr. Carmen Alonso

12:30 — **Automated detection and analysis of piglet suckling behaviour using high-accuracy amodal instance segmentation**

» <u>Dr. Haiming Gan</u>, Mr. Mingqiang Ou, Ms. Cheryl Sze, Ms. Axiu Mao, Dr. Kai Liu, Prof. Yueju XUE

12:45 — **An approach towards a practicable assessment of piglet vitality using automatic object recognition based on thermal images**

» <u>Mr. Steffen Küster</u>, Mr. Lion Haverkamp, Prof. Martin Schlather, Prof. Imke Traulsen

11:30 — **(3) Poultry: Health and Production**
Lecture Hall D

11:30 — **Effect of elevated carbon dioxide on chicken eggs during the early and late incubation periods**

» <u>Mr. Chang Liu</u>, Prof. Weichao Zheng, Ms. Lirong Zhu, Prof. Qin Tong, Ms. Du Li

11:45 — **Development of an autonomous roving data collection platform for caged poultry production**

» <u>Dr. Theo Demmers</u>, Prof. Qin Tong, Mr. Philip Norman

12:00 — **Can AI imaging technology be used for monitoring specific behaviours in broiler flocks**

» <u>Dr. Theo Demmers</u>, Mrs. Samanta Green, Dr. Alberto Rizzoli

12:15 — **A machine learning-based location method for poultry in complex and small environments**

» <u>Dr. Hao Xue</u>, Prof. Lihua Li, Dr. Peng Wen, Ms. Meng Zhang

12:30 — **Towards an automated camera-based monitoring system for poultry red mite outbreaks**

» <u>Mr. Sam Willems</u>, Dr. Mina Mounir, Dr. Dong Liu, Mr. Tom Van Hertem, Dr. Hanne Nijs, Ms. Pauline Créach, Dr. Nathalie Sleeckx, Prof. Erik Vranken, Prof. Tomas Norton

12:45 — **Obtaining broiler chickens' weight through depth image**

» <u>Ms. Luana Benicio</u>, Dr. Késia Oliveira da Silva Miranda, Prof. Tami Brown-Brandl, Dr. Isabella Condotta, Dr. Yijie Xiong

11:30 — **(4) Education**
Lecture Hall M

Continued from **Tuesday, 30 August**	

11:30   **A survey among students about perception of sensor technologies on dairy farms**

» Ms. Karina Weimar, Prof. Wolf Heuwieser, Dr. Michael Iwersen, Prof. Marc Drillich

11:45   **Teaching PLF through "Serious Escape Games" based on 3D-imaging, accelerometer approaches and R programming**

» Mr. Adrien Lebreton, Mr. Clément Allain, Mr. Maxime Dumesny, Ms. Estelle Leroux, Ms. Anaëlle Bouqueau, Dr. Marie-Pierre Etienne, Dr. Christine Largouët, Dr. Charlotte Gaillard, Dr. Ludovic Brossard, Prof. Yannick Le Cozler, Dr. amelie fischer

12:00   **Trends among young and educated dairy sheep farmers in Italy regarding PLF use and farm modernization**

» Mr. Michael Odintasov vaintrub, Dr. Matteo Chincarini, Dr. Isa Fusaro, Dr. Melania Giammarco, Prof. Giorgio Vignola

12:15   **Preliminary work for the development of an educational web platform for 3-pillar sustainability assessment in European dairy cattle production systems**

» Mr. Evangelos Alexandropoulos, Dr. Vasileios Anestis, Mr. Vincent Baillet, Dr. Lorraine Balaine, Mr. Xabier Díaz de Otálora, Dr. Aurélie Wilfart, Dr. Federico Dragoni, Dr. Dominika Krol, Prof. Thomas Bartzanas, Prof. Barbara Amon

12:30   **Educating for Precision Livestock Farming: The knowledge, skills and abilities to meet future industry and societal needs**

» Prof. Tomas Norton, Prof. Tami Brown-Brandl, Prof. Panagiotis Panagakis, Prof. Vasco Fitas da Cruz, Dr. Heidi Diefes-Dux, Prof. Salva Calvet

12:45   **Teaching anatomy in precision livestock farming educational programs**

» Prof. Anastasia Tsingotjidou

13:00   **Lunch Break**
Lecture Hall and University Campus

14:00   **(5) Cows: Feed Intake**
Lecture Hall A

14:00   **Real-time classification of cattle behaviour using accelerometer sensors**

» Mr. Said Benaissa, Mr. Tim Van De Gucht, Dr. Leen Vandaele, Dr. Nico Peiren, Dr. Mirjan Thys, Prof. David Plets, Prof. Wout Joseph, Prof. Frank Tuyttens, Prof. Bart Sonck

14:15   **Grazing behaviour of cows can be predicted from accelerometer data using LoRaWAN to track activity in real time on commercial dairy farms**

» Dr. Tom Chamberlain, Mr. Skiv Kodam, Dr. Mike Wilkinson, Dr. M Jordana Rivero, Dr. Andrew Mead

14:30   **Development and evaluation of an autonomous and automatic monitoring system for grazing cattle**

» Mrs. Justine Plum, Dr. Isabelle Dufrasne, Prof. Bruno Quoitin, Prof. Said Mahmoudi, Prof. Frederic Lebeau

14:45   **Evaluation of bunk cameras to characterize individual feeding behavior in conventional pens**

» Ms. Meredith Harrison, Ms. Polina Demochkina, Dr. James Oltjen

15:00   **A prototype imaging method for feed estimation in beef cattle**

» Dr. Yijie Xiong, Dr. Eric Psota, Prof. Tami Brown-Brandl, Dr. Benny Mote, Dr. Ty Schmidt, Prof. Galen Erickson

14:00   **(6) Pigs: Computer Vision and Vibration Sensors in Sows**
Lecture Hall B

14:00   **Sow posture and feeding activity monitoring in a farrowing pen using ground vibration**

» Mr. Jesse R Codling, Ms. Yiwen Dong, Ms. Amelie Bonde, Ms. Adeola Bannis, Ms. Asya Macon, Dr. Gary Rohrer, Mr. Jeremy Miles, Dr. Sudhendu Sharma, Prof. Tami Brown-Brandl, Dr. Hae Young Noh, Dr. Pei Zhang

	Continued from **Tuesday, 30 August**

14:15 — **Computer vision for monitoring hay rack use behavior in sows**
» Dr. Maciej Oczak, Mr. Florian Bayer, Dr. Kristina Maschat, Dr. Johannes Baumgartner

14:30 — **Monitoring sow postures, feeding and nursing activity using the combination of deep learning and image segmentation methods**
» Mr. Bernard BENET, Dr. Laurianne CANARIO, Mr. Jean-François BOMPA, Dr. Edmond RICARD, Mr. Jean BAILLY, Dr. Mathieu Bonneau

14:45 — **Posture detection of sows housed in farrowing crates using composite image models**
» Ms. Veronica Pacheco, Prof. Tami Brown-Brandl, Dr. Sudhendu Sharma, Prof. Rafael Vieira de Sousa, Dr. Gary Rohrer, Prof. Luciane Martello

15:00 — **Occlusion-resistant spatial analysis of pig distribution pattern in farrowing pens using center clustering network**
» Mr. Endai Huang, Ms. Axiu Mao, Dr. Haiming Gan, Dr. Kai Liu

15:15 — **Lameness detection in sows using few-shot approach**
» Dr. Sudhendu Sharma, Prof. Tami Brown-Brandl, Dr. Gary Rohrer, Dr. Lea Rempel, Ms. Lexi Ostrand, Dr. Benny Mote

14:00 — **(7) Poultry: Climate and Environment**
Lecture Hall D

14:00 — **Heat stress analysis of chickens in a mechanically ventilated broiler house using simulation**
» Ms. Jeonghwa Cho, Prof. In-Bok Lee, Mr. Uk-hyeon Yeo, Mr. Sang-yeon Lee, Mr. Sejun Park, Mr. Jun Gyu Kim, Ms. Cristina Decano, Mr. Young-Bae Choi, Mr. Hyo-hyeog Jeong, Mr. Sol-moe Kang, Mr. Minhyung Lee, Ms. Da-In Kim

14:15 — **A dynamic model to precisely predict indoor air temperature and relatively humidity in laying hen houses**
» Ms. Yu Liu, Prof. Chao Liang, Ms. Huanhuan Yin, Prof. Baoming Li, Prof. Chaoyuan Wang

14:30 — **Application of RNN model for predicting internal environments of poultry houses**
» Mr. Sang-yeon Lee, Mr. Uk-hyeon Yeo, Mr. Sejun Park, Mr. Jun Gyu Kim, Ms. Cristina Decano, Mr. Young-Bae Choi, Ms. Jeonghwa Cho, Mr. Hyo-hyeog Jeong, Mr. Sol-moe Kang, Prof. In-Bok Lee, Mr. Minhyung Lee, Ms. Da-In Kim

14:00 — **(8) Over the Fence: Use of PLF in other Species**
Lecture Hall M

14:00 — **Uniting farms: Federated learning for sensor-based animal activity recognition**
» Ms. AXIU MAO, Mr. Endai Huang, Dr. Haiming Gan, Dr. Kai Liu

14:15 — **Applications of hyperspectral imaging for documenting smoltification and welfare in Atlantic salmon**
» Mr. Stein-Kato Lindberg, Dr. Gareth Difford, Dr. Evan Durland, Dr. Karsten Heia, Mr. René Alvestad, Dr. Eric Burgerhout, Dr. Vasco C. Mota, Dr. Anja Striberny, Mr. Gerhardus C. Verstege, Dr. Chris Noble

14:30 — **Preliminary research on pain detection in horses: video based automated classification of the behaviour time budget**
» Mr. Albert Martin Cirera, Dr. Ülrike Auer, Prof. Tomas Norton, Dr. Maciej Oczak

15:30 — **Coffee and Tea Break**
Lecture Hall and University Campus

16:00 — **(9) Cows: Health and Production**
Lecture Hall A

16:00 — **Data-driven dairy herd management: An analysis of sensor-assisted health monitoring**
» Ms. Johanna Pfeiffer, Dr. Markus Gandorfer

	Continued from **Tuesday, 30 August**

16:15 — **Association between rumination patterns detected by an ear-tag based accelerometer system and rumen physiology in dairy cows**

» Ms. Anne Simoni, Mr. Felix König, Ms. Karina Weimar, Dr. Andrew Hancock, Dr. Christian Wunderlich, Dr. Marcus Klawitter, Dr. Thomas Breuer, Prof. Marc Drillich, Dr. Michael Iwersen

16:30 — **Association of activity and time spent ruminating with subclinical and clinical ketosis in early lactation dairy cows**

» Dr. Katharina Schodl, Dr. Birgit Fuerst-Waltl, Dr. Hermann Schwarzenbacher, Mr. Franz Steininger, Ms. Marlene Suntinger, Mx. D4Dairy Consortium, Dr. Christa Egger-Danner

16:45 — **Sensor-based detection of teat end hyperkeratosis with the help of the dielectric constant**

» Dr. Susanne Demba, Dr. Gundula Hoffmann, Dr. Christian Ammon, Prof. Sandra Rose

17:00 — **Systematic evaluation of different fresh cow monitoring procedures**

» Mr. Felix König, Dr. Andrew Hancock, Dr. Christian Wunderlich, Dr. Marcus Klawitter, Dr. Thomas Breuer, Ms. Anne Simoni, Ms. Karina Weimar, Prof. Marc Drillich, Dr. Michael Iwersen

16:00 **(10) Pigs: Computer vision in Gilts, Weaners and Growers**
Lecture Hall B

16:00 — **Automatic extraction of gilt gait pattern using computer vision technologies**

» Dr. Dong Liu, Prof. Robert Fitzgerald, Prof. Eric Psota, Prof. Tomas Norton

16:15 — **Automatic phenotyping of activity traits utilizing NUtrack to enhance gilt selection**

» Ms. Lexi Ostrand, Dr. Melanie Trenhaile-Grannemann, Dr. Eric Psota, Dr. Gary Rohrer, Dr. Ty Schmidt, Dr. Benny Mote

16:30 — **Utilizing imaging methodologies to classify sow characteristics for optimized selection**

» Dr. Melanie Trenhaile-Grannemann, Dr. Yijie Xiong, Dr. Weizhen Liang, Prof. Tami Brown-Brandl, Dr. Kenneth Stalder, Dr. Benny Mote, Mr. Dalton Obermeier, Ms. Savannah Millburn

16:45 — **Investigation and application of tracking algorithm on behaviour analysis for weaners housed in two-climate pens**

» Ms. Meiqing Wang, Dr. Mona Lilian Vestbjerg Larsen, Dr. Dong Liu, Prof. Tomas Norton

17:00 — **Potential of depth images to monitor feeder access in growing pigs: a methodological study**

» Dr. Mona Lilian Vestbjerg Larsen, Prof. Tomas Norton

16:00 **(11) General: Sustainability and Environement**
Lecture Hall D

16:00 — **Why Precision Livestock Farming will generate a more sustainable livestock sector**

» Prof. Daniel Berckmans

16:15 — **Using LCA to estimate the potential reduction of the environmental impact by PLF technology**

» Dr. Daniela Lovarelli, Dr. jacopo bacenetti, Prof. Daniel Berckmans, Prof. Marcella Guarino

16:30 — **A UAV-based system for greenhouse gases and particulate measurement in livestock farms**

» Dr. Valentina Becciolini, Prof. Leonardo Conti, Dr. Giuseppe Rossi, Dr. Marco Merlini, Dr. Garbriele Coletti, Dr. Ugo Rossi, Prof. Matteo Barbari

16:45 — **Physically grounded causal modelling for PLF**

» Dr. Nick Hockings, Dr. Michael Iwersen, Dr. Andrew Hancock, Dr. Maciej Oczak

16:00 **(12) Consortia Presentations**
Lecture Hall M

Continued from **Tuesday, 30 August**

16:00 — **DiLaAg - Digitalisation and Innovation Laboratory in Agricultural sciences**
» Mrs. Barbara Pichlbauer, Mr. Jose Chapa, Mr. Florian Kitzler, Mr. Lukas Koppensteiner, Mrs. Theresa Krexner, Mr. Kevin Mallinger, Mr. Francisco Javier Medel Jimenez, Mr. Vladimir Pejakovic, Mr. Warren Purcell, Dr. Alexander Bauer, Dr. Michael Iwersen, Dr. Frederike Korth, Mrs. Iris Kral, Mrs. Viktoria Motsch, Dr. Thomas Neubauer, Prof. Reinhard Neugschwandtner, Prof. Marc Drillich, Prof. Hans-Peter Kaul, Prof. Andreas Rauber, Prof. A Min Tjoa, Prof. Andreas Gronauer

16:15 — **SESAM sensor technology for milk producers**
» Dr. Zlatan Vassilev, Dr. Laura-Monica Dale, Mr. Klaus Drössler, Mr. Andreas Werner, Ms. Morgane Hoenen, Dr. Thorsten Hehn, Mr. Tobias Peikenkamp, Mr. Jürgen Bieger

16:30 — **D4Dairy – Interdisciplinary network for creating added value out of different data sources**
» Dr. Christa Egger-Danner, Dr. Kristina Linke, Dr. Birgit Fuerst-Waltl, Prof. Peter Klimek, Prof. Olga Saukh, Prof. Thomas Wittek, Mx. D4Dairy Consortium

16:45 — **iDDEN**
» Dr. Florian Grandl

17:00 — **Precision Animal Health: A new Master's Porgramme offered by Vetmeduni Vienna**
» Prof. Marc Drillich, Prof. Stephan Winkler, Prof. Peter M. Roth

17:30 — **Industry Session**

18:30 — **ECPLF & PDC Welcome Reception**
Lecture Hall and University Campus

Wednesday, 31 August

07:00 — **Conference Office**
Banquet Hall

09:00 — **Opening PDC**
Lecture Hall A

09:00 — **Poster Session**
Banquet Hall

09:30 — **Keynote Lecture**
Lecture Hall A

09:30 — **Precision Livestock Farming: From where we come, to where we go?**
» Prof. Daniel Berckmans

10:15 — **Keynote Lecture**
Lecture Hall A

10:15 — **Precision Livestock Farming for continuous infection monitoring in livestock.**
» Prof. Joerg Hartung, Prof. Daniel Berckmans

11:00 — **Coffee and Tea Break**
Lecture Hall and University Campus

11:30 — **(13) Cows: Health and Production II**
Lecture Hall A

Continued from Wednesday, 31 August

11:30 **My sensor beeped: the economic and animal welfare gains**
» Mr. Francis Edwardes, Dr. Mariska van-der-Voort, Prof. Henk Hogeveen

11:45 **Estimating dairy cow rumen fill: 3D vision versus manual scoring**
» Dr. Xiangyu Song, Mr. Stein van Adrichem, Dr. Rik van der Tol

12:00 **Forecasting chronic mastitis using milking machine data on using online somatic cell counts and random forest classification**
» Mr. John Bonestroo, Dr. Ilka Klaas, Dr. Mariska van-der-Voort, Prof. Nils Erik Fall, Prof. Henk Hogeveen, Prof. Ulf Emanuelson

12:15 **Early detection of abnormal weight patterns in dairy cows based on AMS weighing data**
» Ms. Katarina Nielsen Dominiak, Mrs. Anne Mette Kjeldsen, Mx. Trine Andersen, Dr. Dan Jensen

12:30 **Automatic lameness scoring: Comparing absolute to relative scoring**
» Dr. John Gardenier, Dr. James Underwood, Prof. Cameron Clark

12:45 **Automated gait analysis with a deep learning key point detection model**
» Mrs. Marjaneh Taghavi, Ms. Helena Russello, Mr. Wijbrand Ouweltjes, Dr. Claudia Kamphuis

11:30 **(14) Pigs: Sound, Computer Vision and Automated Weighing in Finishers**
Lecture Hall B

11:30 **Environmental risk factors influence the frequency of coughing episodes in finisher pigs: a case-study on a farm free of respiratory disease**
» Ms. Joana Pessoa, Prof. Tomas Norton, Dr. Conor McAloon, Dr. Edgar Garcia Manzanilla, Dr. Laura Boyle

11:45 **The impact of respiratory health status on production losses in commercial pig farms**
» Prof. Erik Vranken, Dr. Wim Buyens, Mr. Arne Ghysen, Dr. Dries Berckmans

12:00 **Assessment of the economic value of early intervention triggered by an audio-based technology (SoundTalks) following experimental seeder pig dual-challenge in a large research barn**
» Dr. Dale Polson, Dr. Carmen Alonso

12:15 **Are image analysis based weight prediction systems precise enough for on-farm applications?**
» Prof. Thomas Banhazi

12:30 **Validation of body weight monitoring by a 3D camera in finisher pigs**
» Dr. Guilherme Amorim-Franchi, Ms. Jacinta Bus, Dr. Iris Boumans, Dr. Laura Webb, Dr. Eddie Bokkers, Prof. Margit Bak Jensen, Prof. Lene Juul Pedersen

12:45 **Individual management of health in weaned piglets using precision livestock farming technology**
» Dr. Christina Gruber, Ms. Ermioni Papadopoulou, Mr. Lukas Moser, Mr. Franz Waxenecker, Dr. Silvia Wein

11:30 **(15) General: Adoption and Barriers of PLF**
Lecture Hall D

11:30 **Understanding the influence of stakeholder participation on the adoption of digital livestock technologies**
» Ms. Juliette Schillings, Ms. David Rose, Prof. Richard Bennett

11:45 **Digital technology adoption on Canadian beef feedlot farms**
» Mr. Ayoola Makinde, Mr. Muhammad Muhaiminul Islam, Dr. Katharine M. Wood, Ms. Emily Conlin, Ms. Melissa Williams, Dr. Stacey D. Scott

Continued from **Wednesday, 31 August**

12:00 **Factors associated with the adoption of different clusters of Precision Livestock Farming technologies in pasture-based dairy systems**
» Mrs. Paula Palma Molina, Dr. Laurence Shalloo, Dr. Aisling O'Connor, Dr. Thia Hennessy, Dr. Stephen Onakuse, Dr. Niall O'Leary, Mr. Brian Moran

12:15 **Cooperative Livestock Farming: a chance for a breakthrough for PLF?**
» Dr. Christian Manteuffel

12:30 **Dairy farmers' involvement in precision farming research**
» Mr. Ron van Burgsteden, Dr. Mariska van-der-Voort, Dr. Yvette de Haas

11:30 **(16) Cows: Tracking**
Lecture Hall M

11:30 **Are GPS sensors and density-based classification suitable to ensure the traceability of dairy cows on pastures? Part I: Development and validation on experimental farms**
» Mr. Adrien Lebreton, Mr. Clément Allain, Mrs. Coralie Charpentier, Ms. Marie D'Introno, Dr. amelie fischer, Mrs. Wendy Lonis, Ms. Estelle NICOLAS, Mrs. Aurore Philibert

11:45 **OpenCattleHub: A portable reference system for indoor tracking in livestock farming**
» Ms. Christiane Engels, Mr. Marten Wegener, Mr. Heiko Neeland, Mr. Martin Wagner, Prof. Wolfgang Büscher

12:00 **Is it possible to identify individual animal faces with state of the art computer vision algorithms?**
» Mr. Andrea Parmiggiani, Dr. Dong Liu, Prof. Tomas Norton

12:15 **Cow identification network trained with similarity learning**
» Mr. Alexander Ulrichsen, Mr. Brian Lee, Dr. Paul Murray, Prof. Stephen Marshall, Prof. Mark Rutter

12:30 **Computer vision system for 3D localization of cows with deep learning**
» Mr. Tahir Bicakci, Dr. Fatih Gulec, Dr. Halit Kanca, Prof. Ahmet Can

12:45 **A computer vision approach for the automatic detection of social interactions and space-usage of dairy cows**
» Dr. Laura Ozella, Dr. Simone Vernengo, Prof. Marco Grangetto, Dr. Elisabetta Stipa, Dr. Karina Brotto Rebuli, Dr. Gianluca Montrucchio, Prof. Mario Giacobini

13:00 **Lunch Break**
Lecture Hall and University Campus

14:00 **(17) Cows: Heat Stress**
Lecture Hall A

14:00 **2 years' experience in climate monitoring in dairy farms**
» Dr. Heiner Denzer

14:15 **Heat load THI thresholds based on physiological parameters of lactating dairy cows**
» Dr. Severino Pinto, Dr. Gundula Hoffmann, Dr. Christian Ammon, Ms. Theresa Müschner-Siemens, Dr. Julia Heinicke, Prof. Thomas Amon

14:30 **Application of a respiration rate sensor in dairy cows to detect heat stress**
» Dr. Gundula Hoffmann, Dr. Julia Heinicke, Dr. Christian Ammon, Ms. Saskia Strutzke, Dr. Severino Pinto, Prof. Thomas Amon

14:45 **Preliminary studies to develop a novel, cow-centred index to monitor heat stress in dairy cows**
» Dr. Tom Chamberlain, Dr. Noud Aldenhoven, Dr. Christopher Powell

15:00 **Thermodynamic prediction of heat stress in dairy cattle**
» Dr. Sepehr Foroushani, Prof. Thomas Amon

15:15 **A machine learning approach for the assessment of heat stress in dairy cows**

» Dr. Marco Bovo, Dr. Miki Agrusti, Prof. Stefano Benni, Dr. Mattia Ceccarelli, Dr. Alberto Barbaresi, Prof. Daniele Torreggiani, Prof. Patrizia Tassinari

14:00 **(18) Pigs: Water, Climate and Emissions**
Lecture Hall B

14:00 **Zone-level and pen-level comparison of ambient temperature and water usage spatial variation and temporal trends throughout airspaces in a large swine research barn using a full array of pen-based water-temperature sensors**

» Dr. Dale Polson

14:15 **Predicting diarrhoea events and event levels in finisher pigs with sensor data on water usage**

» Dr. Mariska van-der-Voort, Dr. Dan Jensen

14:30 **Development and evaluation of air recirculated ventilation system for piglet house to block livestock diseases, increase energy efficiency, and improve internal environment**

» Mr. Jun Gyu Kim, Prof. In-Bok Lee, Mr. Uk-hyeon Yeo, Mr. Sang-yeon Lee, Mr. Sejun Park, Ms. Cristina Decano, Mr. Young-Bae Choi, Ms. Jeonghwa Cho, Mr. Hyo-hyeog Jeong, Mr. Sol-moe Kang, Ms. Da-In Kim, Mr. Minhyung Lee, Dr. Se-Han Kim, Dr. Seng-Kyoun Jo

14:45 **A study on the estimation of ammonia emissions considering factors influencing ammonia volatilization**

» Mr. Hyo-hyeog Jeong, Prof. In-Bok Lee, Mr. Uk-hyeon Yeo, Mr. Sang-yeon Lee, Mr. Sejun Park, Mr. Jun Gyu Kim, Ms. Cristina Decano, Mr. Young-Bae Choi, Ms. Jeonghwa Cho, Mr. Sol-moe Kang, Mr. Minhyung Lee, Ms. Da-In Kim

15:00 **Computational fluid dynamics simulation for odour dispersion prediction for Korean pighouse**

» Ms. Cristina Decano, Prof. In-Bok Lee, Mr. Uk-hyeon Yeo, Mr. Sang-yeon Lee, Mr. Sejun Park, Mr. Jun Gyu Kim, Mr. Young-Bae Choi, Ms. Jeonghwa Cho, Mr. Hyo-hyeog Jeong, Mr. Sol-moe Kang, Ms. Da-In Kim, Mr. Minhyung Lee

15:15 **Use of a Proximity Index to evaluate the influence of environmental conditions in the growing-finishing pigs' resting behaviour**

» Prof. Vasco Fitas da Cruz, Prof. Fátima Baptista, Mr. José Carlos Rico, Dr. Diogo Coelho

14:00 **(19) General: Decision and Economics**
Lecture Hall D

14:00 **How smart technologies can change farming**

» Dr. Jose A. Laporte-Uribe, Mr. Marco Lombardo, Mr. Geoffrey D. Stephens

14:15 **Mapping information flow in the livestock supply chain for beef in Sweden**

» Dr. Anna Rydberg, Dr. Cecilia Lindahl, Ms. Linnea Bark, Dr. Abdul Ghafoor Abbasi

14:30 **Pilot study on developing a sensor technology network to aid decision-making on-farm**

» Dr. Bernadette O'Brien, Ms. Deirdre de Bhailís, Ms. Michelle Fitzgerald, Mr. Terry O'Mahony, Mr. Timothy O'Sullivan, Prof. Mark Roantree, Dr. Oluwadurotimi Onibonoje

14:45 **The potential of Explainable Artificial Intelligence in Precision Livestock Farming**

» Ms. Kejsi Hoxhallari, Mr. Warren Purcell, Dr. Thomas Neubauer

15:00 **Systemic design requirements for sustainable Digital Twins in precision livestock farming**

» Mr. Kevin Mallinger, Mr. Warren Purcell, Dr. Thomas Neubauer

	Continued from **Wednesday, 31 August**

15:15 — **Digital twin technologies in dairy farming: The digital farm of the future**
» Dr. Mariska van-der-Voort, Dr. Claudia Kamphuis, Dr. Corne Kempenaar, Dr. Frits van Evert, Prof. Ioannis Athanasiadis, Dr. Jandirk Bulens

14:00 — **(20) Cows: Performance**
Lecture Hall M

14:00 — **Body weight change during early lactation is associated with milk production in automatic milking system herds**
» Prof. Marcia Endres

14:15 — **An empirical analysis on the herd lactation curve characteristics in relation to economic herd performance**
» Mrs. Yongyan Chen, Dr. Miel Hostens, Mr. James.L Ehrlich, Prof. Mirjam Nielen, Dr. Wilma Steeneveld

14:30 — **Monthly daily milk yield prediction for individual cow using test-day and genomic evaluation data**
» Dr. Fan Zhang, Prof. Kent Weigel, Dr. Victor Cabrera

14:45 — **Decision parameters for individual lactation length of dairy cows**
» Mrs. Anne Mette Kjeldsen, Dr. Vivi Thorup, Prof. Søren Østergaard, Mr. Lars Arne Hjort Nielsen

15:00 — **Validation of a software module for gradually reducing milk yield before dry-off in high yielding dairy cows**
» Mr. Axel van Ruitenbeek

15:15 — **Detection of mastitis in Holstein dairy cows using an automated infra-red thermography system**
» Dr. Jennifer Weller, Dr. Lindsey Drummond, Dr. Stephanie Buijs

15:30 — **Coffee and Tea Break**
Lecture Hall and University Campus

16:00 — **(21) Cows: Reproduction**
Lecture Hall A

16:00 — **Evaluation of oestrus detection methods across three housing systems in Holstein dairy heifers**
» Dr. Ricardo A. Figueiredo, Mr. Gustavo Mazon, Ms. Giulia Gobbo, Mr. Benoit Boully, Dr. Joao H. C. Costa

16:15 — **Preliminary outcomes of a low-power oestrus detection system in dairy farms**
» Prof. Simona Porto, Dr. Marco Bonfanti, Ms. Giusi Midolo, Ms. Giulia Castagnolo, Dr. Francesca Valenti, Prof. Claudia Arcidiacono, Prof. Giovanni Cascone

16:30 — **Association of estrous expression detected by an automated activity monitoring system within 50 DIM and reproductive performance of lactating Holstein cows.**
» Dr. Stefan Borchardt, Ms. Christie Tippenhauer, Mr. Jan-Lukas Plenio, Mr. Alexander Bartel, Mr. Augusto Madureira, Prof. Ronaldo Cerri, Prof. Wolf Heuwieser

16:45 — **Timing of artificial insemination and using sexed or conventional semen after automated activity monitoring of estrus in nulliparous Holstein heifers**
» Ms. Christie Tippenhauer, Mr. Jan-Lukas Plenio, Mr. Augusto Madureira, Prof. Ronaldo Cerri, Prof. Wolf Heuwieser, Dr. Stefan Borchardt

17:00 — **Validation of BovHEAT — an open-source analysis tool to process data from automated activity monitoring systems in dairy cattle for estrus detection.**
» Mr. Jan-Lukas Plenio, Mr. Alexander Bartel, Mr. Augusto Madureira, Prof. Ronaldo Cerri, Prof. Wolf Heuwieser, Dr. Stefan Borchardt

17:15 — **Use of an accelerometer as a tool to predict pregnancy status of lactating dairy cows before ultrasonography diagnosis**
» Mr. Julio de Matos Vettori, Dr. Damiano Cavallini, Dr. Melania Giammarco, Dr. Ludovica Mammi, Prof. Andrea Formigoni, Dr. Isa Fusaro

Continued from Wednesday, 31 August	

16:00 **(22) Calves: Health and Welfare I**
Lecture Hall B

16:00 **E-learning courses are a popular tool to implement SOPs in calf care**
» <u>Mrs. Sophia Neukirchner</u>, Prof. Wolf Heuwieser, Dr. Katharina Charlotte Jensen

16:15 **Identifying early life indicators of high performance in dairy calves based on precision technology measured variables: early evidence**
» Dr. Melissa Cantor, Mrs. Megan Woodrum Setser, Dr. Heather Neave, <u>Dr. Joao Costa</u>

16:30 **Automatic thermal monitoring of calves using low-cost infrared thermography**
» <u>Dr. Laszlo Talas</u>, Dr. John Fennell

16:45 **Early detection of bovine respiratory disease in calves by use of an ear-attached accelerometer**
» <u>Mrs. Nasrin Ramezanigardaloud</u>, Dr. Laura Lidauer, Mrs. Alexandra Steininger, Mr. Florian Kickinger, Mr. Manfred Öhlschuster, Mr. Wolfgang Auer, Mr. Christian Guse, Dr. Michael Iwersen, Prof. Marc Drillich, Dr. Daniela Klein-Jöbstl

17:00 **Early BRD detection in young cattle**
» <u>Prof. Didier Concordet</u>, Mrs. Marlène Guiadeur, Mrs. Béatrice Mounaix, Mr. Clément Allain, Prof. Sébastien Assié, Mrs. Malika Chassan

17:15 **Using machine learning and precision livestock farming technology for early indication of health status in preweaned dairy calves**
» Dr. Melissa Cantor, Mr. Enrico Casella, Dr. Simone Silvestri, Dr. Dave Renaud, <u>Dr. Joao Costa</u>

16:00 **(23) General: Product Development**
Lecture Hall D

16:00 **Evaluation of the Vienna Surface Tester for the application on bedding materials used in livestock farming**
» <u>Ms. Karina Weimar</u>, Mrs. Barbara Pichlbauer, Dr. Johannes Schramel, Prof. Christian Peham, Prof. Marc Drillich, Dr. Michael Iwersen

16:15 **Validation of accelerometer data to measure rear leg movement during milking**
» <u>Mr. Martin Browne</u>, Dr. John Upton

16:30 **Cow locomotion energy harvester for powering IoT wearables**
» <u>Dr. David Blažević</u>, Mr. Simon Phillip, Dr. Janne Ruuskanen, Ms. Jasenka Dizdarević, Prof. Paavo Rasilo, Prof. Admela Jukan

16:45 **Evaluation of a climate sensor for the on-farm use in cattle barns**
» <u>Dr. Daniela Klein-Jöbstl</u>, Mr. Felix König, Ms. Anne Simoni, Mr. Christian Guse, Prof. Marc Drillich, Dr. Michael Iwersen

17:00 **Development of a wearable RFID reader to monitor animal information through smart glasses for augmented reality in livestock farms**
» Dr. Giuseppe Todde, <u>Dr. Gabriele Sara</u>, Dr. Daniele Pinna, Dr. Valentino Artizzu, Prof. Lucio Davide Spano, Prof. Maria Caria

17:15 **Evaluation of a rising plate meter tool to measure herbage mass on Austrian pastures**
» <u>Mr. Jose Chapa</u>, Mrs. Barbara Pichlbauer, Mr. Christian Guse, Mr. Martin Bobal, Prof. Marc Drillich, Dr. Michael Iwersen

16:00 **(24) Sheep and Goats**
Lecture Hall M

16:00 **Health monitoring in dairy goats: Is there a market for rumen sensors?**
» <u>Mr. Wim Govaerts</u>

Continued from **Wednesday, 31 August**

16:15

Calibration of a novel Bluetooth Low Energy (BLE) monitoring device in a sheep grazing environment

» Ms. Aimee Walker, Prof. Nicholas Jonsson, Dr. Anthony Waterhouse, Dr. Heather McDougall, Dr. Fiona Kenyon, Dr. Ann McLaren, Dr. Claire Morgan-Davies

16:30

Evaluation of health parameters and rumen motility after administration of a rumen sensor bolus in dairy goats

» Ms. Marjolein Brack, Dr. Jan Govaere

16:45

Nematode parasitism affects lying time and overall activity patterns in lambs following pasture exposure around weaning

» Dr. Niclas Högberg, Dr. Anna Hessle, Prof. Lena Lidfors, Prof. Johan Höglund

17:00

Assessing goats fecal avoidance using image analysis based monitoring

» Dr. Mathieu Bonneau, Mr. Xavier Godard, Dr. Jean-Christophe Bambou

17:15

Validation of a 3D imaging device to measure new morphological phenotype on ewes

» Mrs. Laurence Depuille, Mr. Laurent Delattre, Mr. Arnaud Delpeuch, Mr. Mayeul Duval, Mr. Térence Dechaux, Dr. Thibault Luginbuhl, Ms. Elodie Doutart, Mrs. Cécile Valadier, Mr. Jean-Marc Gautier

18:00

Transfer to Gala Dinner
From conference venue to event location

19:30

Gala Dinner
Vienna Tramway Museum

Thursday, 1 September

09:00

Farm Tour
VetFarm
Chaired by: The Organizing Committee Committee

Friday, 2 September

07:00

Conference Office
Banquet Hall

09:00

(25) Calves: Health and Welfare
Lecture Hall A

09:00

Feeding behaviors collected from automatic milk feeders were associated with disease in group-housed preweaned dairy calves in the Upper Midwest USA

» Prof. Marcia Endres

09:15

Automatic monitoring of suckling behaviour in lactating calves under two feeding alternatives

» Ms. Patricia Carulla, Mr. Adrián Ramón, Mr. Francisco Sebastián, Ms. Aránzazu Villagrá, Dr. Fernando Estellés

09:30

Ruminating behavior of suckling dairy calves under two feeding strategies

» Mr. Adrian Ramon Moragues, Ms. Patricia Carulla, Mr. Francisco Sebastián, Dr. Fernando Estellés, Ms. Aránzazu Villagrá

09:00

Poster Session
Banquet Hall

	Continued from **Friday, 2 September**

09:45	**Industry and Farmers Forum**
	Lecture Hall A

11:00	**Coffee and Tea Break**
	Lecture Hall and University Campus

11:30	**(26) Cows: Behaviour II**
	Lecture Hall A

11:30 **Combining location and pedigree data to estimate heritability of social interactions in dairy cattle**
» Prof. Lars Rönnegård, Ms. Ida Hansson, Dr. Freddy Fikse

11:45 **Measuring brush use in group housed dairy cattle**
» Dr. Borbala Foris, Ms. Negar Sadrzadeh, Mr. Joseph Krahn, Prof. Marina A. G. von Keyserlingk, Prof. Daniel M. Weary

12:00 **Impact of introducing feed outside of the milking robot on visit frequency and welfare of dairy cows managed in an automatic milking system**
» Ms. Francesca Johansen, Dr. Stephanie Buijs, Ms. Deborah McConnell, Dr. Gareth Arnott

12:15 **Faecal cortisol metabolites and behavioural indicators of stress during the transition from conventional to automatic milking in multiparous dairy cows**
» Dr. Martina Zappaterra, Dr. Laura Menchetti, Prof. Barbara Padalino, Dr. Olimpia Barbato, Prof. Rupert Palme, Mrs. Stella Agradi, Dr. Giulio Curone, Prof. Daniele Vigo, Prof. Gabriele Brecchia, Prof. Leonardo Nanni Costa

12:30 **Accelerometer based monitoring of behaviour of cows with restricted access to pasture compared to confined conditions**
» Mrs. Barbara Pichlbauer, Mr. Christian Guse, Mr. Martin Bobal, Dr. Sabine Macho-Maschler, Prof. Rupert Palme, Prof. Marc Drillich, Dr. Michael Iwersen

12:45 **Association of behavior with subclinical ketosis in transition dairy cows**
» Dr. Stefan Borchardt, Mr. Lukas Bretzinger, Mr. Jan-Lukas Plenio

11:30	**(27) Cows: AMS and Mastitis**
	Lecture Hall B

11:30 **Effectiveness of online training on proper sampling and treatment techniques for dairy farm employees**
» Prof. Wolf Heuwieser, Mrs. Rachel Moody, Mr. Michael Zurakowski, Mr. Paul Virkler

11:45 **Automatic Milking Systems: Online modules and training**
» Dr. Nicolas Lyons, Ms. Jessica Bell, Dr. Victoria Alexander, Dr. Juan Gargiulo

12:00 **Improvement of the electrical conductivity measurement system of milk that compensates for temperature effect using neural network for inline mastitis detection devices: A preliminary study**
» Mr. Murat Gocen, Ms. Özgenur Kafkas, Dr. Fatih Gulec, Dr. Halit Kanca

12:15 **Comparison of clustering analysis methods in assessment of productivity parameters in dairy cows milked by Automatic Milking Systems**
» Ms. Karina Brotto Rebuli, Dr. Laura Ozella, Dr. Simone Vernengo, Ms. Carola Salvetto, Dr. Gianluca Montrucchio, Prof. Mario Giacobini

12:30 **Modelling the impact of automated gradual reduction of milk yield before dry-off on udder health and economics**
» Mr. Jasper van der Veek, Dr. Beate Maaßen-Francke, Prof. Henk Hogeveen