



AETE

Association Européenne des Technologies de l'Embryon
Association of Embryo Technology in Europe

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AETE Newsletter Issue 57

Editor: [Roger Sturmeijer](#)

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PRESIDENTS LETTER

Dear Friends, Dear members of the AETE,

As I write this letter it is June, turning into July, 2022... how big is the cliché but ... time is flying! 'Post-Covid' times have arrived and we are all eager to meet each other again in a live, preferably international, environment. I am happy to announce here that we are all grateful for the great opportunities generated in **Utrecht for our**

next physical event in September. A nice selection of attractive abstracts were accepted for presentation at our the 38th Annual meeting of the AETE. An appealing list of invited speakers are ready to share their newest scientific findings and we have two very interesting and interactive workshops planned. More than 16 sponsors will be lined up to introduce you to their new products. And of course, the LOC did a great job to secure one of the finest social events in AETE's history. As a society we are grateful for the fact that some sponsors have even decided to support specific parts of the social program, or helped in covering the travel expenses of our invited speakers.

As we work to finalize the conference program, including the short oral presentations we are also excited to be choosing the students who will be shortlisted for our prestigious student competition. As a society, we care deeply about students, and we like to offer them an ideal environment to train their presentations skills. Furthermore, this year we offer for the first time the possibility for students to apply for an AETE student travel grant. We like to maximize the opportunity for all students to come to our annual meetings. For 2022 we had up to 5 grants available, up to a maximum of 250 euro per awardee. So, please, check our website under the "student tab" and discover all the possibilities and regulations. It may be a great opportunity for students for our 2023 event.

Also this year, we will continue with our practitioner's forum, that was organized for the first time in Murcia. Again, we will have this planned in parallel with the main program and I am very happy to see the program. We will have 1h and 30 min available to discuss the newest insights in hormonal use for superovulation programs and practitioners have been invited to share their field data. Covid taught us that several new initiatives can be organized together with our society to reach out to practitioners. Our webinars in 2021 were very successful and we should definitely keep this format in mind. A

particular highlight for us was the collaboration with national embryo technology societies such as SIET and AETd, which were a great example and should be continued. So, please, approach us if AETE can be of any help in organizing a practitioners event.

I am very positive about the future of our society. The successful collaboration with the Brazilian Embryo Technology Society (SBTE) is ongoing and we continue to publish our abstracts and invited reviews together in Animal Reproduction. This is a great opportunity for our society. Both societies have representatives on each other's meetings. Also, our collaboration with IETS is outstanding. For our AETE 2023 meeting, we can already announce that Greece will be the country to be and the local organizing committee is securing one of the finest venues we ever had. To be continued ...

The AETE board is also rejuvenating as we are looking for new board members to join forces. So please, step up and propose yourself for the board member elections during our next General Assembly meeting. Daniel Le Bourhis is leaving our board after an AETE service of 8 years. Daniel served in the board as representative of the ET business and he was our liaison officer between the AETE and the French foundation and authorities. Daniel has been a great board member, always constructive and looking for the best possible solutions for our society. His great knowledge of the practitioner's field has been a substantial asset in our board. He had a crucial role in for example setting up the practitioner's forum. I am sure you all still remember the magnificent AETE meeting we had in Nantes, France, where Daniel chaired the local organizing committee. So, Daniel, in the name of all the members of our society, I would really like to thank you for the significant efforts you made for our society.

In addition, my time as a board member is coming to an end. In 2012 I started my AETE career in Saint-Malo and was responsible for the student affairs. Since fall 2018 I had the privilege to serve the society as a President. It was an intense and not always easy task to fulfill but I am very proud about the accomplishments of our board team over the last years. It was always a pleasure to work together with every board member and I truly enjoyed this fruitful and always constructive collaboration. I think, as a team, we can look back with satisfaction on the transition of the AETE during the past years. I like to thank all members of the society, but especially all the governors of the board of the AETE for their confidence and for the great team

spirit. Of course, I am leaving the board and not AETE, so I will stay around for sure.

I wish you all a great and relaxing summer together with your beloved ones. I am very confident for a great future of our society. See you in Utrecht!

Jo Leroy, President of the AETE

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STUDENT TRAVEL GRANT AWARDEES

We are delighted to be able to support **two students** with a travel bursary of €250 to help in their costs to attend the AETE Annual meeting in Utrecht. Our grantees are **Davoud Eshghichaharborj**, from Shiraz University in Iran and **Iris Rodero**, from UAB, Spain. Each of our grantees will have the opportunity to give a “TED-talk” style overview of their research in Utrecht and each have written a short article outlining their projects.

Congratulations to Davoud and Iris; we are really excited to learn about your research – which is previewed below. And remember to check the **website** for details of how to apply for one of our travel grants for AETE 2023.

DAIRY COW FERTILITY IMPROVED WITH THE HELP OF CAMELS

Davoud Eshghi chaharborj^a, Mojtaba Kafi^a, Hassan Sharifi yazdi^a, Mehdi Azari^a, Nasrolah Ahmadi^b, Abbas Rowshan Ghasrodashti^c, Mohammad Sadeghi^a

Subclinical endometritis (SE) is one of the most prevalent types of uterine diseases in postpartum dairy cows, negatively affecting reproductive performance. Despite the acceptable effects of different therapeutic agents including antibiotics, there is an urgent need to develop new non-antibiotic substances for treatment of uterine infections in lactating dairy cows. Blood serum of dromedary camels (DCBS) contains a unique type of antibodies with a high potency to neutralize toxins and to identify and inactivate multiple bacterial pathogens. The present study was designed to evaluate the efficacy of intrauterine administration of DCBS on uterine histology, cytology, pregnancy rate and endometrial mRNA expression of COX2, IL-1 β , IL-8, and iNOS in cows with or without SE as compared to different conventional treatments. The results of the present study showed that DCBS is safe when

used as an intrauterine preparation. Furthermore, intrauterine administration of DCBS improves uterine health as evidenced by decreases in the percentage of the uterine PMNs and the mRNA expression level of endometrial pro-inflammatory cytokines and mediator genes in cows with SE. The results of the present study further showed that DCBS, as a non-antibiotic treatment, can effectively improve the pregnancy rate in cows with SE. Further studies with larger number of animals are required to verify the effect of DCBS on the pregnancy rate in cows with SE.

Since submitting his abstract, Davoud's research has been published in *Animal Reproduction Science* (240; 106973)

Learn more about Davoud's research at AETE 2023.

STRATEGIES FOR OPTIMISING PROTOCOLS FOR VITRIFICATION AND WARMING IN CATTLE IVP.

Iris Martinez-Rodero

Cryopreservation of *in vitro* produced (IVP) bovine embryos is essential to facilitate genetic selection and global trade as well as to store the surplus of embryos generated through *in vitro* technologies. Vitrification appears to be superior to traditional slow freezing for cryopreserving IVP bovine embryos, as they are highly susceptible to cryoinjury. However, the lack of a standard methodology for IVP embryo vitrification that allows for easier and more practical logistics for the transfer of IVP embryos on farms has hindered the use of these embryos in cattle production systems. My research focuses on the development of four strategies to optimize bovine IVP blastocyst vitrification.

First, a shorter vitrification protocol was found to improve post-warming outcomes and time efficiency after in-straw warming, which allows the direct transfer of warmed embryos to the recipient's uterus. Second, a bacterial exopolysaccharide, EPS ID 1, was added to the vitrification media resulting in higher re-expansion rates and lower apoptosis after warming. The beneficial effects of the use of EPS ID1 were

observed after vitrification of IVP blastocysts using both cryotop and in-straw warming method. Third, the artificial collapse of blastocoel demonstrated a positive effect on blastocysts survival after vitrification/warming. Furthermore, it arises as a minimally invasive approach to sex IVP embryos by analysing blastocoelic cell-free DNA. Finally, the differences observed in the blastocyst the study of the permeability parameters (L_p and P_s) of expanded IVP blastocysts at different temperatures and culture lengths allowed for the design of *in-silico* vitrification protocols, which could improve current post-warming outcomes as they will be based on blastocysts permeability in each specific condition.

Together, the results of this thesis could contribute to the standardization of IVP bovine embryo vitrification and its application to field conditions.

Learn more about Iris's research at AETE 2023

HOW WOULD YOU LIKE AETE TO UPDATE YOU?

The world of communication is changing at a startling pace. In the past 10 years, we have moved to a 'post-email' world, where we are now battling multiple communication channels, including social media (FaceBook, Twitter, Instagram, WhatsApp), video and chat (Teams, Zoom, Cisco) as well as more traditional sources of communication such as email and websites.

To make sure that we remain current and are reaching our members effectively we have prepared a short survey, which we would invite you to complete. It is anonymous (although we will ask for geographical and age-range data). The intention is merely to help the Board make certain that communications are as effective and relevant as possible.

Please scan the QR Code to be taken to the survey link:



Thank you!

PRACTITIONERS FORUM

AETE proudly presents the Practitioners Forum 2022. This 1.5 h event will take place during the afternoon of our first meeting day, September 15th. Three main topics will be covered in an interactive way.

Firstly, we will discuss the current status of the availability of porcine pituitary-derived FSH products on the market. The FSH providers on the European market will give a brief update and there will be plenty of time for questions and discussion.

Next, we will cover several important aspects of donor heifer management, where practitioners will share recent experiences and new data. We hope to formulate attractive recommendations and for that, we invite you to join a fruitful discussion.

Finally, with the generous support of [Calier](#), a new tool will be presented. This tool is a software developed to evaluate the economic value of different breeding and embryo technologies strategies. Its objective is to help practitioners to show the economic viability and investment return for a specific farm.

NEWS FOR ET PRACTITIONERS FROM COMMISSION DELEGATED REGULATION (EU) 2020/686

Jan Detterer

The approval of germinal product establishments and the traceability and animal health requirements for movements within the Union of germinal products of certain kept terrestrial animals are laid down in this delegated regulation.

The regulations are very detailed, and I want only to point out some aspects for the ET work, which caught my eye.

1. **Collection on farm**
Embryos shall be collected in a **place which is separated from other parts of the premises or establishment** and which shall be kept in good repair and constructed with materials which permit its effective and easy cleansing and disinfection.
2. **Requirements for in-vivo derived embryos**
The **zona pellucida** or, in the case of equine embryos, the embryonic capsule of each embryo shall be **examined** over its entire surface area at not less than **50x magnification** and certified to be intact and free of adherent material.
3. **Trypsin treatment not obligatory, but as the case may be**
The standard washing procedure shall be modified to include additional washes with the enzyme **trypsin**, according to the IETS Manual, **when inactivation or removal of certain pathogens is required.**
4. **Storage of in-vivo and vitro embryos/oocytes**
In-vivo derived embryos, **in vitro** produced embryos and oocytes **shall be stored in distinct storage containers** assigned for each type of germinal product and the handling of stored germinal products of different types and species must be carried out by separate staff or at a different time.
In shipping containers it is allowed to transport different types of germinal products, if they are transported in a container where they are separated from each other by physical compartments or by being placed in secondary protective bags (2021/403).
5. **Storage of embryos/oocytes before dispatch to other member states**
Frozen embryos or oocytes shall, prior to dispatch to another Member State, be **stored** in storage premises referred to in point 2(b) of Part 2 of Annex I for a period of **at least 30 days** from the date of their collection or production.

6. **Work area of Embryo collection teams**
An embryo collection team is approved for the collection, processing, storage and transport of **in vivo derived embryos.**

*There is a draft in current discussion that embryo collection teams can **also work with oocytes.***

CRV AETE PRE- CONGRESS WORKSHOP

Wednesday September 14 from 10:00 till 15:00

Title: **How to run a routine embryo production facility; practical aspects.**

Place: CRV Dairy Breeding Centre in Wirdum
Maximum number of participants: 30

Costs per participant €50 (includes retour bus trip Utrecht - Wirdum)

The workshop will expose you the workflows of the routine embryo production processes at CRV. Aspects that will be addressed are: How to check the recipients based on the ovary status, which follicles to puncture during OPU, how to select the best embryos for biopsy and how to vitrify these biopsied embryos. Aspects will be demonstrated and hands-on activities are organized.

In the morning there will be explanation of the work flow of the IVP process and logistical aspects, plus a tour around the building with views in the lab and the barns with the donor cows. After the lunch there will be 2 parallel hands-on sessions.

Group 1 **Animal session:** Hands-on activities on recipient selection using slaughterhouse ovaries and follicle selection during the OPU (movies of OPU screens)

Group 2 **Lab session:** Hands on activities on IVP embryo biopsy and vitrification of these biopsied IVP embryos.

Each group can have ~15 people and there is **one place left.**

Please contact [Erik Mullaart](mailto:erik.mullaart@crv4all.com) (erik.mullaart@crv4all.com) of CRV in the case of specific questions about this workshop.

2022 – UTRECHT!

After two years of virtual AETE meetings we are looking forward to a great meeting with you in Utrecht! On the picture at the upper left you can see the proud of the medieval city of Utrecht, exactly 900 years old this year, being the Dom Tower.

We found a conference venue at walking distance of the nice city center of Utrecht where we can enjoy our AETE conference presentations on a movie screen in the presence of popcorn, if you would like..



During the entire conference we will have our own 'AETE living room' where we can enjoy our coffee breaks and lunches while we meet each other between the sponsor booths.

Starting with the welcome reception at Wednesday evening on the 14th of September.



And during the Thursday and Friday evening we will of course enjoy our social events in the evening in a great and medieval atmosphere.

For the evenings and our social events we found spectacular locations in a great and medieval atmosphere; A gala dinner in a medieval church that now serves as a museum for old clocks and self-making old music machines and organs, houses a special environment for a lively and spectacular dinner. A BBQ, live music and dance in the garden of Leeuwenbergh, originally a guesthouse for poor people erected in 1567 by the noble woman Agnes van Leeuwenbergh,

nowadays a perfect venue for our last evening together. And last but not least you can enjoy a personal guided tour through the city center by members of the LOC.

We cannot wait and look forward to meet you in Utrecht!

We look forward to meet you in Utrecht!

How to get there



Travelling to Utrecht is super easy with many flights to Amsterdam, Schiphol Airport, and only 33 minutes by train from airport to the City center of Utrecht!



The central railway station is in between the City Center of Utrecht and our Conference venue, the Cinema Kinopolis (Address; Jaarbeursboulevard 300, 3521 BC Utrecht), it is all in walking distance.

Where to stay

There are many hotels to choose from in the direct surroundings of the conference venue and city. Booking options for hotels are provided by our booking partner Lennon Services (Web address

https://lennonservices.nl/congress/module/f122276a-52bf-4216-9728-a85b8bd6e348?thema_id=1 or via this [link](#)) who will get the best prices for your stay in Utrecht.

After so long since our last time together, we are really excited to be seeing you, in 'real life' in Utrecht.

By the way, it's still not too late to book at our early bird discounted registration rates. Head to aete.eu to find out more.

AETE 2022 PROGRAMME



AETE

Association Européenne des Technologies de l' Embryon

Association of Embryo Technology in Europe

38th SCIENTIFIC MEETING

KINEPOLIS JAARBEURS UTRECHT

Utrecht, The Netherlands

P R O G R A M

15th and 16th September, 2022

WEDNESDAY, September 14th 2022

10.00- 15.00: CRV AETE Pre-conference workshop

18.30-20.00: Registration

20.00-22.00: Welcome Reception

THURSDAY, September 15th 2022

08.00-18.00: Registration

08.15-08.30 Opening meeting: AETE President Jo Leroy and Chair of the LOC Hilde Aardema.

SESSION 1: Chairpersons: JO LEROY & JANE MORRELL

08.30-09.15: *First invited lecture:*

Marcella Milazzotto, Center of Natural and Human Science of Federal University of ABC, São Paulo, Brazil
Erasing gametes to write blastocysts: metabolism as the new player in epigenetic reprogramming.

09.15-10.00: *Second invited lecture:*

Adam Watkins, Division of Child Health, Obstetrics and Gynaecology, University of Nottingham, UK
Defining the male contribution to embryo quality and offspring health in assisted reproduction in farm animals

10.00-11.00: SPONSOR AND POSTER EXHIBITION, SPONSOR BOOTH TOUR (1) & coffee break

11.00-12.15: **Student Competition SESSION: Chairpersons: MARJA MIKKOLA & HILDE AARDEMA**

R. Jochems *et al.* *Preimplantation genetic testing for aneuploidy (PGT-A) reveals a high incidence of chromosomal errors in in vivo and in vitro pig embryos.*

A. Pérez-Gómez *et al.* *HH5 double-carrier bovine embryos show impaired development through elongation*
B. Galiano-Cogolludo *et al.* *Bovine embryos lacking progesterone receptor (PGR) develop normally through early elongation.*

N. Grechi Ribeiro *et al.* *Microplastics have a negative effect on sperm and oocytes in vitro.*

J. Yang *et al.* *First evidence of nanoplastic uptake by the maturing oocyte.*

12.15-12.30: Sponsor presentations

12.30-14.00: Lunch

SESSION 2: Chairpersons: ROGER STURMEY & TERESA MOGAS

14.00-14.45: *Third invited lecture:*

Inmaculada Parrilla, Department of Animal Medicine and Surgery, University of Murcia, Murcia, Spain
Boar seminal plasma: overview and current insights on its potential role in assisted reproductive technologies in swine.

14.45-15.45: Short oral communications: *Reproductive biology and maternal environment*

M. Zhang *et al.* *The fate of porcine sperm CRISP2 from the perinuclear theca before and after in vitro fertilization.*

S. Ataei Nazari *et al.* *Alpha-linolenic acid alleviates the detrimental effect of lipopolysaccharides during in vitro ovine oocyte development.*

K. Moorkens *et al.* *MALDI-TOF lipidomic imaging of the oviduct after short and long-term exposure to an obesogenic diet in outbred mice.*

C. Mahé *et al.* *Role of secreted proteins and heparan sulfate on sperm binding to oviduct epithelial cells in cattle.*

14.55-16.25: Practitioners forum (Parallel session):

Chairpersons: DANIEL LE BOURHIS, JAN DETTERER & HELENE QUINTON

- Availability of porcine pituitary-derived FSH products on the market.
- Donor heifer management.
- Introduction to a software program designed to assess the economic value of different breeding and embryo technology strategies. *Supported by CALIER.*

15:45-16.45: POSTER SESSION 1 (even numbers) and coffee break

16.45-18.30: *Workshop I: Sperm in the female tract - what can we learn in vivo and in vitro?*

chaired by **Sean Fair**, Department of Biological Sciences, University of Limerick, Ireland.

Kieran Meade, University College Dublin, Ireland: *Insights into the multifunctional roles of bovine host defence peptides in reproduction and immunity*

Laura Abril-Parreño, University of Limerick, Ireland: *Regulation of sperm transit across the ovine cervix.*

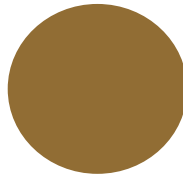
Beatriz Fernandez-Fuertes, National Institute for Agricultural and Food Research and Technology (CSIC-INIA), Madrid, Spain: *Regulation of the uterine environment by paternal factors: Insights from the bovine model.*

20.00-02:00: Gala Dinner. Museum Speelklok.

FRIDAY, September 16th 2022

- 08:00-18:00: Registration
SESSION 3: Chairpersons: JAN DETTERER & HELENE QUINTON
- 09.00-09.45: Fourth invited lecture:
Albert De Vries, Department of Animal Sciences, University of Florida, USA.
Economics of assisted reproduction in farm animals. Supported by CALIER
- 09.45-10.45: Short oral communications: *Clinical reports and supporting biotechnologies*
E. Mullaart et al. *Difference in performance between OPU and slaughterhouse derived oocytes.*
M. Hedia et al. *Follicular and systemic levels of IL-6, lipid metabolites, and oxidative stress index during the non-breeding season in mares.*
A. Bogdaniuk et al. *Seasonal variation of morphometrical characteristics of fresh and cryopreserved Saanen goat sperm.*
R. Herbicht et al. *Evaluation of a new sperm purification device for preparing bovine frozen-thawed semen for in vitro fertilization.*
- 10.45-11.45: SPONSOR AND POSTER EXHIBITION, SPONSOR BOOTH TOUR (2) & coffee break
- 11.45-12.30: General Assembly
- 12.30-14.00: Lunch/Student Lunch
SESSION 4: Chairpersons: MARJA MIKKOLA & JO LEROY
- 14.00-14.45: Fifth invited lecture (on line presentation hosted on zoom):
Hilary Dobson, School of Veterinary Science, University of Liverpool, Liverpool, UK.
Understanding the trade-off between the environment and fertility.
- 14.45-15.00: *Pioneer award 2022* - Hilary Dobson AETE Medalist Presentation (on line presentation hosted on zoom) introduced by Martin Sheldon (UK)
- 15.00-16.00: Short oral communications: *Gamete environment and next generation*
I. Martínez-Rodero et al. *Evaluation of two IVP bovine embryo sexing techniques according to their ability to preserve embryo viability after vitrification/warming.*
H. Morgan et al. *Sub-optimal paternal diet accelerates pre-implantation embryo development in mice.*
I. Xhonneux et al. *Can a maternal obesogenic diet influence offspring oocyte lipid droplets and mitochondria?*
A. Fries et al. *Glyphosate affects mRNA expression pattern of bovine oocytes and belonging cumulus cells.*
- 16.00-17.00: POSTER SESSION 2 (odd numbers) and coffee break
- 17.00-18.30: Workshop II: *Rigor in the IVF laboratory.*
chaired by **Ana Sousa Lopes**, Esco Medical, Denmark.
Nuno Costa-Borges, Embryotools, Barcelona. Spain: *Optimal conditions for the culture system: a review of QC/QA recommended practices (on line presentation hosted on zoom).*
Jennifer P. Barfield, Colorado State University, USA: *Potential applications of timelapse technology in animal agriculture.*
- 18.30-19.00: Closing session: Results of the board member elections, results for Student competition, best oral presentation and best poster presentation and invitation to the AETE Conference 2023.
- 20.00-24:00: BBQ and farewell party in Gasthuis Leeuwenbergh. *Supported by VETOQUINOL*

Please note; this programme is subject to change



**EARLY BIRD
DEADLINE FOR
AETE
REGISTRATION**

**July 15 – Don't miss
out.**