

AETE NEWSLETTER

Editor: Karolien Desmet



AETE

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

IN THIS ISSUE

Presidents Letter

AETE Board Members

Reflections on Heraklion 2023

AETE 2023 Prizes

Members' Feedback

Invitation to Brescia 2024

SBTE Annual Meeting 2023

AETE Logo

Upcoming Events

Preliminary Program

Presidents Letter

By Marja Mikkola

Dear colleagues and friends,

While writing this in mid-December nearby the polar circle, the warmth and vibes from Heraklion are only a distant but cherished memory. My heartfelt appreciation extends to Georgios Amiridis and the LOC for their efforts to make the 39th annual meeting of AETE in Heraklion a success. My warmest thanks also to all our speakers, presenters, coordinators, attendees, and the board members; to everyone contributing to the success of the

meeting. Last year we had to say goodbye to our former president Jo Leroy who did a tremendous lot of work for our society during his years at the AETE board. This year we had to say goodbye to Jan Detterer and Teresa Mogas, who took the major duties as a treasurer and secretary for many years in the board, and Roger Sturmeijer, who took care for the societal communication of our AETE. A special mention to all of them; thank you for all the years of dedicated service for our society. After the elections in Heraklion, we welcomed three new board members: Pablo Bermejo-Alvarez from Spain,

Karolien Desmet from Norway and Hanna Grothmann from Germany. Hanna, in her capacity as the ET industry representative, will navigate EU regulations and advocate for AETE members' interests. Karolien took over the responsibility for the communications: the newsletter, website and social media, and thus, this Newsletter is the first one for her being the editor. Pablo, managing student affairs, will continue fostering existing activities like student competitions and lunches while exploring innovative ways to engage students in our activities.

Looking back on the activities in year 2023, the year began by AETE representation in the IETS partner society and data collection committee meetings in January. From there, an idea of arranging joint webinars by IETS and a partner society emerged. This will be realized in the upcoming spring, with two experts, one from Europe and another from the US delving into a selected theme during an AETE-IETS webinar (date and time will follow). Inspired by IETS and the HASAC Committee, AETE also registered to the European Transparency Register, which is a database which lists organizations that try to influence the law-making and policy implementation process of the EU institutions.

At the Heraklion meeting, we experimented with electronic posters, a "pilot trial" that garnered both praise and constructive criticism. We asked for the opinion of attendees and based on this valuable feedback, the board will refine

the future poster sessions. You will find a summary of the questionnaire presented in Heraklion later in this Newsletter. In addition to e-posters, some other new concepts were launched for the first time. We had three juries, composed of volunteers, who judged the presentations of the student competitors, posters and short orals. Many thanks for all jury members for offering their time and professional experience to this valuable assignment.

Preparations for our next annual meeting are well underway. We will celebrate this special event, the 40th anniversary of our society, in Brescia, Italy. The AETE scientific committee and board have invited the keynote speakers. The Local Organizing Committee, chaired by Pierluigi Guarneri, is arranging a magnificent event with a hands-on preconference workshop and an attractive social program. Now, we are looking forward to your valuable scientific contributions. We hope to receive a wide variety of abstracts; in addition to students and scientists, also from practitioners sharing their case reports and field data. This makes together with the societal activities our meetings to what they are. Please stay tuned and follow our website for updated information of our 40th year celebration meeting in Brescia.

In closing, I want to wish you a joyous Christmas and a healthy, happy 2024.

Marja Mikkola, President of the AETE

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Reflections on the AETE 2023 in Heraklion

Dear colleagues,

The Annual Meeting is always the highlight of the year for AETE. Also this year we can look back at a splendid meeting in Heraklion, Greece. The program was filled with many interesting presentations, flash talks and poster presentations from both academia and industry. The practitioners' forum, sponsored by Calier, created a platform for very good discussions regarding donor and recipient management. Also the workshop about animal welfare in ARTs was a very interactive session, showing how important this topic is for the industry partners in the society. Sabine Meinecke-Tillmann and Burkhard Meinecke received the Pioneer award 2023 and talked about their amazing journey as partners in the lab.



Practitioners' forum

In the General Assembly, we had to say goodbye to the board members Jan Detterer, Teresa Mogas and Roger Sturmeijer. Thank you for the many years of dedicated service. The board also welcomed Pablo Bermejo-Alvarez, Hanna Grothmann and Karolien Desmet.

This year, we had some new "features" in the meeting as e.g. the electronic posters and the selection of the juries from the attendees. We received constructive feedback about the electronic posters that will be used in the future meetings. The option to be a member in the jury for the student competition, best poster and best oral presentation was positively welcomed and the jury members did a great job. All presentations were of outstanding quality and at the end of the meeting, three persons were awarded with the prize for best poster, best oral presentation and student competition. Their work is published in this newsletter.



Poster session

There was also time to talk with friends and colleagues and to relax. The Galaxy Hotel offered a wonderful background for the welcome reception and lunches. The gala dinner was organized in a traditional Cretan village where we enjoyed the local food and drinks, accompanied by Cretan music and dance. The farewell party was set in a more modern setting at The Garden in the city center where we enjoyed the Cretan nightlife. The farewell party was kindly sponsored by Vetoquinol. People who wanted to explore Crete even more had

the opportunity to book an excursion to historical sites around Crete.



Traditional Cretan dinner

Overall, the Annual Meeting was a great success, and I would like to thank the local organizing committee, all participants, sponsors, board members and those who have contributed to the meeting.

I look forward to seeing you next year!

Karolien Desmet, Newsletter and Communication

Do you want to share news?

Do you have a job opportunity at your university or company? Do you have a conference that you want to inform about? Do you have other news you want to share with members of the AETE?

Send the information to Karolien Desmet (karolien.desmet@geno.no) and the information can be published on the website and social media.



Check the website <https://www.aete.eu/news/> for news updates and our Facebook page!



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- ▶ **Folltropin®** is a purified pituitary extract that has been used successfully in breeds of cattle globally for 25 years.



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AETE 2023 Prizes

Student Competition Winner – Ben Meulders

Congratulations to the winner of the Student Competition; Ben Meulders from the Gamete Research Centre at the University of Antwerp in Belgium. He presented his research about mitochondrial dysfunction during oocyte maturation and its impact on embryo epigenetic programming.

During final oocyte maturation, mitochondrial activity increases and epigenetic changes are highly dynamic, making this a sensitive window to metabolic and environmental stressors. This may impact fertility and offspring health. Somatic cell studies show that mitochondrial ATP is important for the biosynthesis of substrates and activation of regulatory (co)enzymes required for epigenetic programming. The extent by which early epigenetic programming is dependent on oocyte mitochondrial ATP is not known. Therefore, we aimed to reduce oocyte mitochondrial ATP production using a specific ATP synthase inhibitor (oligomycin A, OM) during bovine IVM and assess the impact on global DNA methylation and histone modifications in the exposed oocytes and resultant embryos. For this, bovine cumulus-oocyte complexes were exposed to control media or CONT + 5nmol/l OM during IVM. IVF and IVC were both performed under control conditions. Oocytes, zygotes and morulae were fixed for 5mC and H3K9ac/H3K9me2 immunostaining to assess global DNA methylation and histone acetylation/methylation, respectively.

Mitochondrial ATP production rate was measured in oocytes and 4-cell embryos using a Seahorse XF HS Mini Analyzer. ATP production rate was significantly reduced (by 33.8%, $P=0.018$) in OM-exposed oocytes, but returned to normal levels in the produced 4-cell embryos ($P=0.547$), compared to CONT. OM-exposure significantly decreased 5mC staining intensity in oocytes (9.8% reduction, $P=0.019$) but increased 5mC in zygotes (22.3% increase, $P<0.001$) and morulae (10.3% increase, $P=0.041$). H3K9ac staining was not detectable in oocytes. OM significantly increased H3K9ac in zygotes (10.3% increase, $P=0.023$) but not in morulae ($P=0.414$). Finally, H3K9me2 staining intensity was increased in OM-exposed oocytes (10.9% increase, $P=0.024$), but was not changed in zygotes ($P=0.819$) and morulae ($P=0.509$). We conclude that oocyte and embryo epigenetic patterns are dependent on oocyte mitochondrial ATP production. Maturation under metabolic stress conditions that are known to impact oocyte mitochondrial functions may thus result in persistent oocyte and embryo epigenetic alterations even if the stress is alleviated and mitochondrial functions are restored at subsequent stages. This research has recently been published in *Reproduction* (<https://doi.org/10.1530/REP-23-0271>).



Best Presentation - Konstantina Asimaki

Konstantina Asimaki, from Utrecht University in the Netherlands, won the prize for Best Presentation. She presented her research about alterations in lipid droplets of bovine cumulus cells induced by endocrine disrupting chemicals. Congratulations!



Endocrine disrupting chemicals (EDC), omnipresent in the human environment, are potentially harmful to female fertility (Panagopoulos P. *et al.*, Best Pract Res Clin Obstet Gynaecol, 2023). We developed a test strategy for effects of EDCs on female fertility by using the relevant animal model of bovine oocyte in vitro maturation (IVM), which complies with the 3Rs. To identify endpoints sensitive to EDC activity, biological processes within the cumulus oocyte complex (COC) were previously tested upon exposure to known EDCs. Here, we report the effect of EDCs ketoconazole (KTZ; CYP450 enzyme inhibitor) and diethylstilbestrol (DES; estrogen receptor agonist) on lipid droplet (LD) dynamics, considering the importance of lipids in oocyte developmental competence. COCs were matured for 24h (as reported in

Asimaki K. *et al.*, Front. Toxicol., 2022) either with vehicle DMSO (0.01% v/v for DES, 0.1% v/v for KTZ), KTZ (10⁻⁸ M, 10⁻⁷ M, 10⁻⁶ M) or DES (10⁻⁹ M, 10⁻⁷ M, 10⁻⁵ M) (Sigma-Aldrich, Missouri, USA). COCs (45 per group) were stained with the specific neutral lipid dye LD540 (courtesy of Spandl J., Traffic., 2009) and cumulus cells (CCs; over 20000 per group) were imaged with confocal microscopy (top-to-bottom, 1µm z-step). LD count per cell, area, and clustering (% of LDs within a cluster) were recorded and analysed with IBM SPSS statistics software to compare groups with one-way ANOVA, followed by Tukey's post hoc test. KTZ treatment resulted in a concentration-independent increase of LD area in CCs at all concentrations (increasing KTZ: 0.40±0.04, 0.40±0.05, 0.41±0.04 µm²; vs vehicle control 0.37±0.04 µm², *P* < 0.001). In addition, LDs were more clustered (70±9%, 66±13%, 73±8%; increasing KTZ) compared to the vehicle-control (56±16%, *P*<0.001). The LD count per cell was comparable between the vehicle-control (9±2) and KTZ-treated groups (9±2, 9±2, 9±2; increasing KTZ). DES treatment of COCs led to an increase of LD area in CCs exposed to 10⁻⁹ M (0.44±0.15 µm²) and 10⁻⁵ M (0.44±0.04 µm²) DES, compared to the vehicle group (0.39±0.03 µm², *P*<0.001), but no such effect was observed at 10⁻⁷ M (0.4±0.05 µm²) DES. CCs exposed to 10⁻⁷ M DES had a slight increase in LD clustering (66±13%) compared to the vehicle group (61±12%, *P*<0.005). Finally, LD count slightly decreased at 10⁻⁵ M DES (7±2%) when compared to vehicle- and DES-groups (9±2%, *P*<0.001). We have previously shown that KTZ (unpublished) or DES do not affect cell viability, but 10⁻⁸ M KTZ reduces blastocyst rate and 10⁻⁵M DES halts oocyte nuclear maturation. Here we report that KTZ treatment possibly resulted in an increase in lipid content, based on the larger LD area, as well as

LD clustering, in a concentration-independent manner. DES treatment at all concentrations affected the LD organization dynamics. LD area was increased at 10-9 M DES, suggesting a potential increase in lipid content. A similar effect was observed at 10-5 M DES, concurrent with a reduction in LD count per cell. Finally, LD clustering was increased only at 10-7 M DES. In the future, these observations will be validated by lipidomic analysis of the neutral lipid content of cumulus cells.

Best Poster – Inés Flores Borobia

Congratulations to Inés Flores Borobia from the Animal Reproduction Department at INIA, Spain. She won the prize for Best Poster with her research about the role of GATA3 in ovine epiblast development.



GATA3 is dispensable for ovine blastocyst formation and first lineage differentiation, but plays a role in epiblast development



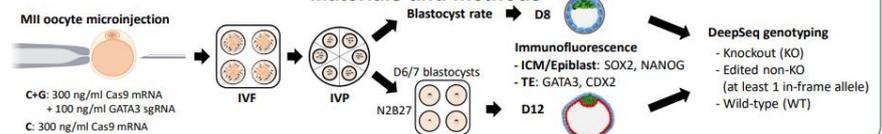
Inés Flores Borobia, Beatriz Galiano-Cogolludo, Nuria Martínez de los Reyes, Pilar Marigorta, Pablo Bermejo-Álvarez, Priscila Ramos-Ibeas
 Animal Reproduction Department, INIA, Madrid, Spain



Introduction

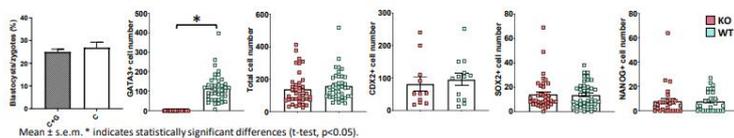
The first lineage differentiation in mammalian embryos leads to the formation of the inner cell mass (ICM) and the trophectoderm (TE). In mice, GATA3 drives TE fate and regulates other TE genes such as *Cdx2*, although its ablation does not abrogate blastocyst formation. In bovine, a recent report has described that GATA3 deletion downregulates the core pluripotency factor NANOG. The objective of this study has been to elucidate the role of GATA3 in ovine embryos by evaluating the developmental potential of GATA3 KO embryos generated by CRISPR.

Materials and methods

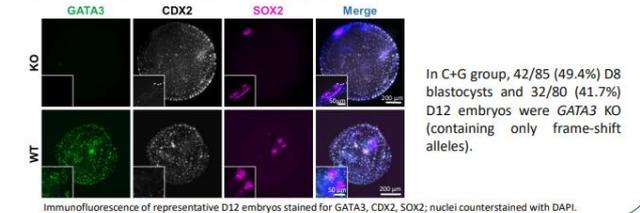
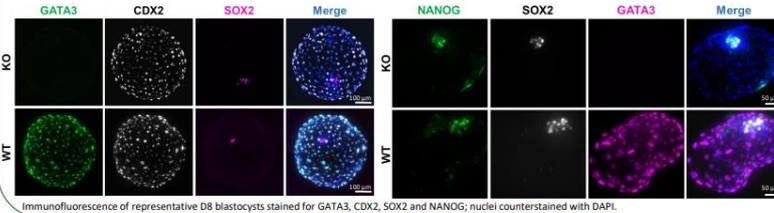
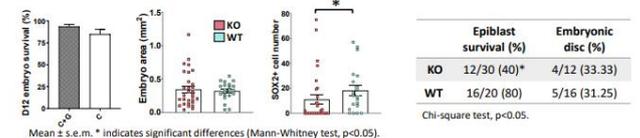


Results

D8.- Blastocyst development rate was similar in GATA3 KO (C+G) and in control (C) groups. No significant differences were detected between KO and WT embryos in CDX2+, SOX2+, NANOG+ and total cell number.



D12.- Embryo survival and growth from D6/7 to D12 were similar between C+G and C groups. Epiblast survival and SOX2+ cell number were significantly reduced in KO embryos.



Conclusions

GATA3 is dispensable for ovine blastocyst formation and TE vs. ICM specification, but its ablation impairs further epiblast development *in vitro*.

This work was supported by the projects PID2021-122153NA-I00 from the Spanish Ministry of Science and Innovation to PRI, and StG-757886-ELONGAN from the European Research Council to PBA.

Members' Feedback from the AETE 2023

Those of you who attended the annual meeting in Heraklion will remember that we asked you to complete a short survey at the end of the General Assembly. The results are presented below. We received 107 replies.

The first question concerned the **poster session**. Instead of the conventional poster session where posters are exhibited on poster boards and presenters stand by their posters during one or other of the poster sessions, electronic posters were available for viewing on screens. The posters were presented in this way this year for practical reasons; to transport poster boards to Crete would have been prohibitively expensive and, as you know, we try to keep the registration fees as low as possible for the sake of our members. We wanted to know what you thought of this format, since it would be an option of the future as well.

Yes: 59 although many had qualifying comments; **No: 32**; **Undecided: 16**

However, many people thought that more screens were needed, that the screens could be bigger, and that the posters were difficult to read because of low quality images. Some people requested more screens for private viewing. It was often difficult to attend when a specific poster was presented and interaction with the presenters was not as easy as with the conventional posters. Some of the respondents wanted more time to view the posters outside the poster sessions, and others thought that more time for each poster would be advantageous. A suggestion was that the posters that are

presented as part of the student competition or as short oral communications should not also be presented during the poster session, and another suggestion was that the audience should vote for the best poster rather than the decision being made by a panel of judges.

The second question concerned **future topics**. Again, many of you responded to this question. Basically, the answers could be divided into three categories:

- practitioner- or industry-specific topics: many people would like practical issues to be discussed, ranging from protocols for preparing donors and recipients, to straw labelling. However, opinions were divided on which species we should focus on, with some respondents wanting to focus on cattle and others wanting to include other species. We will endeavour to address more of these subjects in our pre-conference workshops and digital seminars.
- subjects for invited speakers: there was a wide range of responses in this category, unfortunately too many to present here reflecting the varied interests of our members. Thank you for the suggestions – we will really try to address some of them in the coming meetings.

Endocrine disruptors	Spermatology/ andrology	Animal models
Climate change	Epigenetics	Equine ART
ART and society	Health vs. fertility	Sheep IVF
Gene editing	3D cultures	Human IVF
Developmental biology	Microfluidics	Rabbit ART
Organoids	Welfare	Other species
Transgenesis	Machine learning	

- suggestions for early career scientists: Job dating and careers after the PhD/post doc.

The third question asked for **other comments**. Here there were some really nice responses, which makes us feel that you do appreciate our efforts, as well as some suggestion for improvements. The latter varied from comments about the difficulty of paying the registration fee from the US, to the necessity of having all the sponsor booths together. Some of

these issues are, unfortunately, out of our hands but we do try to solve as many of them as we can. Several of you said that you liked the flash talks, which were new for 2023, and another suggestion was that the talks should not be longer than 30 minutes. One comment that was especially pertinent was that the speakers should try to explain the relevance of their research for practitioners and industry. This is good advice for all speakers, no matter where we are in our careers. We may be doing some outstanding research, but we should be able to explain its relevance as well as the minutiae.

So, thank you all for your votes and comments. They are really helpful for us in deciding how to proceed in the future!

Seasons' Greetings from the Scientific Committee and hope to see you all in Italy in 2024.

Jane Morrell, Scientific Committee

Invitation to Brescia 2024

Dear colleagues,

Finally, we have Brescia, so forget what I said at Heraklion: "Welcome to Italy... but I don't know where ..."

Brescia is a beautiful city in the north of Italy. It is not as famous as Roma, Venice, or Firenze but, as you could imagine,

every Italian city has something special to offer. This year, Brescia, together with Bergamo, is the Italian capital of culture. This has unfortunately a sad reason: these two cities suffered severely during the Covid pandemic, but fortunately that's now just an old memory...

Brescia has a wonderful location in the middle of the Po Valley. The city is connected to the most important European cities with 3 international

airports: Linate, Bergamo, and Verona. A one-hour drive will take you to the beautiful Lake Garda and Lake Iseo. Brescia is also not far from Milan, Venice, and Verona and the city is very close to the wonderful Alpes.



Brescia's Cathedrals, the new and the old one

But let's talk about the meeting! The "Centro Pastorale Paolo VI", located in the center of Brescia, will host us for the two-day meeting. The building dates back to the 17th century with a typical expression of Baroque art. Hoping for two days with sunny weather, the ancient garden is great to socialize and to share experiences with a cup of good Italian coffee.



Centro Pastorale Paolo VI

The highlight of this year is the pre-conference workshop that will take place on the 4th of September. The workshop will be held at the agriculture high school ITAS G. Pastori, not far from the Paolo VI. Here all the facilities for theoretical and practical sessions are at our disposal, including a farm with 50 dairy cows.

A short walk from the Paolo VI will take us to the Piazza Arnaldo where we will have our Gala dinner enjoying music, good food and wine. Don't miss it!

In the center of Brescia you will find some beautiful architecture such as the old cathedral (12th century), the new cathedral and several cozy squares. You can also visit the castle of Brescia, built in the 13th century, where we will have the farewell party.



Brescia's Castle

Dear colleagues, this is only a little part of what Brescia offers. I'm sure the rest will be a surprise! We look forward to meeting you for two reasons: a great scientific program and fun!

Pierluigi Guarneri, head of the LOC

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SBTE Annual Meeting 2023

I was invited to attend the annual meeting of the Brazilian Embryo Technology Society (SBTE) 2023 in Campinas, to represent the AETE, and I was delighted to be able to accept. The meeting took place in Campinas, SP, in August, which feels very far away now as I sit and look at the snow outside my window in Uppsala, Sweden.

There were approximately 400 attendees for the meeting, which spanned 3 days including a half-day for pre-conference workshops and another half-day post-conference networking session on Technology and Innovation.

After the pre-conference workshops, the meeting was officially opened by the president of the Society, Prof. Dr. José Nélio de Sousa Sales, followed by a presentation from the first invited speaker, Dr. Rebecca Krisher (Genus PLc, Wisconsin, USA) as the IETS representative. She gave a presentation on “World Panorama of Embryo Production and its impact on the development of agribusiness”. This lecture was followed by a social event, for mingling and sampling of cocktails.

The plenary session covered Reproduction in Sustainable Production on the first day and Embryos on the second. The majority of the speakers were from outside Brazil, both from other South American countries and from further afield, although some of them were, in fact, ex-pats. Their full papers can be found in *Animal Reproduction* 2023, vol 20, issue 2.

The plenary sessions followed a similar pattern to the AETE meetings, with presentations from invited speakers and some short talks selected from the submitted abstracts. However, at the end

of each session, the speakers were invited to the stage, along with some specialists, for a “Round Table” i.e., a general discussion by invited experts on a set topic. This Round Table format was very interesting and provided a break from the more formal scientific presentations, whilst providing a forum for conveying important information and opinions from specialists.

The subjects covered by the invited speakers were very much focused on bovine embryo production. One of the invited speakers included some work on sheep but stressed that they were serving as a model for cattle. On the other hand, the posters (more than 100) covered a much wider range of animal and topics, including goats, sheep, and horses, among others. One of the recurring themes was the difficulty of working with late-maturing tropical breeds; perhaps we tend to take our European breeds for granted, we would have difficulty in working with cows that produce their first calf at around 4 years of age! The poster sessions were in a large hall away from the main lecture theatre, so there was plenty of room to view the posters and meet the presenters.



Annual meetings are not just about the science, of course. The opportunity to meet old friends and make new ones should not be underrated, and the possibility to meet the exhibitors and discuss their products is equally important. The coffee breaks were served in the exhibition area, giving ample opportunity to see the latest technical advances while consuming typical Brazilian delicacies. I can assure you that

I am now addicted to Brazilian cheese bread!

Altogether, it was a very enjoyable experience and I look forward to meeting our Brazilian friends again in the future.

Jane Morrell, Scientific Committee

AETE Logo Competition

In 2024 we will celebrate the 40th anniversary of AETE. To celebrate this special occasion, we want to create a brand-new logo for AETE. We are looking for members who want to show their artistic skills and make a new logo for AETE. The board will choose from the proposed logos and the winning logo will be published on the materials for the Annual Meeting, the website, newsletter and social media.



Please send your logo before Monday the **27th of May** to info@aete.eu.

We are looking forward to receiving your beautiful creations!



Upcoming Events

INTERNATIONAL EMBRYO TECHNOLOGY SOCIETY

8-12 January 2024

Denver, USA

<https://www.iets.org/Meetings/2024-IETS-Annual-Meeting>

AET-D (ET WORKING GROUP OF GERMAN-SPEAKING COUNTRIES)

20-21 June 2024

Dummerstorf, Germany

<https://www.aet-d.de/aktuelle-tagung/>

SOCIETY FOR THE STUDY OF REPRODUCTION

15-19 July 2024

Dublin, Ireland

<https://ssr.org/news-events/upcoming-events/annual-meeting-2024.html>

AETE

5-6 september 2024

Brescia, Italy

<https://www.aete.eu/annual-meeting/>

EUROPEAN SOCIETY FOR DOMESTIC ANIMAL REPRODUCTION

12-14 September 2024

<https://esdar2024.vet.bg.ac.rs/>

AETA & CETA/ACTE JOINT ANNUAL CONVENTION

16-18 October 2024

Reno, USA

https://www.aeta.org/mtg_future.asp

Preliminary Programme



AETE

Association Européenne des Technologies de l' Embryon

Association of Embryo Technology in Europe

40TH SCIENTIFIC MEETING

Brescia, Italy

Conference Venue PAOLO VI

5th – 6th September 2024

WEDNESDAY, September 4th 2024

18.30-20.00: Registration

20.00-22.00: Welcome Reception

THURSDAY, September 5th 2024

08.00-17.00: Registration

08.45-18.00:

SESSION 1: *First invited lecture:*

Cesare Galli, Fondazione Avantea, Cremona, Italy.

40 years of AETE: The contribution of scientists and practitioners to the progress of reproductive biotechnologies in Europe.



Short oral communications

Second invited lecture:

Jose Nélio de Sousa Sales, Department of Veterinary Medicine, Federal University of Juiz de Fora, Brazil / **Guilherme Pugliesi**, Animal Reproduction Department of the School of Veterinary Medicine and Animal Science of the University of São Paulo, Brazil.



Evolution over the last 40 years of the Assisted Reproduction Technologies in cattle: The Brazilian perspective.

POSTER SESSION 1 and coffee break

Short oral communications: *Student Competition*

Lunch

SESSION 2: *Third invited lecture:*

Gabriela Mastro Monaco, Reproductive Sciences Unit, Toronto Zoo, Toronto, Ontario, Canada.

40 "wild" years: The current reality and future potential of Assisted Reproductive Technologies in wildlife species.



Short oral communications

POSTER SESSION 2 and coffee break

Workshop I: **Embryo production in vivo and in vitro / Embryo transfer.**
chaired by Pierluigi Garnieri (Italy)

20.00–02:00: Gala Dinner

FRIDAY, September 6th 2024

8:00-18.00:

SESSION 3: *Fourth invited lecture:*

Rebecca Krisher, Colorado Center for Reproductive Medicine, Lone Tree, USA.

Embryo production *in vitro*: Basic principles and commercial perspectives.



Short oral communications

POSTER SESSION 3 and coffee break

General Assembly
Sponsor presentation

Lunch/Student Lunch

SESSION 4: Short oral communications

Fifth invited lecture:

Pat Lonergan, School of Agriculture and Food Science, University College Dublin, Ireland.

Embryo transfer: Past, present and future.



Pioneer award 2024 – Pat Lonergan AETE Medalist Presentation
introduced by Dimitrios Rizos (Spain)

POSTER SESSION 4 and coffee break

Workshop II: **Emerging animal diseases in Europe and ARTs.**

chaired by Hanna Grothmann, H el ene Quinton, Karolien Desmet
and James Quinn

Closing session:

Student Competition results and invitation to the AETE Conference 2025

20.00-24:00: Farewell party

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