THE ZOO AND WILDLIFE HEALTH CONFERENCE

PROGRAMEME
ONLINE CONFERENCE
6, 14, 22, 30 JULY

ZOO AND WILDLIFE HEALTH CONFERENCE
European Association of Zoo and Wildlife Veterinarians (EAZWV)

PROGRAMME

ZOO AND WILDLIFE HEALTH ONLINE CONFERENCE 2020

6th, 14th, 22nd and 30th of July 2020

Online Conference
Welcome to this new format of the Zoo and Wildlife Health Conference organized by the EAZWV!

Dear participant,

As you know the Zoo and Wildlife Health Conference 2020 was planned and organised to happen in Emmen, The Netherlands. However, due to the SARS-CoV-2 (COVID-19) pandemic in early 2020, the physical conference in Emmen had to be cancelled to protect the health of participants and organisers and uphold international regulations.

In spite of this global health crisis, the EAZWV didn’t want to fail with its compromise to offer significant education opportunities to its members, supporting scientific research and the advancement of zoo and wildlife medicine. Upon cancelation of the physical conference, the organising committee started exploring options to deliver as much of the planned scientific programme as possible, and agreed on holding an online conference for the first time in our history!

The conference will be composed of 4 sessions over the month of July, lasting approximately 3 hours and 30 minutes each and including plenaries, scientific talks, poster presentations and question sessions.

We hope you enjoy this event from the comfort and safety of your home, and we’ll meet in person again next year!

European Association of Zoo and Wildlife Veterinarians
Organised by

**European Association of Zoo and Wildlife Veterinarians (EAZWV)**

**Scientific Programme Committee**

- Fabia Wyss, Switzerland
- Ana Vale, Ireland
- Alberto Casado Gómez, Spain/United Kingdom
- Hanspeter Steinmetz, Switzerland
- Job Stumpel, The Netherlands
- Endre Sós, Hungary
- Helle Bernstorf Hydeskov, United Kingdom
- Martine van Zijll Langhout, The Netherlands
- Linda Bruins-van Sonsbeek, The Netherlands
- Javier Martinez Gimenez, United Kingdom

**Organising Committee**

- Stephanie Sanderson, United Kingdom
- Rafaela Fiuza, Portugal
- Sara Abreu, Portugal/Denmark
- Annika Posautz, Austria
Continuing Education Credits

Provided by the American College of Zoological Medicine (ACZM)

The ACZM is a registered veterinary specialty college by the American Veterinary Medical Association for sponsoring of continuing education credits. Different countries or states might have different policies or laws on acceptability of conferences, meetings or courses to qualify for continuing education (CE) credits. You are advised to check with the country or state in which you are licensed, to ensure that the CE credits provided are acceptable.

Provided by the Swiss Veterinary Association (GST)

The Swiss Veterinary Association (“Gesellschaft Schweizer Tierärztinnen und Tierärzte” or GST) is a membership association which represent the interests of veterinarians in Switzerland. The GST sponsors continuing education credits which are accepted in most European countries. However, there might be a process for conversion of credits, so you are advised to check with the country or state in which you are licensed if the CE credits provided are acceptable.
Sponsorship

We wish to acknowledge the support of the Online Conference by:

Your reliable partner for professional zoo animal nutrition!

www.granovit.ch/aliments/zoofeed-english/
Conference Code of Conduct

Confidentiality

The EAZWV deeply values the professional reputation of its members and partners. We believe that preserving the confidence of the membership is critically important, so that our members feel free to discuss the results of their professional work and experiences. We trust that participants will not divulge inappropriate information, and can openly interact with colleagues without fear of malicious exposure. Deception or any actions that deliberately compromise this trust are unacceptable and contravene the mission of the EAZWV and its annual conference. Any violation of trust will be met with the consequences deemed appropriate by the board.

Ethics and Welfare Statement

All material to be presented at the Zoo and Wildlife Health Conference, formally or informally, must adhere to high ethical standards concerning animal welfare. The material presented must:

- Follow international, national and institutional guidelines for the humane treatment of animals and comply with relevant legislation;
- Where it concerns the experimental manipulation of animals, have been approved by the ethics review committee at the institution or practice at which the studies were conducted, when such a committee exists;
- Have been approved by all authors (applies to presentations and publications at the conference);
- For studies using client-owned animals, privacy should be maintained and the information should be anonymised.

Participants concerned about the ethical basis of work undertaken by their peers should discuss this with the person concerned in the first instance and if they feel it necessary, follow up by speaking to a member of the Scientific Programme Committee.
Unauthorised Use of Information

Copyright Regulations

Please note that in your own interest and for copyright reasons it is strictly forbidden to take pictures, videos and sound recordings of any conference contribution. This includes talks, discussions, slide shows, posters, abstracts and any other conference materials. Pictures may be taken only upon authorisation of the authors and/or copyright holders. Anyone who violates this rule will face the consequences listed below, as deemed appropriate by the board, including possible legal action.

General

Any member of the EAZWV found to be in violation of the values laid out in this statement, as reviewed by the EAZWV board, may have their membership permanently revoked and be prohibited from attendance of EAZWV professional meetings and conferences, and/or may have other member benefits revoked. Any non-member in attendance at the annual conference found to be in violation of that trust, as reviewed by the EAZWV board, may be ejected from the conference without refund and prohibited from future conference attendance and membership, and may possibly be the subject of legal action.
## Conference Day 1 – 6th July 2020

Session Chair: Chris Walzer

<table>
<thead>
<tr>
<th>CET</th>
<th>Author</th>
<th>Title</th>
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<tbody>
<tr>
<td>15:00</td>
<td><strong>Introduction and Welcome</strong></td>
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<tr>
<td>15:10</td>
<td>Plenary 1 – Wildlife</td>
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<tr>
<td>15:10</td>
<td>Walzer</td>
<td>COVID-19 and the end of the Anthropocene</td>
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<td>15:40</td>
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<td><strong>Poster Presentations 1 (detailed below)</strong></td>
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<tr>
<td>16:12</td>
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<td><strong>Session 1 – Wildlife</strong></td>
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<tr>
<td>16:25</td>
<td>Schönbächler</td>
<td>Health assessment of captive and free-ranging European pond turtles (Emys orbicularis) in Switzerland</td>
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<tr>
<td>16:35</td>
<td>Shopland</td>
<td>Translocation of European captive pink pigeons (Nesoenas mayeri) to Mauritius: health screen, disease risk assessment and production of an evidence-based pre-export protocol</td>
</tr>
<tr>
<td>16:45</td>
<td>Sos-Koroknai</td>
<td>Electrocution induced by powerlines in raptors: incidence, survival rates, medical management and animal welfare</td>
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<tr>
<td>16:55</td>
<td>Posautz</td>
<td>In the search for donors - Health screening of receiving and compatible donor populations of the European ground squirrel (Spermophilus citellus) in lower Austria</td>
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<tr>
<td>17:25</td>
<td><strong>Session 2 – Bears / Mixed Topics</strong></td>
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<tr>
<td>17:30</td>
<td>Kvapil</td>
<td>Zoo animals as sentinel of emerging pathogens - West Nile virus model</td>
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<td>17:40</td>
<td>De Cuyper</td>
<td>Faecal consistency grading in brown bears (Ursus arctos): deviating from typical domestic carnivore scales</td>
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<td>17:50</td>
<td>Boesen</td>
<td>Metabolomic analysis of Scandinavian brown bears (Ursus arctos)</td>
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<td>18:00</td>
<td>Goelkel</td>
<td>Comparison of two balanced anaesthetic protocols for surgical procedures in captive European brown bears (Ursus arctos arctos)</td>
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<tr>
<td>15:52</td>
<td>Charpentier</td>
<td>The DEA 1 blood group in wild canids and compatibility testing between domestic dog and non-domestic canid blood</td>
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<td>15:54</td>
<td>Cordon</td>
<td><em>Thelazia</em> spp. eyeworm infestation in captive grey wolves: two case reports at Pistoia zoo</td>
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<tr>
<td>15:56</td>
<td>Lamglait</td>
<td>Suspected invasive <em>Paecilomyces</em> spp. rhinitis in a free-ranging American black bear (<em>Ursus americanus</em>) from Quebec, Canada</td>
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<td>15:58</td>
<td>Kalogерopoulu</td>
<td>Gallbladder wall thickness, hepatobiliary ultrasound and blood chemistry findings of formerly bile farmed Asiatic black bears (<em>Ursus thibetanu</em>) in Vietnam</td>
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<tr>
<td>16:00</td>
<td>Pereira</td>
<td>Gastric ulceration and parasitism in a captive Chinese pangolin (<em>Manis pentadactyla</em>)</td>
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<tr>
<td>16:02</td>
<td>Goddard</td>
<td>Chronic leptospira infection in a pregnant Malayan tapir (<em>Tapirus indicus</em>)</td>
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<tr>
<td>16:04</td>
<td>Sailler</td>
<td>Eosinophilic bronchopneumopathy in a six-banded armadillo (<em>Euphractus sexcinctus</em>)</td>
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<td>16:06</td>
<td>Pouilleveτ</td>
<td>Two cases of <em>Bordetella bronchiseptica</em> infections without pneumonia in a captive colony of Kikuyu black-and-white colobuses (<em>Colobus guereza kikuyuensis</em>)</td>
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<tr>
<td>16:08</td>
<td>Shopland</td>
<td>Leukoencephalomyelopathy in four eastern quolls (<em>Dasyurus viverrinus</em>) with advanced neurological investigation in an atypically young individual</td>
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<td>16:10</td>
<td>Račnik</td>
<td>Herpesviruses in free-ranging common kestrels (<em>Falco tinnunculus</em>) in Slovenia</td>
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## Conference Day 2 – 14th July 2020

**Session Chair: Michael Adkesson**

<table>
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<tr>
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<tr>
<td>15:00</td>
<td>Introduction and Welcome</td>
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<td>15:10</td>
<td>Session 3 – Reproduction</td>
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<td>15:15</td>
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<td>Gonçalves</td>
<td>Reproductive cycle stage assessment combining ultrasonography and vaginal cytology evaluation in African lions and other non-domestic felids</td>
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<tr>
<td>15:25</td>
<td></td>
<td>Ternes</td>
<td>Robotic assisted reproductive tract laparoscopy in two species of pinnipeds</td>
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<td>15:35</td>
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<td>Schwarzenberger</td>
<td>Reproductive monitoring in the okapi (<em>Okapia johnstoni</em>) - An update</td>
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<td>Poster Presentations 2 (detailed below)</td>
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<tr>
<td>16:25</td>
<td>Session 4 – Mixed Topics</td>
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<tr>
<td>16:30</td>
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<td>Lamglait</td>
<td>Physiological parameters in free-ranging muskoxen (<em>Ovibos moschatus</em>) anesthetized with butorphanol-azaperone-metadomidine and etorphine-xylazine ± butorphanol</td>
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<tr>
<td>16:40</td>
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<td>Pohlin</td>
<td>Physiological effects of lateral versus sternal recumbency in captive red deer hinds (<em>Cervus elaphus</em>) anaeasthetised with tiletamine/ zolazepam and medetomidine</td>
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<tr>
<td>16:50</td>
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<td>Hohl</td>
<td>Chewing, dental morphology and wear in tapirs (<em>Tapirus spp.</em>) and a comparison of free-ranging and captive specimens</td>
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<tr>
<td>17:00</td>
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<td>Mota</td>
<td>Comparison of blood symmetric dimethylarginine (SDMA) and creatinine as endogenous markers of kidney function in captive tigers (<em>Panthera tigris</em>)</td>
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<td>17:10</td>
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<tr>
<td>17:30</td>
<td>Session 5 – Elephants / Mixed Topics</td>
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<td>17:35</td>
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<td>Clauss</td>
<td>Medical, epidemiological and political implications of choosing a disease scoring system: the example of a foot health score for Asian elephants (<em>Elephas maximus</em>)</td>
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<tr>
<td>17:45</td>
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<td>Scharling</td>
<td>Prevalence of <em>Salmonella</em> spp., Clostridium perfringens and Clostridium difficile in the faeces of healthy elephants in Europe</td>
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<tr>
<td>17:55</td>
<td>Semjonov</td>
<td>The use of a butorphanol-azaperone-medetomidine (BAM) fixed dose combination for standing sedation in both African and Indian elephant (<em>Loxodonta africana, Elephas maximus</em>)</td>
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<tr>
<td>18:05</td>
<td>Gluntz</td>
<td>Echocardiographic and electrocardiographic evaluation in anesthetized Caribbean flamingos (<em>Phoenicopterus ruber</em>)</td>
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<td>18:15</td>
<td>Questions</td>
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**Conference Day 2 – 14th July 2020**

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<tbody>
<tr>
<td>15:55</td>
<td>Poster</td>
<td>Presentations 2 detailed</td>
</tr>
<tr>
<td>15:57</td>
<td>Callealta</td>
<td>Ovulation induction in African lions (<em>Panthera leo</em>) using the GnRH agonist burserelin-acetate</td>
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<tr>
<td>15:59</td>
<td>Fromme</td>
<td>Testicular histology, reproductive health and seasonal changes in spermatogenic activity in the male giant anteater (<em>Myrmecophaga tridactyla</em>)</td>
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<tr>
<td>16:01</td>
<td>Fromme</td>
<td>Morphology of genital organs of adult male and female southern naked-tailed armadillos (<em>Cabassous unicinctus</em>)</td>
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<tr>
<td>16:03</td>
<td>Cardia</td>
<td>The use of alphaxalone in wild, exotic, zoo and laboratory animals: a systematic review and meta-analysis</td>
</tr>
<tr>
<td>16:05</td>
<td>Einwaller</td>
<td>Cardiovascular effects of intravenous vatinoxan in wild boars (<em>Sus scrofa</em>) anaesthetized with intramuscular medetomidine-tiletamine-zolazepam</td>
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<tr>
<td>16:07</td>
<td>Rauch</td>
<td>Effect of season and diet on cardiovascular parameters in red deer (<em>Cervus elaphus</em>) anaesthetized with medetomidine-tiletamine-zolazepam</td>
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<td>16:09</td>
<td>Vitali</td>
<td>Comparison of etorphine-azaperone and etorphine-medetomidine-azaperone immobilisations in free-ranging African buffalos (<em>Syncerus caffer</em>) in Kenya</td>
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<td>16:11</td>
<td>Vitali</td>
<td>The use of nasal capnometry as a monitoring tool in free-ranging immobilised reticulated giraffes (<em>Giraffa camelopardalis reticulata</em>) in Kenya: preliminary results</td>
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<td>16:13</td>
<td>Moittie</td>
<td>Pathological findings in gorilla hearts from European zoos between 2013 and 2020</td>
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<td>16:15</td>
<td>Huberdeau</td>
<td>Hypertensive heart disease in a 29-year-old male blue-and-yellow macaw (<em>Ara ararauna</em>) with severe atherosclerosis</td>
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<tr>
<td>15:00</td>
<td><strong>Introduction and Welcome</strong></td>
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<td>15:10</td>
<td><strong>Session 6 – EEHV</strong></td>
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<tr>
<td>15:15</td>
<td>Howard</td>
<td>African elephants and EEHV: closing the gap</td>
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<td>15:25</td>
<td>Molenaar</td>
<td>Developing haematology skills to enable decision making in suspected cases of EEHV</td>
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<td>15:35</td>
<td>Common</td>
<td>Non-invasive detection of EEHV excretion in Asian elephants (<em>Elephas maximus</em>) through faecal PCR</td>
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<td><strong>Session 7 – EEHV</strong></td>
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<td>16:30</td>
<td>Ling</td>
<td>Development of EEHV-specific serology assays in Asian and African elephants</td>
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<tr>
<td>16:40</td>
<td>Hoornweg</td>
<td>Development of novel gB and gH/gL ELISAs for the serological detection of EEHV in elephants</td>
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<tr>
<td>16:50</td>
<td>Maehr</td>
<td>New insights into the composition of the Asian elephant immune system: informing strategies towards elephant endotheliotropic herpesvirus (EEHV) vaccine development and improvement</td>
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<td>17:20</td>
<td><strong>Session 8 – EEHV</strong></td>
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<td>17:25</td>
<td>Haycock</td>
<td>Modulating in the innate immunity of Asian elephants (<em>Elephas maximus</em>) with immunostimulants to control elephant endotheliotropic herpesvirus</td>
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<td>17:35</td>
<td>Haycock</td>
<td>Asian elephant (<em>Elephas maximus</em>) interferons: the potential to control elephant endotheliotropic herpesviruses</td>
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<td>Lopez</td>
<td>Treatment of clinical elephant endotheliotropic herpesvirus (EEHV 1a) with immune stimulants, including human interferon alpha</td>
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## Conference Day 3 – 22nd July 2020

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<td>15:55</td>
<td><strong>Poster Presentations 3 detailed</strong></td>
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<tr>
<td>15:57</td>
<td>Guevara</td>
<td>Asian elephant (<em>Elephas maximus</em>) juvenile surviving endotheliotropic herpesvirus haemorrhagic disease (EEHV-HD) in Kolmarden Zoo, Sweden</td>
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<tr>
<td>15:59</td>
<td>DiGeronimo</td>
<td>Cardiac troponin I in Asian elephants (<em>Elephas maximus</em>) measured by two point-of-care analysers</td>
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<tr>
<td>16:01</td>
<td>Steyrer</td>
<td>Reference intervals for haematology and clinical chemistry for the African elephant (<em>Loxodonta africana</em>)</td>
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<tr>
<td>16:03</td>
<td>Vercammen</td>
<td>Multisystemic disease in a pluriparous Asian elephant (<em>Elephas maximus</em>)</td>
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<tr>
<td>16:05</td>
<td>Schiffmann</td>
<td>Bodily integrity and posture in elephants in relation to husbandry and health - A visual guide</td>
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<tr>
<td>16:07</td>
<td>Compagnucci</td>
<td>The gut microbiota of the red panda (<em>Ailurus fulgens</em>) as functional adaptation to the particular food regime</td>
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<tr>
<td>16:09</td>
<td>Debosschere</td>
<td>When is an absent tooth not absent - The clinical importance</td>
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<tr>
<td>16:11</td>
<td>Remport</td>
<td>Occurrence of jaw fractures in captive giraffes in European zoos</td>
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<tr>
<td>16:13</td>
<td>Keles</td>
<td>Extracapsular fixation for the surgical treatment of cranial cruciate ligament rupture in an Arctic fox (<em>Vulpes lagopus</em>) held in a zoological collection</td>
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<td>16:15</td>
<td>Bohner</td>
<td>Juvenile trabecular ossifying fibroma in a female reticulated giraffe (<em>Giraffa camelopardalis spp. reticulata</em>)</td>
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# Conference Day 4 – 30th July 2020

**Session Chair: Leigh Clayton**

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<td><strong>Introduction and Welcome</strong></td>
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<td>15:10</td>
<td><strong>Plenary 2 – Aquatics</strong></td>
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<td>15:10</td>
<td>Clayton</td>
<td>Fish Medicine</td>
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<td>16:20</td>
<td><strong>Session 9 – Aquatics</strong></td>
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<td>16:25</td>
<td>Mulot</td>
<td>From the small to the big tank: translocation of manatees (<em>Trichecus manatus</em>), arapaimas (<em>Arapaima giga</em>) and other fishes to their new enclosure</td>
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<tr>
<td>16:35</td>
<td>van Wijngaarden</td>
<td>Determinants of successful rehabilitation of juvenile harbour seals infected with lungworm in a Dutch rehabilitation centre</td>
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<tr>
<td>16:45</td>
<td>Wyss</td>
<td>When a black tail turns white – Tail tip necrosis in captive-bred juvenile black-tailed antenna rays (<em>Plesiotrygon nana</em>)</td>
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<tr>
<td>16:55</td>
<td>Lecu</td>
<td>A zoo vet in a marine species field population assessment? What for? Example of veterinary input in an ecobiological study on undulate skate (<em>Raja undulata</em>) population in the English channel</td>
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<tr>
<td>17:05</td>
<td>Questions</td>
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<td>17:15</td>
<td>Break</td>
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<td>17:25</td>
<td><strong>Session 10 – Mixed Topics</strong></td>
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<tr>
<td>17:30</td>
<td>Hoby</td>
<td><em>Treponema</em> spp. associated digital dermatitis in captive European bison (<em>Bison bonasus</em>)</td>
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<tr>
<td>17:40</td>
<td>Chai</td>
<td>New imaging techniques in amphibian medicine and clinical physiology</td>
</tr>
<tr>
<td>17:50</td>
<td>Barrows</td>
<td>Management of a <em>Chlamydia psittaci</em> outbreak in three avian orders in a mixed-species exhibit</td>
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<tr>
<td>18:00</td>
<td>Soares</td>
<td>Chronic obstructive gastroenteritis caused by <em>Citrobacter freundii</em> in two adult king penguins (<em>Aptenodytes patagonicus</em>)</td>
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<tr>
<td>18:10</td>
<td>Questions</td>
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<tr>
<td>18:20</td>
<td>Closing</td>
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<tr>
<td>Time</td>
<td>Author</td>
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<td>15:50</td>
<td><strong>Poster Presentations 4 detailed</strong></td>
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<td>15:52</td>
<td>Lamglait</td>
<td>Use of symmetric dimethylarginine (SDMA) to detect renal lesions in fish: a preliminary study in brook trout (<em>Salvelinus fontinalis</em>)</td>
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<tr>
<td>15:54</td>
<td>Planas</td>
<td>Determination of reference intervals for venous blood gases in 26 juveniles and 8 sub-adults healthy <em>Crocodylus niloticus</em></td>
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<tr>
<td>15:56</td>
<td>Marschang</td>
<td>Detection of nido and adenoviruses in a group of Australian skinks (<em>Tiliqua</em> spp.) in Europe</td>
</tr>
<tr>
<td>15:58</td>
<td>DiGeronimo</td>
<td>Dermatitis associated with <em>Deviresia agamarum</em> in a savannah monitor (<em>Varanus exanthematicus</em>) and a European glass lizard (<em>Pseudopus apodus</em>) housed in a public-display aquarium</td>
</tr>
<tr>
<td>16:00</td>
<td>Schönbächler</td>
<td>Two cases of fatal spirochidiiasis in European pond turtles (<em>Emys orbicularis</em>) from Switzerland</td>
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<td>16:02</td>
<td>Gautier</td>
<td>Ocular parameters and clinical findings in a group of capture flamingos (<em>Phoenicopterus ruber</em>)</td>
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<td>16:04</td>
<td>Leineweber</td>
<td>Clinical chemistry parameters and plasma protein electrophoresis in a group of captive greater flamingos (<em>Phoenicopterus roseus</em>)</td>
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<tr>
<td>16:06</td>
<td>Sailler</td>
<td>Tick bites and avian tick-related syndrome in eleven captive birds</td>
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<td>16:08</td>
<td>IJzer</td>
<td>Sudden die-off in red-whiskered bulbuls (<em>Pyconotus jocosus</em>)</td>
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<tr>
<td>16:10</td>
<td>Rojo-Solis</td>
<td>Pharmacokinetics of single oral dose of terbinafine in common shelducks (<em>Tadorna tadorna</em>)</td>
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