

## Animal Forensic Genetics Workshop

**Organised by a Standing Committee:**    YES    ~~NO~~

### Meeting information

Date: Wed, Jul 28

Time: 5:00pm - 8:00pm

Number of participants: 42

### Chair

Name: Guillermo Giovambattista

Affiliation: Institute of Veterinary Genetics (IGEVET; UNLP-CONICET); Faculty of Veterinary Sciences, National University of La Plata.

Contact email: guillermogiovambattista@gmail.com

### Co-Chair (optional)

Name: Sree Kanthaswamy

Affiliation: School of Mathematical and Natural Sciences, New College of Interdisciplinary Arts and Sciences, ASU

Contact email: skanthas@asu.edu

## Agenda

<b>Animal Forensic Genetics Workshop (orals)</b>	
Chair(s): <b>Guillermo Giovambattista, Universidad Nacional De La Plata</b>	
Location: <b>Live 1</b>	
Date & Time: <b>Wednesday, July 28, 5:00 PM - 8:00 PM</b>	
5:00 PM	85491 <b>Invited Workshop Presentation: Allelic ladder design and production for STR genotyping.</b> Maria E. D'Amato*, <i>Forensic DNA Laboratory, Dept. Biotechnology, Faculty of Natural Sciences, University of the Western Cape, Bellville, South Africa.</i>
5:30 PM	85409 <b>SNP marker combination for discrimination of Korean native chickens using a machine learning model.</b> S Cho* <sup>1</sup> , D Seo <sup>1,2</sup> , M Kim <sup>2</sup> , E Cho <sup>3</sup> , P Manjula <sup>1</sup> , T Kalhari <sup>2</sup> , and JH Lee <sup>1,2</sup> , <sup>1</sup> <i>Division of Animal &amp; Dairy Science, Chungnam National University, Daejeon, Republic of Korea,</i> <sup>2</sup> <i>Department of Bio-AI Convergence, Chungnam National University, Daejeon, Republic of Korea,</i> <sup>3</sup> <i>Department of Bio-big data, Chungnam National University, Daejeon, Republic of Korea.</i>
5:45 PM	85413 <b>Development of 14 STR panel for forensic DNA analysis of red fox.</b> A.E. Hrebianchuk* <sup>1</sup> , N.S. Parfionava <sup>1</sup> , V.N. Lukashkova <sup>1</sup> , S.A. Kotava <sup>1</sup> , and I.S. Tsybovsky <sup>2</sup> , <sup>1</sup> <i>Scientific and Practical Centre of the State Forensic Examination Committee of the Republic of Belarus, Minsk, Republic of Belarus,</i> <sup>2</sup> <i>Republican unitary service enterprise «BelJurZabespechenne», Minsk, Republic of Belarus.</i>
6:00 PM	85470 <b>Genetic profiling of horses in forensic cases.</b> A Fornal*, K Kowalska, T Zabek, A Piestrzynska-Kajtoch, and K Ropka-Molik, <i>National Research Institute of Animal Production, Department of Animal Molecular Biology, Balice, Poland.</i>
6:15 PM	85420 <b>Design of a low-density panel of SNPs to detect fraud in cured goat cheese.</b> A M Martínez* <sup>1</sup> , A Canales <sup>1,2</sup> , M Macri <sup>1,2</sup> , and J V Delgado <sup>1</sup> , <sup>1</sup> <i>University of Cordoba, Cordoba, Spain,</i> <sup>2</sup> <i>Animal Breeding Consulting S.L., Cordoba, Spain,</i> <sup>3</sup> <i>Instituto Canario de Investigaciones Agrarias, Tenerife, Spain.</i>
6:30 PM	<b>Break.</b>
6:45 PM	85442 <b>Genomic DNA extraction from Canine feces for genotyping and identification with targeted GBS application.</b> Quoc Hoang, Kellsie Kice, Claudio Carrasco, Srinivas Chadaram*, and Rick Conrad, <i>Thermo Fisher Scientific, Austin, TX, USA.</i>



## INTERNATIONAL SOCIETY FOR ANIMAL GENETICS

7:00 PM	85481	<b>A <i>Bos indicus</i> epigenetic clock predicts age from tail hair.</b> Loan T Nguyen*, Mehrnush Forutan, Ben J Hayes, and Elizabeth M Ross, <i>Queensland Alliance for Agriculture and Food Innovation, The University of Queensland, Queensland 4072, Australia.</i>
7:15 PM		<b>Results of the 2020–2021 Comparison Test.</b> Guillermo Giovambattista.
7:30 PM		<b>Election of committee members.</b>
7:45 PM		<b>Other business.</b>

### Summary of the meeting

Dr. Guillermo Giovambattista (Chair) gave the introductions and welcomed the speakers. The invited speaker and the six selected speakers, who also presented their posters at the conference, gave their oral presentations as detailed in the Workshop Agenda.

#### **2020-2021 Animal Forensic Comparison Test**

Then, Dr Guillermo Giovambattista gave the results of the 2020-2021 Animal Forensic Comparison Test, as detail below:

- 26 Labs required DNA samples to Duty lab and 23 submitted the STR results to the Computer Lab, increasing the number of participant labs (18 labs in 2016-2017 and 19 in 2018-2019 AFCT).
- This CT included five dog samples for parentage analysis using STR markers and a serial dilution of six dog samples for genetic identification using STR markers. In addition, six questions were included in CT form.
- Sample DNA concentrations provided by Duty. 20 labs provided their DNA concentration measurements, evidencing a large variance with each other. Some labs had difficulty to measure the DNA concentration in the most dilute samples.
- Participant labs reported data from 17 to 43 STR markers, with accuracy ranging from 42.7% to 100%.
- All the laboratories answered questions 1 to 4 correctly, while a few incorrectly answered questions 5 (trio parentage analysis) and 6 (genetic identification with diluted samples).

#### **2022-2023 Animal Forensic Comparison Test**



## INTERNATIONAL SOCIETY FOR ANIMAL GENETICS

Dr. George Sofronidis proposed to move the aim of the next CT from parentage/genetic identification to specie identification, and the members present agreed to perform this suggested test. For the proposed CT, cards with blood samples or hair from different species could be submitted in order to compare both DNA extraction and genotyping. Alternatively, DNA samples could be submitted. Dr. George Sofronidis at Orivet (Australia) and Dr. Guillermo Giovambattista at IGEVET (Argentina) were nominated as the Duty Laboratory and the Computer Laboratory, respectively.

### **Elections:**

The election of the members of the Standing Committee was performed. Two members were re-elected for a second terms and three new members were nominated and elected.

The new Standing Committee will move ahead with the proposed goals including making the necessary arrangements to communicate these goals with the Society.

### **New Committee chair**

Chair: No volunteers for Chair. Previous Chair will serve in interim.

Term of service (*add years of first and second term of service*):

Affiliation:

E-mail address:

### **New Committee co-chair (optional)**

Chair:

Term of service (*add years of first and second term of service*):

Affiliation:

E-mail address:

*Note: One term runs for two bi-annual conferences (i.e. four years)*

### New Committee members

Other committee members	First term of service (from year to year)	Second term of service (from year to year)	Email address
Torsten Brendel		2021-2025	TorstenBrendel@eurofins.com
Denise Aparecida Andrade de Oliveira		2021-2025	denise.evufmg@gmail.com
Leslie A. Lyons	2021-2025		Lyonsla@Missouri.edu
Rosina Fossati	2021-2025		fossati@genexa.com.uy
Sree Kanthaswamy	2021-2025		skanthaswamy@ucdavis.edu

**COMPARISON TEST (2020-2021)**    YES    ~~NO~~    (If no delete the rest of this page)

### Duty laboratory

Contact person: Dr. med. vet. Torsten Brendel

Affiliation: Head of Operations Applied Genomics, Eurofins Genomics Europe Applied Genomics GmbH, Anzinger Str. 7a, 85560 EBERSBERG, GERMANY, Phone: +49 8092 8289-252, Fax: +49 8092 828 920 1.

E-mail address: [torstenbrendel@eurofins.com](mailto:torstenbrendel@eurofins.com)

### Comments (issues rising)

No new issues rising were discussed.

### List of recommended markers with primer information

Two alternative list of dog STR markers were recommended. In addition, some laboratories used additional markers.

Panel 1. Include the 19 STRs of the Thermo Scientific Canine Genotypes Panel 1.1, that corresponded with the ISAG dog core STRs for parentage and identification testing.

AHT121, AHT137, AHTh130, AHTh171, AHTh260, AHTk211, AHTk253, CXX0279, FH2054, FH2848, INRA021, INU005, INU030, INU055, K9-AME, REN105L03, REN162C04, REN169D01, REN169O18, REN247M23, REN54P11.

Panel 2. Include the 19 STR of the Thermo Scientific Canine Genotypes Panel 2.1

PEZ02, PEZ17, FH2017, FH2309, PEZ05, FH2001, FH2328, FH2004, FH2361, PEZ21, FH2054, FH3377, FH2107, FH2088, vWF.X, FH2010, PEZ16 FH3313 and ZFX/Y.

### ISAG dog core STRs for parentage and identification testing.


Locus	5'-3' - Forward	5'-3' - Reverse
K9-AME	GTGCCAGCTCAGCAGCCCGTGGT	TCGGAGGCAGAGGTGGCTGTGGC
AHT121	TATTGCGAATGTCAGTCTT	ATAGATACACTCTCTCTCCG
AHT137	TACAGAGCTCTTAAGTGGTCC	CCTTGCAAAGTGTGATTGCT
AHTh130	GTTTCTCTCCCTTCGGGTTT	GACGTGTGTTACGCCAG
AHTh171	AGGTGCAGAGCACTCACTCA	CCCATCCACAGTTCAGCTTT
AHTh260	CGCTATACCCACACCAGGAC	CCACAGAGGAAGGGATGC
AHTk211	TTAGCAGCCGAGAAATACGC	ATTCGCCCGACTTTGGCA
AHTk253	ACATTTGTGGGCATTGGGGCTG	TGCACATGGAGGACAAGCACGC
CXX0279	TGCTCAATGAAATAAGCCAGG	GGCGACCTTCATTCTCTGAC
FH2848	CAAAACCAACCCATTCAGTCT	GTCACAAGGACTTTTCTCTG
INRA021	ATGTAGTTGAGATTTCTCTACGG	TAATGGCTGATTTATTTGGTGG
INU005	CATGCTGGTTCTGTGTTAGGC	AAATACAATCTTGCCTGTGTGC

INU030	GGCTCCATGCTCAAGTCTGT	CATTGAAAGGGAATGCTGGT
INU055	CCAGGCGTCCCTATCCATCT	GCACCACTTTGGGCTCCTC
REN105L03	GGAATCAAAAGCTGGCTCTCT	GAGATTGCTGCCCTTTTACC
REN162C04	TTCCCTTTGCTTTAGTAGGTTTTG	TGGCTGTATTCTTTGGCACA
REN169D01	AGTGGGTTTGCAAGTGGAAC	AATAGCACATCTTCCCCACG
REN169O18	CACCCAACCTGTCTGTTCT	ACTGTGTGAGCCAATCCCTT
REN247M23	TGGTAACACCAAGGCTTTCC	TGTCTTTTCCATGGTGGTGA
REN54P11	GGGGGAATTAACAAAGCCTGAG	TGCAAATTCTGAGCCCCACTG
REN64E19	TGGAGAGATGATATCCAAAAGGA	AGCCACACTGCTTGGTGAG

**Duty laboratory for the next comparison test with contact details**

Contact person: George Sofronidis BSc
Affiliation: Orivet, St Kilda, Australia
E-mail address: george@orivet.com.au

**SIGNATURES**




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**Chair**

Dr. Guillermo Giovambattista




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**Duty laboratory**

Dr. Torsten Brendel